

3M CO
Form 10-K
February 07, 2019
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UNITED STATES

SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2018

Commission file number 1-3285

3M COMPANY

State of Incorporation: Delaware I.R.S. Employer Identification No. 41-0417775
Principal executive offices: 3M Center, St. Paul, Minnesota 55144

Telephone number: (651) 733-1110

SECURITIES REGISTERED PURSUANT TO SECTION 12(b) OF THE ACT:

Title of each class	Name of each exchange on which registered
Common Stock, Par Value \$.01 Per Share	New York Stock Exchange, Inc. Chicago Stock Exchange, Inc.
1.500% Notes due 2026	New York Stock Exchange, Inc.

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Floating Rate Notes due 2020	New York Stock Exchange, Inc.
0.375% Notes due 2022	New York Stock Exchange, Inc.
0.950% Notes due 2023	New York Stock Exchange, Inc.
1.750% Notes due 2030	New York Stock Exchange, Inc.
1.500% Notes due 2031	New York Stock Exchange, Inc.

Note: The common stock of the Registrant is also traded on the SWX Swiss Exchange.

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

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

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

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K is not contained herein, and will not be contained, to the best of Registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this

Form 10-K.

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

Large accelerated filer Accelerated filer Non-accelerated filer Smaller reporting company Emerging growth company

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

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

The aggregate market value of voting stock held by nonaffiliates of the Registrant, computed by reference to the closing price and shares outstanding, was approximately \$115.3 billion as of January 31, 2019 (approximately \$115.4 billion as of June 30, 2018, the last business day of the Registrant's most recently completed second quarter).

Shares of common stock outstanding at January 31, 2019: 575.8 million

DOCUMENTS INCORPORATED BY REFERENCE

Parts of the Company's definitive proxy statement (to be filed pursuant to Regulation 14A within 120 days after Registrant's fiscal year-end of December 31, 2018) for its annual meeting to be held on May 14, 2019, are incorporated by reference in this Form 10-K in response to Part III, Items 10, 11, 12, 13 and 14.

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3M COMPANY

FORM 10-K

For the Year Ended December 31, 2018

Pursuant to Part IV, Item 16, a summary of Form 10-K content follows, including hyperlinked cross-references (in the EDGAR filing). This allows users to easily locate the corresponding items in Form 10-K, where the disclosure is fully presented. The summary does not include certain Part III information that will be incorporated by reference from the proxy statement, which will be filed after this Form 10-K filing.

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3M COMPANY

ANNUAL REPORT ON FORM 10-K

For the Year Ended December 31, 2018

PART I

Item 1. Business.

3M Company was incorporated in 1929 under the laws of the State of Delaware to continue operations begun in 1902. The Company's ticker symbol is MMM. As used herein, the term "3M" or "Company" includes 3M Company and its subsidiaries unless the context indicates otherwise. In this document, for any references to Note 1 through Note 20, refer to the Notes to Consolidated Financial Statements in Item 8.

Available Information

The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers, including the Company, that file electronically with the SEC. The public can obtain any documents that the Company files with the SEC at <http://www.sec.gov>. The Company files annual reports, quarterly reports, proxy statements and other documents with the Securities and Exchange Commission (SEC) under the Securities Exchange Act of 1934 (Exchange Act).

3M also makes available free of charge through its website (<http://investors.3M.com>) the Company's Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, and, if applicable, amendments to those reports filed or furnished pursuant to the Exchange Act as soon as reasonably practicable after the Company electronically files such material with, or furnishes it to, the SEC.

General

3M is a diversified technology company with a global presence in the following businesses: Industrial; Safety and Graphics; Health Care; Electronics and Energy; and Consumer. 3M is among the leading manufacturers of products for many of the markets it serves. Most 3M products involve expertise in product development, manufacturing and marketing, and are subject to competition from products manufactured and sold by other technologically oriented companies.

At December 31, 2018, the Company employed 93,516 people (full-time equivalents), with 37,412 employed in the United States and 56,104 employed internationally.

Business Segments

As described in Notes 4 and 18, effective in the first quarter of 2018, the Company changed its business segment reporting as part of 3M's continuing effort to improve the alignment of its businesses around markets and customers. Business segment information presented herein reflects the impact of these changes for all periods presented.

3M manages its operations in five business segments. The reportable segments are Industrial, Safety and Graphics, Health Care, Electronics and Energy, and Consumer. 3M's five business segments bring together common or related 3M technologies, enhancing the development of innovative products and services and providing for efficient sharing of business resources. Financial information and other disclosures relating to 3M's business segments and operations in major geographic areas are provided in the Notes to Consolidated Financial Statements.

Industrial Business: The Industrial segment serves a broad range of markets, such as automotive original equipment manufacturer (OEM) and automotive aftermarket (auto body shops and retail), electronics and automotive electrification, appliance, paper and printing, packaging, food and beverage, and construction. Industrial products include tapes, a wide variety of coated, non-woven and bonded abrasives, adhesives, advanced ceramics, sealants, specialty materials, purification (filtration products), closure systems for personal hygiene products, acoustic systems products, and components and products that are used in the manufacture, repair and maintenance of automotive, marine, aircraft and specialty vehicles. 3M is also a leading global supplier of precision grinding technology serving customers in the area of hard-to-grind precision applications in industrial, automotive, aircraft and cutting tools. 3M develops and produces advanced technical ceramics for demanding applications in the automotive, oil and gas, solar, industrial, electronics and defense industries. In the first quarter of 2016, 3M sold the assets of its pressurized polyurethane foam adhesives

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business, and in October 2016 sold the assets of its adhesive-backed temporary protective films business. In the first quarter of 2018, 3M divested a polymer additives compounding business and in May 2018 divested an abrasives glass products business.

Major industrial products include vinyl, polyester, foil and specialty industrial tapes and adhesives; Scotch® Masking Tape, Scotch® Filament Tape and Scotch® Packaging Tape; packaging equipment; 3M™ VHB™ Bonding Tapes; conductive, low surface energy, sealants, hot melt, spray and structural adhesives; reclosable fasteners; label materials for durable goods; coated, nonwoven and microstructured surface finishing and grinding abrasives for the industrial market; a comprehensive line of filtration products for the separation, clarification and purification of fluids and gases; and fluoroelastomers for seals, tubes and gaskets in engines.

Major industrial products used in the transportation industry include insulation components, including Thinsulate™ Acoustic Insulation and components for cabin noise reduction and catalytic converters; functional and decorative graphics; abrasion-resistant films; adhesives; sealants; masking tapes; fasteners and tapes for attaching nameplates, trim, moldings, interior panels and carpeting; coated, nonwoven and microstructured finishing and grinding abrasives; structural adhesives; and other specialty materials. In addition, 3M provides paint finishing and detailing products, including a complete system of cleaners, dressings, polishes, waxes and other products.

Safety and Graphics Business: The Safety and Graphics segment serves a broad range of markets that increase the safety and productivity of people, facilities and systems. Major product offerings include personal protection products, such as respiratory, hearing, eye and fall protection equipment; commercial solutions, including commercial graphics sheeting and systems, architectural design solutions for surfaces, and cleaning and protection products for commercial establishments; transportation safety solutions, such as retroreflective sign sheeting; and roofing granules for asphalt shingles. As discussed in Note 3, in October 2017, 3M completed the acquisition of the underlying legal entities and associated assets of Scott Safety, a premier manufacturer of innovative products, including self-contained breathing apparatus systems, gas and flame detection instruments, and other safety devices that complement 3M's personal safety portfolio. In January 2017, 3M sold the assets of its safety prescription eyewear business. In February 2018, 3M sold certain personal safety product offerings primarily focused on noise, environmental, and heat stress monitoring.

This segment's products include personal protection products, such as certain disposable and reusable respirators, fall protection equipment, personal protective equipment, head and face protection, body protection, hearing protection and protective eyewear, plus reflective materials that are widely used on apparel, footwear and accessories, enhancing visibility in low-light situations.

Major commercial graphics products include films, inks, and related products used to produce graphics for vehicles, signs and interior surfaces.

In transportation safety, 3M provides reflective sheeting used on highway signs, vehicle license plates, construction work-zone devices, trucks and other vehicles, and also provides pavement marking systems. In the first quarter of 2016, 3M completed the sale of its library systems business. As discussed in Note 3, in May 2017, 3M completed the related sale or transfer of control, as applicable, of its identity management business. In June 2017, 3M also completed the sale of its tolling and automated license/number plate recognition business and in October 2017, sold its electronic monitoring business.

Other segment products include spill-control sorbents; nonwoven abrasive materials for floor maintenance and commercial cleaning; floor matting; and natural and color-coated mineral granules for asphalt shingles.

Health Care Business: The Health Care segment serves markets that include medical clinics and hospitals, pharmaceuticals, dental and orthodontic practitioners, health information systems, and food manufacturing and testing. Products and services provided to these and other markets include medical and surgical supplies, skin health and infection prevention products, oral care solutions (dental and orthodontic products), health information systems, inhalation and transdermal drug delivery systems, and food safety products.

In medical solutions, 3M is a supplier of medical tapes, dressings, wound closure products, and orthopedic casting materials, in addition to acute wound care, skin integrity and disinfecting port protection products. In addition, 3M markets a variety of surgical drapes, masks and preps, electrodes, stethoscopes, as well as sterilization assurance equipment and patient warming solutions designed to prevent hypothermia in surgical settings. Other products include drug delivery systems, such as metered-dose inhalers, transdermal skin patches and related components. Oral care solutions include restoratives, adhesives, finishing and polishing products, crowns, impression materials, preventive sealants, professional tooth whiteners, prophylaxis and orthodontic appliances, as well as digital

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workflow solutions to transform traditional impression and analog processes. In health information systems, 3M develops and markets computer software for hospital coding and data classification, and provides related consulting services. 3M provides food safety products that make it faster and easier for food processors to test the microbiological quality of food. As discussed in Note 3, in September 2017, 3M purchased all of the ownership interests of Elution Technologies, LLC, a Vermont-based manufacturer of test kits that help enable food and beverage companies ensure their products are free from certain potentially harmful allergens such as peanuts, soy or milk.

Electronics and Energy Business: The Electronics and Energy segment serves customers in electronics and energy markets, including solutions that improve the dependability, cost-effectiveness, and performance of electronic devices; electrical products, including infrastructure protection; and power generation and distribution.

This segment's electronics solutions include the display materials and systems business, which provides films that serve numerous market segments of the electronic display industry. 3M provides distinct products for five market segments, including products for: 1) LCD computer monitors 2) LCD televisions 3) handheld devices such as cellular phones and tablets 4) notebook PCs and 5) automotive displays. This segment also provides desktop and notebook computer screen filters that address display light control, privacy, and glare reduction needs. Major electronics products also include packaging and interconnection devices; high performance fluids and abrasives used in the manufacture of computer chips, and for cooling electronics and lubricating computer hard disk drives; and high-temperature and display tapes. Flexible circuits use electronic packaging and interconnection technology, providing more connections in less space, and are used in ink-jet printer cartridges, cell phones and electronic devices. This segment also includes touch systems products, including touch screens, touch monitors, and touch sensor components. In December 2016, 3M sold the assets of its cathode battery technology out-licensing business.

This segment's energy solutions include electrical products, including infrastructure protection, and renewable energy. This segment serves the world's electrical markets, including electrical utilities, electrical construction, maintenance and repair, original equipment manufacturers (OEM), outside plant and enterprise, as well as aerospace, military, automotive and medical markets, with products that enable the efficient transmission of electrical power. Products in this segment include pressure sensitive tapes and resins, electrical insulation, as well as the 3M™ Aluminum Conductor Composite Reinforced (ACCR) electrical power cable that increases transmission capacity for existing power lines. This segment also includes renewable energy component solutions for the solar and wind power industries, as well as infrastructure products solutions that provide municipalities both protection and detection solutions for electrical, oil, natural gas, water, rebar and other infrastructure assets. As discussed in Note 3, in June 2018, 3M completed the sale of substantially all of its Communication Markets Division, with the remaining telecommunications systems services portion based in Germany sold in December 2018.

Consumer Business: The Consumer segment serves markets that include consumer retail, online retail, office retail, office business to business, home improvement, drug and pharmacy retail, and other markets. Products in this segment include office supply products, stationery products, home improvement products (do-it-yourself), home care products, protective material products, certain consumer retail personal safety products, and consumer health care products.

Major consumer products include Scotch® brand products, such as Scotch® Magic™ Tape, Scotch® Glue Stick and Scotch® Cushioned Mailer; Post-it® Products, such as Post-it® Flags, Post-it® Extreme Notes, Post-it® Note Pads, Post-it® Labeling & Cover-up Tape, and Post-it® Pop-up Notes and Dispensers; home improvement products, including ScotchBlue™ painter tapes, surface-preparation and wood-finishing materials, Command™ Adhesive Products and Filtrete™ Filters for furnaces and air conditioners and Filtrete™ Room Air Purifiers; home care products, including Scotch-Brite® Scour Pads, Scotch-Brite® Scrub Sponges, Scotch-Brite® Microfiber Cloth products, O-Cel-O™ Sponges; protective material products, such as Scotchgard™ Fabric Protectors; certain maintenance-free respirators; certain consumer retail personal safety products, including safety glasses, hearing protectors, and 3M Thinsulate™ Insulation, which is used in jackets, pants, gloves, hats and boots to keep people warm; Nexcare™ Adhesive Bandages; and ACE® branded (and related brands) elastic bandage, supports and thermometer product lines.

Distribution

3M products are sold through numerous distribution channels, including directly to users and through numerous wholesalers, retailers, jobbers, distributors and dealers in a wide variety of trades in many countries around the world. Management believes the confidence of wholesalers, retailers, jobbers, distributors and dealers in 3M and its products — a confidence developed through long association with skilled marketing and sales representatives — has contributed significantly to 3M's position in the marketplace and to its growth.

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Research and Patents

Research and product development constitutes an important part of 3M's activities and has been a major driver of 3M's sales and profit growth. Research, development and related expenses totaled \$1.821 billion in 2018, \$1.870 billion in 2017 and \$1.764 billion in 2016. Research and development, covering basic scientific research and the application of scientific advances in the development of new and improved products and their uses, totaled \$1.253 billion in 2018, \$1.352 billion in 2017 and \$1.248 billion in 2016. Related expenses primarily include technical support; internally developed patent costs, which include costs and fees incurred to prepare, file, secure and maintain patents; amortization of externally acquired patents and externally acquired in-process research and development; and gains/losses associated with certain corporate approved investments in R&D-related ventures, such as equity method effects and impairments.

The Company's products are sold around the world under various trademarks. The Company also owns, or holds licenses to use, numerous U.S. and foreign patents. The Company's research and development activities generate a steady stream of inventions that are covered by new patents. Patents applicable to specific products extend for varying periods according to the date of patent application filing or patent grant and the legal term of patents in the various countries where patent protection is obtained. The actual protection afforded by a patent, which can vary from country to country, depends upon the type of patent, the scope of its coverage and the availability of legal remedies in the country.

The Company believes that its patents provide an important competitive advantage in many of its businesses. In general, no single patent or group of related patents is in itself essential to the Company as a whole or to any of the Company's business segments.

Raw Materials

In 2018, the Company experienced raw material price inflation across most material markets worldwide. In response, the Company continued to deploy productivity projects to minimize the impact of raw material inflation and market supply challenges, including input management, reformulations, and multi-sourcing activities. These succeeded in partially offsetting the overall raw material headwinds experienced throughout the year. To date, the Company is receiving sufficient quantities of all raw materials to meet its reasonably foreseeable production requirements. It is difficult to predict future shortages of raw materials or the impact any such shortages would have. 3M has avoided disruption to its manufacturing operations through careful management of existing raw material inventories, strategic relationships with key suppliers, and development and qualification of additional supply sources. 3M manages spend category price risks through negotiated supply contracts, price protection agreements and commodity price swaps.

Environmental Law Compliance

3M's manufacturing operations are affected by national, state and local environmental laws around the world. 3M has made, and plans to continue making, necessary expenditures for compliance with applicable laws. 3M is also involved in remediation actions relating to environmental matters from past operations at certain sites (refer to "Environmental Matters and Litigation" in Note 16, Commitments and Contingencies).

Environmental expenditures relating to existing conditions caused by past operations that do not contribute to current or future revenues are expensed. Reserves for liabilities for anticipated remediation costs are recorded on an undiscounted basis when they are probable and reasonably estimable, generally no later than the completion of feasibility studies, the Company's commitment to a plan of action, or approval by regulatory agencies. Environmental expenditures for capital projects that contribute to current or future operations generally are capitalized and depreciated over their estimated useful lives.

In 2018, 3M expended approximately \$27 million for capital projects related to protecting the environment. This amount excludes expenditures for remediation actions relating to existing matters caused by past operations that do not contribute to current or future revenues, which are expensed. Capital expenditures for environmental purposes have included pollution control devices — such as wastewater treatment plant improvements, scrubbers, containment structures, solvent recovery units and thermal oxidizers — at new and existing facilities constructed or upgraded in the normal course of business. Consistent with the Company's emphasis on environmental responsibility, capital expenditures (other than for remediation projects) for known projects are presently expected to be approximately \$75 million over the next two years for new or expanded programs to build facilities or modify manufacturing processes to minimize waste and reduce emissions.

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While the Company cannot predict with certainty the future costs of such cleanup activities, capital expenditures or operating costs for environmental compliance, the Company does not believe they will have a material effect on its capital expenditures, earnings or competitive position.

Executive Officers

Following is a list of the executive officers of 3M, and their age, present position, the year elected to their present position and other positions they have held during the past five years. No family relationships exist among any of the executive officers named, nor is there any undisclosed arrangement or understanding pursuant to which any person was selected as an officer. This information is presented in the table below as of the date of the 10-K filing (February 7, 2019).

Name	Age	Present Position	Year Elected to Present Position	Other Positions Held During 2014-2018
Inge. G. Thulin	65	Executive Chairman of the Board	2018	Chairman of the Board, President and Chief Executive Officer, 2012-2018
Michael F. Roman	59	Chief Executive Officer	2018	Chief Operating Officer and Executive Vice President, 2017-2018 Executive Vice President, Industrial Business Group, 2014-2017 Senior Vice President, Business Development, 2013-2014
John P. Banovetz	51	Senior Vice President, Research and Development and Chief Technology Officer	2017	Managing Director, DACH Region, 2016-2017 Vice President, Corporate Research Laboratory, Research and Development, 2015-2016 Global Business Director, Industrial Adhesives and Tapes Division, 2012-2015
James L. Bauman	59	Executive Vice President, Industrial Business Group	2017	Executive Vice President, Electronics and Energy Business Group, 2015-2017 Senior Vice President, Business Transformation, Americas, 2015

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				Senior Vice President, Asia Pacific, 2012-2014
Julie L. Bushman	57	Executive Vice President, International Operations	2017	Senior Vice President, Business Transformation and Information Technology, 2013-2017
Joaquin Delgado	58	Executive Vice President, Consumer Business Group	2016	Executive Vice President, Health Care Business Group 2012-2016
Ivan K. Fong	57	Senior Vice President, Legal Affairs and General Counsel	2012	
Nicholas C. Gangestad	54	Senior Vice President and Chief Financial Officer	2014	Vice President, Corporate Controller and Chief Accounting Officer, 2011-2014
Eric D. Hammes	44	Senior Vice President, Business Transformation & Information Technology	2017	Vice President, Corporate Controller and Chief Accounting Officer, 2014-2017 Vice President, Finance, International and Staff Operations, 2013-2014
Paul A. Keel	49	Senior Vice President, Business Development and Marketing-Sales	2017	Senior Vice President, Supply Chain, 2014-2017 Managing Director, 3M United Kingdom-Ireland Region, 2013-2014
Ashish K. Khandpur	51	Executive Vice President, Electronics & Energy Business Group	2017	Senior Vice President, Research and Development, and Chief Technology Officer, 2014-2017 Vice President and General Manager, Personal Safety Division, 2014

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Name	Age	Present Position	Year Elected to Present Position	Other Positions Held During 2014-2018
Jon T. Lindekugel	54	Senior Vice President, Manufacturing and Supply Chain	2018	Senior Vice President, Supply Chain, 2017 Senior Vice President, Business Development and Marketing-Sales, 2015-2017 Senior Vice President, Business Development, 2014-2015 President, Health Information Systems Inc., 2008-2014
Kristen M. Ludgate	56	Senior Vice President, Human Resources	2018	Senior Vice President, Corporate Communications and Enterprise Services, 2018 Vice President, Global Human Resources Business Operations, Human Resources, 2017-2018 Vice President, Associate General Counsel and Chief Compliance Officer, Compliance and Business Conduct, 2015-2017 Associate General Counsel, Labor and Employment, Office of General Counsel, 2013-2015
Mojdeh Poul	55	Executive Vice President, Safety and Graphics Business Group	2018	President and General Manager, 3M Canada, 2016-2018 Vice President and General Manager, Infection Prevention Division, 2014-2016
Michael G. Vale	52	Executive Vice President, Health Care Business Group	2016	Executive Vice President, Consumer Business Group, 2012-2016

Cautionary Note Concerning Factors That May Affect Future Results

This Annual Report on Form 10-K, including “Management’s Discussion and Analysis of Financial Condition and Results of Operations” in Item 7, contains forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. The Company may also make forward-looking statements in other reports filed with the Securities and Exchange Commission, in materials delivered to shareholders and in press releases. In addition, the Company’s representatives may from time to time make oral forward-looking statements.

Forward-looking statements relate to future events and typically address the Company's expected future business and financial performance. Words such as "plan," "expect," "aim," "believe," "project," "target," "anticipate," "intend," "estimate," "should," "could," "forecast" and other words and terms of similar meaning, typically identify such forward-looking statements. In particular, these include, among others, statements relating to:

- the Company's strategy for growth, future revenues, earnings, cash flow, uses of cash and other measures of financial performance, and market position,
- worldwide economic, political, and capital markets conditions, such as interest rates, foreign currency exchange rates, financial conditions of our suppliers and customers, trade restrictions such as tariffs in addition to retaliatory counter measures, and natural and other disasters or climate change affecting the operations of the Company or our suppliers and customers,
 - new business opportunities, product development, and future performance or results of current or anticipated products,
- the scope, nature or impact of acquisition, strategic alliance and divestiture activities,
 - the outcome of contingencies, such as legal and regulatory proceedings,
- future levels of indebtedness, common stock repurchases and capital spending,
- future availability of and access to credit markets,
- pension and postretirement obligation assumptions and future contributions,
- asset impairments,
- tax liabilities,
- information technology security, and
- the effects of changes in tax (including the Tax Cuts and Jobs Act), environmental and other laws and regulations in the United States and other countries in which we operate.

The Company assumes no obligation to update or revise any forward-looking statements.

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Forward-looking statements are based on certain assumptions and expectations of future events and trends that are subject to risks and uncertainties. Actual future results and trends may differ materially from historical results or those reflected in any such forward-looking statements depending on a variety of factors. Important information as to these factors can be found in this document, including, among others, “Management’s Discussion and Analysis of Financial Condition and Results of Operations” under the headings of “Overview,” “Financial Condition and Liquidity” and annually in “Critical Accounting Estimates.” Discussion of these factors is incorporated by reference from Part I, Item 1A, “Risk Factors,” of this document, and should be considered an integral part of Part II, Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations.” For additional information concerning factors that may cause actual results to vary materially from those stated in the forward-looking statements, see our reports on Form 10-K, 10-Q and 8-K filed with the SEC from time to time.

Item 1A. Risk Factors

Provided below is a cautionary discussion of what we believe to be the most important risk factors applicable to the Company. Discussion of these factors is incorporated by reference into and considered an integral part of Part I, Item 2, “Management’s Discussion and Analysis of Financial Conditions and Results of Operations.”

* Results are impacted by the effects of, and changes in, worldwide economic, political, and capital markets conditions. The Company operates in more than 70 countries and derives approximately 60 percent of its revenues from outside the United States. The Company’s business is subject to global competition and geopolitical risks and may be adversely affected by factors in the United States and other countries that are beyond its control, such as slower economic growth, disruptions in financial markets, economic downturns in the form of either contained or widespread recessionary conditions, inflation, elevated unemployment levels, sluggish or uneven recovery, government actions impacting international trade agreements, imposing trade restrictions such as tariffs, and retaliatory counter measures, government deficit reduction and other austerity measures in specific countries or regions, or in the various industries in which the Company operates; social, political or labor conditions in specific countries or regions; natural and other disasters or climate change affecting the operations of the Company or its customers and suppliers; or adverse changes in the availability and cost of capital, interest rates, tax rates, tax laws, or exchange control, ability to expatriate earnings and other regulations in the jurisdictions in which the Company operates.

* Change in the Company’s credit ratings could increase cost of funding. The Company’s credit ratings are important to 3M’s cost of capital. The major rating agencies routinely evaluate the Company’s credit profile and assign debt ratings to 3M. This evaluation is based on a number of factors, which include financial strength, business and financial risk, as well as transparency with rating agencies and timeliness of financial reporting. 3M currently has an AA- credit rating with a stable outlook from Standard & Poor’s and has an A1 credit rating with a stable outlook from Moody’s Investors Service. The Company’s credit ratings have served to lower 3M’s borrowing costs and facilitate access to a variety of lenders. The addition of further leverage to the Company’s capital structure could impact 3M’s credit ratings in the future. Failure to maintain strong investment grade ratings would adversely affect the Company’s cost of funding and could adversely affect liquidity and access to capital markets.

* The Company's results are affected by competitive conditions and customer preferences. Demand for the Company's products, which impacts revenue and profit margins, is affected by (i) the development and timing of the introduction of competitive products; (ii) the Company's response to downward pricing to stay competitive; (iii) changes in customer order patterns, such as changes in the levels of inventory maintained by customers and the timing of customer purchases which may be affected by announced price changes, changes in the Company's incentive programs, or the customer's ability to achieve incentive goals; (iv) changes in customers' preferences for our products, including the success of products offered by our competitors, and changes in customer designs for their products that can affect the demand for some of the Company's products; and (v) changes in the business environment related to disruptive technologies, such as artificial intelligence, block-chain, expanded analytics and other enhanced learnings from increasing volume of available data.

* Foreign currency exchange rates and fluctuations in those rates may affect the Company's ability to realize projected growth rates in its sales and earnings. Because the Company's financial statements are denominated in U.S. dollars and approximately 60 percent of the Company's revenues are derived from outside the United States, the Company's results of operations and its ability to realize projected growth rates in sales and earnings could be adversely affected if the U.S. dollar strengthens significantly against foreign currencies.

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* The Company's growth objectives are largely dependent on the timing and market acceptance of its new product offerings, including its ability to continually renew its pipeline of new products and to bring those products to market. This ability may be adversely affected by difficulties or delays in product development, such as the inability to identify viable new products, obtain adequate intellectual property protection, or gain market acceptance of new products. There are no guarantees that new products will prove to be commercially successful.

* The Company's future results are subject to fluctuations in the costs and availability of purchased components, compounds, raw materials and energy, including oil and natural gas and their derivatives, due to shortages, increased demand, supply interruptions, currency exchange risks, natural disasters and other factors. The Company depends on various components, compounds, raw materials, and energy (including oil and natural gas and their derivatives) supplied by others for the manufacturing of its products. It is possible that any of its supplier relationships could be interrupted due to natural and other disasters and other events, or be terminated in the future. Any sustained interruption in the Company's receipt of adequate supplies could have a material adverse effect on the Company. In addition, while the Company has a process to minimize volatility in component and material pricing, no assurance can be given that the Company will be able to successfully manage price fluctuations or that future price fluctuations or shortages will not have a material adverse effect on the Company.

* Acquisitions, strategic alliances, divestitures, and other unusual events resulting from portfolio management actions and other evolving business strategies, and possible organizational restructuring could affect future results. The Company monitors its business portfolio and organizational structure and has made and may continue to make acquisitions, strategic alliances, divestitures and changes to its organizational structure. With respect to acquisitions, future results will be affected by the Company's ability to integrate acquired businesses quickly and obtain the anticipated synergies.

* The Company's future results may be affected if the Company generates fewer productivity improvements than estimated. The Company utilizes various tools, such as Lean Six Sigma, and engages in ongoing global business transformation. Business transformation is defined as changes in processes and internal/external service delivery across 3M to move to more efficient business models to improve operational efficiency and productivity, while allowing 3M to serve customers with greater speed and efficiency. This is enabled by the ongoing multi-year phased implementation of an enterprise resource planning (ERP) system on a worldwide basis. There can be no assurance that all of the projected productivity improvements will be realized.

* The Company employs information technology systems to support its business, including ongoing phased implementation of an ERP system as part of business transformation on a worldwide basis over the next several years. Security breaches and other disruptions to the Company's information technology infrastructure could interfere with the Company's operations, compromise information belonging to the Company or its customers, suppliers, and employees, exposing the Company to liability which could adversely impact the Company's business and reputation. In the ordinary course of business, the Company relies on centralized and local information technology networks and systems, some of which are managed by third parties, to process, transmit and store electronic information, and to manage or support a variety of businesses. Additionally, the Company collects and stores certain data, including proprietary business information, and may have access to confidential or personal information in certain of our

businesses that is subject to privacy and security laws, regulations and customer-imposed controls. Despite our cybersecurity measures (including employee and third-party training, monitoring of networks and systems, patching, maintenance, and backup of systems and data), the Company's information technology networks and infrastructure may still be vulnerable to damage, disruptions or shutdowns due to attacks by hackers, breaches, employee error or malfeasance, power outages, computer viruses, ransomware, telecommunication or utility failures, systems failures, service or cloud provider breaches, natural disasters or other catastrophic events. It is possible for such vulnerabilities to remain undetected for an extended period, up to and including several years. While we have experienced, and expect to continue to experience, these types of vulnerabilities to the Company's information technology networks and infrastructure, none of them to date has had a material impact to the Company. There may be other challenges and risks as the Company upgrades and standardizes its ERP system on a worldwide basis. Any such events could result in legal claims or proceedings, liability or penalties under privacy laws, disruptions or shutdowns, and damage to the Company's reputation, which could adversely affect the Company's business. Although the Company maintains insurance coverage for various cybersecurity and business continuity risks, there can be no guarantee that all costs or losses incurred will be fully insured.

* The Company's defined benefit pension and postretirement plans are subject to financial market risks that could adversely impact our results. The performance of financial markets and discount rates impact the Company's funding obligations under its defined benefit plans. Significant changes in market interest rates, decreases in the fair value of plan assets and investment losses on plan

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assets, and relevant legislative or regulatory changes relating to defined benefit plan funding may increase the Company's funding obligations and adversely impact its results of operations and cash flows.

* The Company's future results may be affected by various legal and regulatory proceedings and legal compliance risks, including those involving product liability, antitrust, intellectual property, environmental, the U.S. Foreign Corrupt Practices Act and other anti-bribery, anti-corruption, or other matters. The outcome of these legal proceedings may differ from the Company's expectations because the outcomes of litigation, including regulatory matters, are often difficult to reliably predict. Various factors or developments can lead the Company to change current estimates of liabilities and related insurance receivables where applicable, or make such estimates for matters previously not susceptible of reasonable estimates, such as a significant judicial ruling or judgment, a significant settlement, significant regulatory developments or changes in applicable law. A future adverse ruling, settlement or unfavorable development could result in future charges that could have a material adverse effect on the Company's results of operations or cash flows in any particular period. For a more detailed discussion of the legal proceedings involving the Company and the associated accounting estimates, see the discussion in Note 16 "Commitments and Contingencies" within the Notes to Consolidated Financial Statements.

Item 1B. Unresolved Staff Comments.

None.

Item 2. Properties.

In the U.S., 3M's general offices, corporate research laboratories, and certain division laboratories are located in St. Paul, Minnesota. The Company operates 75 manufacturing facilities in 29 states. Internationally, the Company operates 107 manufacturing and converting facilities in 36 countries.

3M owns the majority of its physical properties. 3M's physical facilities are highly suitable for the purposes for which they were designed. Because 3M is a global enterprise characterized by substantial intersegment cooperation, properties are often used by multiple business segments.

Item 3. Legal Proceedings.

Discussion of legal matters is incorporated by reference from Part II, Item 8, Note 16, “Commitments and Contingencies,” of this document, and should be considered an integral part of Part I, Item 3, “Legal Proceedings.”

Item 4. Mine Safety Disclosures.

Pursuant to Section 1503 of the Dodd-Frank Wall Street Reform and Consumer Protection Act (the “Act”), the Company is required to disclose, in connection with the mines it operates, information concerning mine safety violations or other regulatory matters in its periodic reports filed with the SEC. For the year 2018, the information concerning mine safety violations or other regulatory matters required by Section 1503(a) of the Act is included in Exhibit 95 to this annual report.

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PART II

Item 5. Market for Registrant’s Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities.

Equity compensation plans’ information is incorporated by reference from Part III, Item 12, “Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters,” of this document, and should be considered an integral part of Item 5. At January 31, 2019, there were 76,596 shareholders of record. 3M’s stock ticker symbol is MMM and is listed on the New York Stock Exchange, Inc. (NYSE), the Chicago Stock Exchange, Inc., and the SWX Swiss Exchange. Cash dividends declared and paid totaled \$1.36 and \$1.175 per share for each quarter in 2018 and 2017, respectively.

Issuer Purchases of Equity Securities

Repurchases of 3M common stock are made to support the Company’s stock-based employee compensation plans and for other corporate purposes. In February 2016, 3M’s Board of Directors authorized the repurchase of up to \$10 billion of 3M’s outstanding common stock, with no pre-established end date. In November 2018, 3M’s Board of Directors replaced the Company’s February 2016 repurchase program with a new repurchase program. This new program authorizes the repurchase of up to \$10 billion of 3M’s outstanding common stock, with no pre-established end date.

Issuer Purchases of Equity Securities

(registered pursuant to Section 12 of the Exchange Act)

Period	Total Number of Shares Purchased (1)	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs (2)	Maximum Approximate Dollar Value of Shares that May Yet Be Purchased under the Plans or Programs (Millions)
January 1-31, 2018	714,575	\$ 245.98	714,138	\$ 4,894
February 1-28, 2018	1,420,634	\$ 233.78	1,420,599	\$ 4,562
March 1-31, 2018	1,791,496	\$ 228.82	1,791,496	\$ 4,152
Total January 1-March 31, 2018	3,926,705	\$ 233.74	3,926,233	\$ 4,152

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April 1-30, 2018	2,135,968	\$ 213.63	2,135,968	\$ 3,696
May 1-31, 2018	3,283,170	\$ 201.64	3,282,339	\$ 3,034
June 1-30, 2018	2,358,619	\$ 200.31	2,358,619	\$ 2,562
Total April 1-June 30, 2018	7,777,757	\$ 204.53	7,776,926	\$ 2,562
July 1-31, 2018	1,851,663	\$ 201.17	1,851,663	\$ 2,189
August 1-31, 2018	1,813,661	\$ 205.37	1,813,661	\$ 1,817
September 1-30, 2018	1,476,649	\$ 211.62	1,476,649	\$ 1,504
Total July 1-September 30, 2018	5,141,973	\$ 205.65	5,141,973	\$ 1,504
October 1-31, 2018	2,346,310	\$ 198.16	2,346,310	\$ 1,039
November 1-30, 2018	1,847,238	\$ 199.51	1,847,238	\$ 9,828
December 1-31, 2018	2,249,175	\$ 192.10	2,249,175	\$ 9,396
Total October 1-December 31, 2018	6,442,723	\$ 196.43	6,442,723	\$ 9,396
Total January 1-December 31, 2018	23,289,158	\$ 207.46	23,287,855	\$ 9,396

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- (1) The total number of shares purchased includes: (i) shares purchased under the Board's authorizations described above, and (ii) shares purchased in connection with the exercise of stock options.
- (2) The total number of shares purchased as part of publicly announced plans or programs includes shares purchased under the Board's authorizations described above.

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Item 6. Selected Financial Data.

(Dollars in millions, except per share amounts)	2018*	2017	2016	2015	2014
Years ended December 31:					
Net sales	\$ 32,765	\$ 31,657	\$ 30,109	\$ 30,274	\$ 31,821
Net income attributable to 3M	5,349	4,858	5,050	4,833	4,956
Per share of 3M common stock:					
Net income attributable to 3M — basic	9.09	8.13	8.35	7.72	7.63
Net income attributable to 3M — diluted	8.89	7.93	8.16	7.58	7.49
Cash dividends declared per 3M common share	5.44	4.70	4.44	3.075	3.59
Cash dividends paid per 3M common share	5.44	4.70	4.44	4.10	3.42
At December 31:					
Total assets	\$ 36,500	\$ 37,987	\$ 32,906	\$ 32,883	\$ 31,374
Long-term debt (excluding portion due within one year) and long-term capital lease obligations	13,486	12,156	10,723	8,799	6,764

* The Company adopted ASU No. 2014-09 and related standards (collectively, Accounting Standards Codification (ASC) 606, Revenue from Contracts with Customers), as described in Note 1, on January 1, 2018 using the modified retrospective method of adoption, the impact of which was not material to the Company's consolidated results of operations and financial condition. Prior periods have not been restated.

Cash dividends declared and paid totaled \$1.36 and \$1.175 per share for each quarter in 2018 and 2017, respectively. 3M typically declares and pays dividends in the same quarter. In December 2014, 3M declared dividends that were paid in the following first quarter.

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

Management’s Discussion and Analysis of Financial Condition and Results of Operations (MD&A) is designed to provide a reader of 3M’s financial statements with a narrative from the perspective of management. 3M’s MD&A is presented in eight sections:

- Overview
- Results of Operations
- Performance by Business Segment
- Performance by Geographic Area
- Critical Accounting Estimates
- New Accounting Pronouncements
- Financial Condition and Liquidity
- Financial Instruments

Forward-looking statements in Item 7 may involve risks and uncertainties that could cause results to differ materially from those projected (refer to the section entitled “Cautionary Note Concerning Factors That May Affect Future Results” in Item 1 and the risk factors provided in Item 1A for discussion of these risks and uncertainties).

OVERVIEW

3M is a diversified global manufacturer, technology innovator and marketer of a wide variety of products and services. As described in Note 18, effective in the first quarter of 2018, 3M improved the alignment of its businesses around markets and customers. Segment information presented herein reflects the impact of these changes for all periods presented. 3M manages its operations in five operating business segments: Industrial; Safety and Graphics; Health Care; Electronics and Energy; and Consumer. From a geographic perspective, any references to EMEA refer to Europe, Middle East and Africa on a combined basis.

Earnings per share (EPS) attributable to 3M common shareholders – diluted:

The following table provides the increase (decrease) in diluted earnings per share for the fourth quarter and year 2018 compared to the same period last year, in addition to 2017 compared to 2016.

(Earnings per diluted share)	Three months ended December 31, 2018	Year ended December 31,	
		2018	2017
Same period last year	\$ 0.85	\$ 7.93	\$ 8.16
2017 Enactment of TCJA Impact	1.25	1.24	—
Same period last year, excluding 2017 Tax Cuts and Jobs Act (TCJA)	\$ 2.10	\$ 9.17	\$ 8.16
Increase/(decrease) in earnings per share - diluted, due to:			
2017 divestiture of identity management business	—	(0.54)	0.54
Organic growth/productivity and other	0.18	0.92	0.47
Acquisitions/other divestiture gains	(0.15)	(0.15)	—
Foreign exchange impacts	(0.03)	(0.05)	(0.13)
Legal-related charges	—	(0.04)	—
Legal - respirator mask actuarial reserve	—	—	(0.07)
Other expense	0.06	(0.14)	(0.22)
Income tax rate, excluding Tax Cuts and Jobs Act (TCJA) measurement period adjustment	0.05	0.61	0.34
Shares of common stock outstanding	0.08	0.18	0.08
2018 divestiture of Communication Markets Division, net of related restructuring actions	0.02	0.50	—
Current period, excluding MN Natural Resource Damages (NRD) resolution and TCJA measurement period adjustment	\$ 2.31	\$ 10.46	\$ 9.17
TCJA measurement period adjustment	0.07	(0.29)	(1.24)
MN NRD resolution	(0.11)	(1.28)	—
Current period	\$ 2.27	\$ 8.89	\$ 7.93

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Year 2018 and fourth quarter EPS:

For the fourth quarter of 2018, net income attributable to 3M was \$1.347 billion, or \$2.27 per diluted share, compared to \$523 million, or \$0.85 per diluted share, in the fourth quarter of 2017, an increase of 167 percent on a per diluted share basis. Adjusting for the impacts related to the resolution of the Minnesota natural resource damages (NRD) matter and accounting for the enactment of the Tax Cuts and Jobs Act (TCJA), as further described in the Operating income, operating income margin, income before taxes, net income, earnings per share, and effective tax rate adjusted for impacts of the Minnesota NRD resolution and the measurement period adjustment to the impact of the enactment of the Tax Cuts and Jobs Act (TCJA) - (non-GAAP measures) section below, net income attributable to 3M was \$1.366 billion, or \$2.31 diluted share for the fourth quarter of 2018, compared to \$1.285 billion, or \$2.10 per diluted share for the fourth quarter of 2017, an increase of 10.0 percent on a per diluted share basis.

For full year 2018, net income attributable to 3M was \$5.349 billion, or \$8.89 per diluted share basis, compared to \$4.858 billion, or \$7.93 per diluted share, for full year 2017, an increase of 12.1 percent on a per diluted share. Adjusting for the NRD matter and the TCJA as described further below, net income was \$6.295 billion, or \$10.46 per diluted share for the full year 2018, compared to \$5.620 billion, or \$9.17 per diluted share for full year 2017, an increase of 14.1 percent on a per diluted share basis.

These non-GAAP measures are further described and reconciled to the most directly comparable GAAP financial measures in the section that follows.

Additional discussion related to the components of the year-on-year change in earnings per diluted share follows:

2017 divestiture of identity management business:

- In May 2017, 3M completed the related sale or transfer of control, as applicable of its identity management business and reflected a pre-tax gain of \$457 million, which was reported within the Company's Safety and Graphics business. The earnings per share impact reflects the specific income tax rate used for this divestiture.

Organic growth/productivity and other:

- Fourth quarter and full year 2018 year-on-year benefits include higher organic local-currency sales, selling price increases, and business transformation, which is having a positive impact on 3M's productivity efforts. Higher raw material costs partially offset these year-on-year benefits.
- Lower year-on-year restructuring (other than activity related to the Communication Markets Division divestiture), portfolio and footprint actions increased pre-tax earnings by approximately \$58 million and \$307 million in the

fourth quarter and full year 2018, respectively. These charges included \$24 million related to exit activities and \$80 million in asset charges, accelerated depreciation and other costs taken in the first quarter of 2017, \$99 million in restructuring actions and \$51 million in asset charges, accelerated depreciation and other costs taken in the second quarter of 2017, \$35 million in asset charges, accelerated depreciation and other costs taken in the third quarter of 2017, in addition to \$23 million related to exit activities and \$41 million in asset charges, accelerated depreciation and other costs taken in the fourth quarter of 2017.

Acquisitions/other divestiture gains:

- In aggregate, acquisitions, year-on-year divestitures gains (other than the sale of the Communication Markets Division and identity management business), and lost operating income from divested businesses (other than lost income related to the divestiture of the Communication Markets Division) decreased earnings per diluted share by 12 cents year-on-year for the fourth quarter of 2018 and decreased earnings per diluted share by 10 cents for full year 2018.
- Remaining stranded costs and lost operating income related to the divestiture of the Communication Markets Division decreased earnings per diluted share by 3 cents and 5 cents year-on-year for the fourth quarter of 2018 and full year 2018, respectively.

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Foreign exchange impacts:

- Foreign currency impacts (net of hedging) decreased pre-tax earnings year-on-year by approximately \$27 million and approximately \$42 million, or the equivalent of 3 cents and 5 cents per diluted share, for the fourth quarter and full year 2018, respectively, excluding the impact of foreign currency changes on tax rates.

Legal-related charges

- In the second quarter of 2018, 3M reached agreements in principle on a number of respiratory mask/asbestos claims and an oral care product liability matter, the implications of which resulted in an increase in certain legal accruals. Refer to Note 16 for further details.

Other expense:

- Fourth quarter 2018's interest expense (net of interest income) decreased \$72 million, primarily due to the \$96 million early extinguishment of debt charge in the fourth quarter 2017 that was not repeated in 2018. Full year 2018's interest expense (net of interest income) increased \$8 million year-on-year as a result of higher U.S. average debt balances and higher borrowing costs.
- On a combined basis, higher defined benefit pension and postretirement service cost expense and defined contribution expense, in addition to lower income related to non-service cost components of pension and postretirement expense, increased expense year-on-year.

Income tax rate, excluding Tax Cuts and Jobs Act (TCJA) measurement period adjustment:

- The effective tax rate for the fourth quarter of 2018 was 21.6 percent, a decrease of 47 percentage points versus 2017. The effective tax rate for full year 2018 was 23.4 percent, a decrease of 12.1 percentage points versus 2017.
- The effect of income taxes on items that had specific tax rates are reflected within their respective diluted earnings per share impacts in the table above for both the fourth quarter and full year 2018. Additionally, as discussed in the section below titled Operating income, operating income margin, income before taxes, net income, earnings per share, and effective tax rate adjusted for impacts of the Minnesota NRD resolution and the measurement period adjustment to the impact of the enactment of the Tax Cuts and Jobs Act (TCJA) - (non-GAAP measures), excluding the Minnesota NRD Resolution and measurement period adjustment related to TCJA, the effective income tax rate was 20.5 percent and 20.1 percent in the fourth quarter 2018 and full year 2018, respectively. Excluding the \$762 million impact related to the enactment of the TCJA in the fourth quarter of 2017, the effective income tax rate for the fourth quarter 2017 and full year 2017 was 23.0 percent and 25.4 percent, respectively.
- Factors that decreased the effective tax rate for the fourth quarter and full year 2018 primarily related to the favorable aspects of the TCJA such as the decrease in the U.S. income tax rate and foreign-derived intangible income (FDII), reduced transitional impact of TCJA related to transition tax and remeasurement of deferred tax assets/liabilities (further discussed below), and increased benefits from the R&D tax credit. These decreases were partially offset by the elimination of the domestic manufacturing deduction, the global intangible low-taxed income (GILTI) provision, and lower excess tax benefits related to employee share-based payments. Refer to Note 10 for additional details.

Shares of common stock outstanding:

- Lower shares outstanding increased earnings per share by 8 cents and 18 cents per diluted share for the fourth quarter and full year 2018, respectively. Weighted-average diluted shares outstanding in the fourth quarter and full year 2018 declined 3.4 percent and 1.8 percent year-on-year, respectively, which benefited earnings per share. The decrease in the outstanding weighted-average diluted shares relates to the Company's purchase of \$1.3 billion and \$4.9 billion of its own stock in the fourth quarter and full year 2018, respectively.

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2018 divestiture of Communication Markets Division, net of related restructuring actions and exit activities:

- In June 2018, 3M completed the sale of substantially all of its Communication Markets Division and reflected a pre-tax gain of \$494 million as a result of this divestiture. Additionally in December 2018, 3M completed the sale of the remaining telecommunications system integration services portion of the business based in Germany and reflected a pre-tax gain of \$15 million as a result of this divestiture. Both divestitures were reported within the Company's Electronics and Energy business. During the second quarter and fourth quarter of 2018, management approved and committed to undertake certain restructuring actions related to addressing corporate functional costs following the Communication Markets Division divestiture. These actions affected approximately 1,200 positions worldwide and resulted in a second quarter 2018 pre-tax charge of \$105 million and a fourth quarter 2018 pre-tax charge of \$22 million, net of adjustments for reductions in cost estimates. The aggregate net impact of the gain on sale and related restructuring actions increased earnings per diluted share by 2 cents and 50 cents per diluted share for the fourth quarter and full year 2018, respectively, and reflects the specific income tax rate associated with these items.

Year 2017 EPS:

2017 divestiture of identity management business:

- In May 2017, 3M completed the related sale or transfer of control, as applicable of its identity management business and reflected a pre-tax gain of \$457 million. The earnings per share impact reflects the specific income tax rate used for this divestiture.

Organic growth/productivity and other:

- Organic growth/productivity in 2017 included benefits from higher organic local-currency sales, raw material cost decreases from sourcing cost reduction projects, and business transformation, which had a positive impact on 3M's productivity efforts. These benefits were partially offset by higher defined benefit pension service cost expenses. During 2017, organic growth and productivity were the primary drivers for the year-on-year benefit.
- Year-on-year incremental strategic investments decreased pre-tax earnings by approximately \$413 million in 2017. These incremental strategic investments are comprised of 3M's investments in growth initiatives and optimization of its portfolio and supply chain footprint.

Acquisitions/other divestiture gains:

- Acquisitions and divestitures (other than the sale of the identity management business) had a neutral impact to earnings per diluted share for full year 2017. Acquisition impacts, which are measured for the first twelve months post-transaction, related primarily to the acquisition of Scott Safety (fourth quarter 2017). The net impact related to Scott Safety included income from operations, more than offset by the transaction and integration costs of the acquisition. Interest expense related to financing costs of Scott Safety are also included. The net impact related to Scott Safety was equivalent to a year-on-year decrease of 7 cents per diluted share. Full year 2017 had year-on-year operating income impacts from the following divestitures: Polyfoam and the remaining portion of the library system

business (both in first quarter 2016), protective films business and cathode battery technology out-license business (both in fourth quarter 2016), prescription safety eyewear business (January 2017), tolling and automated license/number plate recognition business (second quarter of 2017), and electronic monitoring business (fourth quarter 2017). The incremental year-on-year pre-tax gain on divestiture impact, net of lost operating loss/(income) during 2017 was an increase of approximately 7 cents per diluted share.

Foreign exchange impacts:

- Foreign currency impacts (net of hedging) decreased pre-tax earnings by approximately \$111 million year-on-year in 2017, excluding the impact of foreign currency changes on tax rates. This is equivalent to a year-on-year decrease of 13 cents per diluted share for the full year 2017.

Legal – respirator mask actuarial reserve

- In the fourth quarter of 2017, as a result of the Company's regular review of its respirator mask/asbestos liabilities, the Company increased its accruals. Refer to Note 16 for more details.

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Other expense:

- Other expense decreased earnings per share for 2017, largely due to the loss on extinguishment of debt, higher U.S. average balances, and higher interest rates. The early extinguishment of debt resulted in a charge of \$96 million, which contributed to a year-on-year decrease of 11 cents per diluted share. Additionally, the portion of interest expense related to the financing costs of acquiring Scott Safety, which was equivalent to a year-on-year decrease of 2 cents per diluted share, is included in the acquisitions and divestitures impact described above.
- On a combined basis, higher defined benefit pension and postretirement service cost expense and defined contribution expense, in addition to lower income related to non-service cost components of pension and postretirement expense, increased expense year-on-year

Income tax rate, excluding Tax Cuts and Jobs Act (TCJA) measurement period adjustment:

- The effect of income taxes on items that had specific tax rates are reflected within their respective diluted earnings per share impacts in the table above for full year 2017. As discussed in the section below, the Company recorded a net tax expense of \$762 million related to the enactment of the TCJA, which was equivalent to a decrease of \$1.24 per diluted share in 2017. The effective tax rate was 35.5 percent, an increase of 7.2 percentage points versus 2016. Excluding the impact of TCJA, the effective income tax rate was 25.4 percent in the full year 2017, a decrease of 2.9 percentage points versus 2016. Excluding the impact of TCJA, the fourth quarter and full year 2017 change in tax rate was driven largely by increasing benefits from our supply chain centers of expertise, favorable geographic mix and other items, as referenced in Note 10.

Shares of common stock outstanding:

- Weighted-average diluted shares outstanding in 2017 declined 1.0 percent year-on-year, which benefited earnings per share. The Company purchased \$2.1 billion of its own stock in 2017.

Operating income, operating income margin, income before taxes, net income, earnings per share, and effective tax rate adjusted for impacts of the Minnesota NRD resolution and the measurement period adjustment to the impact of the enactment of the Tax Cuts and Jobs Act (TCJA) - (non-GAAP measures):

As further discussed in Note 16, in February 2018, 3M reached an agreement with the State of Minnesota that resolved the previously disclosed Natural Resource Damages (NRD) lawsuit filed by the State against the Company related to certain PFCs present in the environment. Under the terms of the settlement, 3M agreed to provide an \$850 million grant to the State for a special “3M Water Quality and Sustainability Fund.” This Fund will enable projects that support water sustainability in the Twin Cities East Metro region, such as continued delivery of water to residents and enhancing groundwater recharge to support sustainable growth. The projects will also result in habitat and recreation improvements, such as fishing piers, trails, and open space preservation. 3M recorded a charge of \$897 million (\$710 million after-tax), inclusive of legal fees and other related obligations, in the first quarter of 2018 associated with the resolution of this matter. In the fourth quarter of 2018, 3M recorded a related \$60 million tax expense resulting from the Company’s ongoing IRS examination under the Compliance Assurance Process (CAP) and new guidance released under the Tax Cuts and Jobs Act. Also during the first quarter of 2018, 3M recorded a tax expense of \$217 million related to a measurement period adjustment to the provisional amounts recorded in December 2017 from the enactment of the Tax Cuts and Jobs Act (TCJA). In the fourth quarter 2018, 3M finalized the tax impact related to

TCJA with a reversal of previously recorded tax expense in the amount of \$41 million.

During the fourth quarter of 2017, 3M recorded a net tax expense of \$762 million related to the enactment of the Tax Cuts and Jobs Act (TCJA). The expense was primarily related to the TCJA's transition tax on previously unremitted earnings of non-U.S. subsidiaries and was net of remeasurement of 3M's deferred tax assets and liabilities considering the TCJA's newly enacted tax rates and certain other impacts. This provisional amount was subject to adjustment during the measurement period of up to one year following the December 2017 enactment of the TCJA, as provided by SEC guidance.

In addition to providing financial results in accordance with U.S. GAAP, the Company also provides non-GAAP measures that adjust for the impacts of the NRD resolution and enactment/measurement period adjustments to the impact of the enactment of the TCJA. These items represent significant charges/benefits that impacted the Company's financial results. Operating income, operating income margin, effective tax rate, net income, and earnings per share are all measures for which 3M provides the GAAP measure and an adjusted measure. The adjusted measures are not in accordance with, nor are they a substitute for, GAAP measures. The Company considers these non-GAAP measures in evaluating and managing the Company's operations. The Company believes that discussion of

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results adjusted for these items is meaningful to investors as it provides a useful analysis of ongoing underlying operating trends. The determination of these items may not be comparable to similarly titled measures used by other companies.

Adjusted
income,
operating
income
margin,
earnings per
share, &
effective tax
rate
(non-GAAP
measures)
(Dollars in
millions,
except per
share
amounts)

	Net Sales	Operating Income	Operating Income Margin	Income Before Taxes	Provision for Income Taxes	Effective Tax Rate	Net Income Attributable to 3M	Earnings Per Diluted Share	Earnings per diluted share percent change
Q4 2017 GAAP	\$ 7,990	\$ 1,789	22.4	% \$ 1,672	\$ 1,147	68.6	% \$ 523	\$ 0.85	
Adjustment for TCJA	—	—	—	—	(762)	—	762	1.25	
Q4 2017 Adjusted Non-GAAP Measure	\$ 7,990	\$ 1,789	22.4	% \$ 1,672	\$ 385	23.0	% \$ 1,285	\$ 2.10	
Q4 2018 GAAP	\$ 7,945	\$ 1,783	22.4	% \$ 1,720	\$ 371	21.6	% \$ 1,347	\$ 2.27	167.1
Adjustment for measurement period accounting of TCJA	—	—	—	—	41		(41)	(0.07)	
Adjustment for MN NRD Resolution	—	—	—	—	(60)		60	0.11	
Q4 2018 Adjusted Non-GAAP Measure	\$ 7,945	\$ 1,783	22.4	% \$ 1,720	\$ 352	20.5	% \$ 1,366	\$ 2.31	10.0

Adjusted
income,
operating
income
margin,
earnings per
share, &
effective tax
rate

(non-GAAP
measures)

(Dollars in
millions,
except per
share
amounts)

Full Year

2017 GAAP
Adjustment
for TCJA

Full Year
2017

Adjusted
Non-GAAP
Measure

Full Year
2018 GAAP
Adjustment
for
measurement
period
accounting of
TCJA

Adjustment
for MN NRD
Resolution

Full Year
2018

Adjusted
Non-GAAP
Measure

	Net Sales	Operating Income	Operating Income Margin		Income Before Taxes	Provision for Income Taxes	Effective Tax Rate		Net Income Attributable to 3M	Earnings Per Diluted Share	Earnings per diluted share per cent
Full Year 2017 GAAP	\$ 31,657	\$ 7,692	24.3	%	\$ 7,548	\$ 2,679	35.5	%	\$ 4,858	\$ 7.93	
Adjustment for TCJA	—	—	—		—	(762)	—		762	1.24	
Full Year 2017 Adjusted Non-GAAP Measure	\$ 31,657	\$ 7,692	24.3	%	\$ 7,548	\$ 1,917	25.4	%	\$ 5,620	\$ 9.17	
Full Year 2018 GAAP	\$ 32,765	\$ 7,207	22.0	%	\$ 7,000	\$ 1,637	23.4	%	\$ 5,349	\$ 8.89	12.1
Adjustment for measurement period accounting of TCJA	—	—	—		—	(176)			176	0.29	
Adjustment for MN NRD Resolution	—	897	—		897	127			770	1.28	
Full Year 2018 Adjusted Non-GAAP Measure	\$ 32,765	\$ 8,104	24.7	%	\$ 7,897	\$ 1,588	20.1	%	\$ 6,295	\$ 10.46	14.1

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Fourth-quarter 2018 sales and operating income by business segment:

The following tables contain sales and operating income results by business segment for the fourth quarters of 2018 and 2017, followed by additional discussion of business segment results.

(Dollars in millions)	Three months ended December 31, 2018			Three months ended December 31, 2017			2018 vs 2017 % change	
	Net Sales	% of Total	Oper. Income	Net Sales	% of Total	Oper. Income	Net Sales	Oper. Income
Business Segments								
Industrial	\$ 2,952	37.2 %	\$ 627	\$ 2,961	37.1 %	\$ 580	(0.3) %	8.1 %
Safety and Graphics	1,569	19.8	345	1,565	19.6	405	0.3	(14.8)
Health Care	1,520	19.1	458	1,484	18.6	460	2.4	(0.2)
Electronics and Energy	1,342	16.9	396	1,405	17.6	366	(4.5)	8.2
Consumer	1,211	15.2	257	1,210	15.1	272	0.1	(5.2)
Corporate and Unallocated	3	0.0	(136)	(3)	—	(139)	—	—
Elimination of Dual Credit	(652)	(8.2)	(164)	(632)	(8.0)	(155)	—	—
Total Company	\$ 7,945	100.0 %	\$ 1,783	\$ 7,990	100.0 %	\$ 1,789	(0.6) %	(0.3) %

Worldwide Sales Change By Business Segment	Three months ended December 31, 2018				Total sales change
	Organic local- currency sales	Divestitures	Translation		
Industrial	2.5 %	(0.1) %	(2.7) %	(0.3) %	
Safety and Graphics	3.3	(0.2)	(2.8)	0.3	
Health Care	4.8	—	(2.4)	2.4	
Electronics and Energy	4.1	(7.1)	(1.5)	(4.5)	
Consumer	1.9	—	(1.8)	0.1	
Total Company	3.0 %	(1.3) %	(2.3) %	(0.6) %	

From a business segment perspective, 3M achieved total sales growth in three business segments and organic local-currency sales growth (which includes organic volume and selling price impacts) in all five business segments. Operating income margins were 22.4 percent, with all five business segments above 21 percent.

• In Industrial, total sales decreased 0.3 percent, while organic local currency sales increased 2.5 percent, with organic sales growth in advanced materials, industrial adhesives and tapes, separation and purification, abrasives, and

automotive aftermarket. Operating income margins were 21.2 percent, up 1.6 percentage points, with 1.2 percentage points of this increase driven by benefits from expenses related to portfolio and footprint actions taken in the fourth quarter of 2017 that were not repeated in the fourth quarter of 2018.

- In Safety and Graphics, total sales increased 0.3 percent, or 3.3 percent on an organic local currency basis. Organic sales increased in personal safety and commercial solutions while organic sales declined in transportation safety and roofing granules. Operating income margins were 22.0 percent, down 3.9 percentage points, with 2.8 percentage points of this decrease driven by year-on-year impact of 2017 divestiture gains, partially offset by acquisitions and portfolio and footprint actions that were not repeated in 2018.
- In Health Care, total sales increased 2.4 percent, or 4.8 percent on an organic local currency sales basis. Organic sales were led by food safety, health information systems, medical solutions, and oral care. Organic sales declined in drug delivery systems. Operating income margins were 30.2 percent, down 0.8 percentage points.
- In Electronics and Energy, total sales decreased 4.5 percent, while organic local currency sales increased 4.1 percent. Electronics-related total sales increased 2.1 percent, or 3.2 percent on an organic local currency basis, with increases in both electronics materials solutions and display materials and systems. Energy-related total sales decreased 22.7 percent, while organic sales increased 4.5 percent, driven by growth in electrical markets. Operating income margins were 29.5 percent, up 3.5 percentage points, with 1.9 percentage points of this increase related to the impact of the divestiture of the Communication Markets Division.
- In Consumer, total sales increased 0.1 percent, or 1.9 percent on an organic local currency basis. Organic sales grew in home improvement and stationery and office, while home care, and consumer health care declined. Operating income margins

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were 21.3 percent, down 1.1 percentage points, which included an increase of 0.5 percentage points related to 2017 portfolio and footprint actions that were not repeated in 2018.

Year 2018 sales and operating income by business segment:

The following tables contain sales and operating income results by business segment for the years ended December 31, 2018 and 2017. Refer to the section entitled “Performance by Business Segment” later in MD&A for additional discussion concerning both 2018 versus 2017 results and 2017 versus 2016 results, including Corporate and Unallocated. Refer to Note 18 for additional information on business segments, including Elimination of Dual Credit.

(Dollars in millions)	2018			2017			2018 vs 2017			
	Net Sales	% of Total	Oper. Income	Net Sales	% of Total	Oper. Income	Net Sales	Oper. Income	% change	
Business Segments										
Industrial	\$ 12,267	37.4 %	\$ 2,737	\$ 11,866	37.5 %	\$ 2,490	3.4 %	9.9 %		
Safety and Graphics	6,827	20.8	1,720	6,235	19.7	2,066	9.5	(16.7)		
Health Care	6,021	18.4	1,799	5,853	18.5	1,764	2.9	2.0		
Electronics and Energy	5,472	16.7	2,055	5,501	17.4	1,377	(0.5)	49.3		
Consumer	4,796	14.6	1,027	4,731	14.9	1,004	1.4	2.4		
Corporate and Unallocated	50	0.2	(1,465)	3	—	(395)	—	—		
Elimination of Dual Credit	(2,668)	(8.1)	(666)	(2,532)	(8.0)	(614)	—	—		
Total Company	\$ 32,765	100.0 %	\$ 7,207	\$ 31,657	100.0 %	\$ 7,692	3.5 %	(6.3) %		

Worldwide Sales Change By Business Segment	Year ended December 31, 2018					Total sales change
	Organic local-currency sales	Acquisitions	Divestitures	Translation		
Industrial	3.2 %	—	% (0.1)	% 0.3	% 3.4	%
Safety and Graphics	5.1	7.3	(3.1)	0.2	9.5	
Health Care	2.6	—	—	0.3	2.9	
Electronics and Energy	3.3	—	(4.2)	0.4	(0.5)	
Consumer	1.5	—	—	(0.1)	1.4	
Total Company	3.2 %	1.4 %	% (1.3)	% 0.2	% 3.5	%

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Fourth-quarter 2018 sales results by geographic area/business segment:

Percent change information compares the fourth quarter 2018 with the same period last year, unless otherwise indicated. From a geographic perspective, any references to EMEA refer to Europe, Middle East and Africa on a combined basis.

	Three months ended December 31, 2018									
	United States	Asia Pacific	Europe, Middle East & Africa	Latin America/Canada	Other Unallocated	Worldwide				
Net sales (millions)	\$ 3,183	\$ 2,453	\$ 1,577	\$ 735	\$ (3)	\$ 7,945				
% of worldwide sales	40.1	% 30.9	% 19.8	% 9.2	% —	100.0				
Components of net sales change:										
Volume — organic	3.1	% 1.4	% (0.6)	% 2.2	% —	1.6				
Price	1.3	0.6	1.9	2.8	—	1.4				
Organic local-currency sales	4.4	2.0	1.3	5.0	—	3.0				
Divestitures	(1.1)	(0.4)	(2.9)	(1.4)	—	(1.3)				
Translation	—	(2.4)	(4.8)	(6.4)	—	(2.3)				
Total sales change	3.3	% (0.8)	% (6.4)	% (2.8)	% —	(0.6)				
Total sales change:										
Industrial	4.1	% (2.0)	% (3.1)	% (4.8)	% —	(0.3)				
Safety and Graphics	4.6	% (5.8)	% (0.9)	% 1.4	% —	0.3				
Health Care	2.8	% 6.9	% —	% (1.1)	% —	2.4				
Electronics and Energy	(7.3)	% 2.3	% (39.5)	% (13.8)	% —	(4.5)				
Consumer	5.3	% (7.4)	% (10.7)	% (2.0)	% —	0.1				
Organic local-currency sales change:										
Industrial	4.1	% 0.8	% 1.9	% 2.3	% —	2.5				
Safety and Graphics	5.0	% (2.5)	% 4.5	% 7.1	% —	3.3				
Health Care	2.8	% 10.6	% 4.6	% 5.5	% —	4.8				
Electronics and Energy	5.7	% 4.7	% (7.0)	% 7.2	% —	4.1				
Consumer	5.3	% (4.9)	% (6.9)	% 6.2	% —	1.9				

Additional information beyond what is included in the preceding table is as follows:

- In the Asia Pacific geographic area, China/Hong Kong total sales decreased 3 percent, driven by foreign currency translation impacts, while organic local-currency sales increased 1 percent. In Japan, total sales and organic local-currency sales were flat.

- In the EMEA geographic area, West Europe total sales decreased 7 percent due to the impact of lost sales from divested businesses in addition to foreign currency translation impacts, while organic local-currency sales were flat.
- In the Latin America/Canada geographic area, total sales increased 1 percent in Mexico, or 5 percent on an organic local currency basis. In Canada, total sales were flat, as organic local currency sales growth of 5 percent was offset by foreign currency translation impacts and lost sales from divested businesses. In Brazil, total sales decreased 11 percent, as organic local-currency sales growth of 5 percent was more than offset by foreign currency translation impacts.

Foreign currency translation decreased year-on-year sales by 2.3 percent, with the translation-related sales decreases in Latin America/Canada, EMEA and Asia Pacific. Selling prices increased by 1.4 percent year-on-year for the fourth quarter of 2018, with strong price growth in Latin America/Canada, EMEA and the U.S. In Asia Pacific, price increases were lower compared to other geographic areas, as strong volume growth in electronics had a negative impact on price.

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Year 2018 sales results by geographic area/business segment:

Percent change information compares the full year 2018 with the same period last year, unless otherwise indicated. Additional discussion of business segment results is provided in the Performance by Business Segment section.

	Year ended December 31, 2018											
	United States		Asia Pacific		Europe, Middle East & Africa		Latin America/Canada		Other Unallocated		Worldwide	
Net sales (millions)	\$ 12,840		\$ 10,254		\$ 6,654		\$ 3,024		\$ (7)		\$ 32,765	
% of worldwide sales	39.2	%	31.3	%	20.3	%	9.2	%	—		100.0	%
Components of net sales change:												
Volume — organic	2.1	%	3.5	%	—	%	2.1	%	—		2.1	%
Price	1.1		0.3		1.7		2.0		—		1.1	
Organic local-currency sales	3.2		3.8		1.7		4.1		—		3.2	
Acquisitions	1.9		0.5		2.2		0.7		—		1.4	
Divestitures	(1.3)		(0.6)		(2.5)		(1.4)		—		(1.3)	
Translation	—		0.8		1.7		(3.7)		—		0.2	
Total sales change	3.8	%	4.5	%	3.1	%	(0.3)	%	—		3.5	%
Total sales change:												
Industrial	3.6	%	4.4	%	4.2	%	(1.8)	%	—		3.4	%
Safety and Graphics	11.2	%	7.0	%	12.9	%	2.6	%	—		9.5	%
Health Care	(0.2)	%	10.2	%	3.8	%	2.0	%	—		2.9	%
Electronics and Energy	(3.2)	%	3.6	%	(19.0)	%	(9.8)	%	—		(0.5)	%
Consumer	3.7	%	(2.2)	%	(2.1)	%	(0.8)	%	—		1.4	%
Organic local-currency sales change:												
Industrial	3.6	%	3.3	%	2.5	%	3.1	%	—		3.2	%
Safety and Graphics	5.4	%	4.9	%	5.4	%	4.7	%	—		5.1	%
Health Care	(0.3)	%	9.5	%	1.9	%	5.6	%	—		2.6	%
Electronics and Energy	4.6	%	3.9	%	(3.4)	%	2.5	%	—		3.3	%
Consumer	3.7	%	(3.0)	%	(3.9)	%	4.5	%	—		1.5	%

Additional information beyond what is included in the preceding table is as follows:

- In the Asia Pacific geographic area, China/Hong Kong total sales increased 10 percent and organic local-currency sales increased 8 percent. In Japan, total sales and organic local currency sales decreased 2 percent.

In the EMEA geographic area, West Europe total sales grew 4 percent, driven by foreign currency translation impacts, while organic local-currency sales were flat.

- In the Latin America/Canada geographic area, total sales increased 1 percent in Mexico, as organic local-currency sales increases of 4 percent were partially offset by lost sales from divested businesses and foreign currency translation impacts. In Canada, total sales and organic local currency increased 5 percent. In Brazil, total sales decreased 8 percent, as organic local-currency sales growth of 5 percent was more than offset by foreign currency translation impacts.

Foreign currency translation increased year-on-year sales by 0.2 percent, with the translation-related sales increase in EMEA and Asia Pacific partially offset by the decreases in Latin America/Canada. Selling prices increased by 1.1 percent year-on-year for 2018, with strong price growth in Latin America/Canada, EMEA and the U.S. In Asia Pacific, price grew slightly, as strong volume growth in electronics had a negative impact on price.

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Year 2017 sales results by geographic area/business segment:

Percent change information compares the full year 2017 with the full year 2016, unless otherwise indicated. Additional discussion of business segment results is provided in the Performance by Business Segment section.

	Year ended December 31, 2017										
	United States	Asia Pacific	Europe, & Africa	Latin America/Canada	Other Unallocated	Worldwide					
Net sales (millions)	\$ 12,372	\$ 9,809	\$ 6,456	\$ 3,033	\$ (13)	\$ 31,657					
% of worldwide sales	39.1	% 31.0	% 20.4	% 9.5	% —	100.0	%				
Components of net sales change:											
Volume — organic	2.8	% 11.5	% 2.5	% 2.5	% —	5.2	%				
Price	(0.3)	(0.3)	0.7	1.1	—	—					
Organic local-currency sales	2.5	11.2	3.2	3.6	—	5.2					
Acquisitions	0.5	0.2	0.7	0.2	—	0.4					
Divestitures	(1.5)	(0.4)	(0.8)	(1.4)	—	(1.0)					
Translation	—	(0.1)	1.7	2.2	—	0.5					
Total sales change	1.5	% 10.9	% 4.8	% 4.6	% —	5.1	%				
Total sales change:											
Industrial	3.1	% 8.7	% 6.5	% 6.8	% —	5.8	%				
Safety and Graphics	1.3	% 10.0	% 8.3	% 0.6	% —	4.8	%				
Health Care	3.7	% 8.5	% 1.5	% 9.1	% —	4.4	%				
Electronics and Energy	1.2	% 17.2	% 2.2	% 3.1	% —	11.7	%				
Consumer	0.2	% 12.4	% 2.2	% 7.1	% —	3.3	%				
Organic local-currency sales change:											
Industrial	3.9	% 9.3	% 5.1	% 5.3	% —	5.8	%				
Safety and Graphics	4.2	% 11.6	% 6.5	% 2.5	% —	6.3	%				
Health Care	3.7	% 8.4	% 0.3	% 6.8	% —	3.9	%				
Electronics and Energy	2.2	% 17.3	% 0.1	% 1.4	% —	11.6	%				
Consumer	0.2	% 11.7	% 0.4	% 4.3	% —	2.7	%				

Additional information beyond what is included in the preceding table is as follows:

- In the Asia Pacific geographic area, where 3M's Electronics and Energy business is concentrated, sales benefited from strengthened demand across most electronics market segments, in addition to strong growth in 3M's Safety and Graphics business. Total sales in China/Hong Kong grew 16 percent and Japan grew 5 percent. On an organic

local-currency sales basis, China/Hong Kong grew 18 percent and Japan grew 8 percent.

- In the EMEA geographic area, West Europe total sales grew 5 percent, with organic local-currency sales growth of 3 percent along with an increase related to foreign currency translation.
- In the Latin America/Canada geographic area, total sales increased 4 percent in Mexico, as organic local-currency sales growth of 6 percent was partially offset by divestitures. In Canada, total sales increased 8 percent, with organic-local currency sales growth of 7 percent. In Brazil total sales growth of 9 percent was driven by foreign currency translation, while organic local-currency sales increased 2 percent.

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Foreign currency translation increased year-on-year sales by 0.5 percent, with the translation-related sales increase in Latin America/Canada and EMEA partially offset by the decreases in Asia Pacific. Selling prices were flat year-on-year for 2017. In Asia Pacific, strong volume growth in electronics had a negative impact on price. Latin America/Canada and EMEA had price growth, while the U.S. selling prices declined slightly.

Financial condition:

3M generated \$6.4 billion of operating cash flow in 2018, an increase of \$199 million when compared to 2017. This followed a decrease of \$422 million when comparing 2017 to 2016. Refer to the section entitled “Financial Condition and Liquidity” later in MD&A for a discussion of items impacting cash flows. In November 2018, 3M’s Board of Directors authorized the repurchase of up to \$10 billion of 3M’s outstanding common stock, which replaced the Company’s February 2016 repurchase program. This program has no pre-established end date. In 2018, the Company purchased \$4.9 billion of its own stock, compared to purchases of \$2.1 billion in 2017 and \$3.8 billion in 2016. The Company expects to purchase \$2.0 billion to \$4.0 billion of its own stock in 2019. In February 2019, 3M’s Board of Directors declared a first-quarter 2019 dividend of \$1.44 per share, an increase of 6 percent. This marked the 61st consecutive year of dividend increases for 3M. The Company has an AA- credit rating, with a stable outlook, from Standard & Poor’s and an A1 credit rating, with a stable outlook, from Moody’s Investors Service. The Company generates significant ongoing cash flow and has proven access to capital markets funding throughout business cycles.

Raw materials:

In 2018, the Company experienced raw material price inflation across most material markets worldwide. In response, the Company continued to deploy productivity projects to minimize the impact of raw material inflation and market supply challenges, including input management, reformulations, and multi-sourcing activities. These succeeded in partially offsetting the overall raw material headwinds experienced throughout the year. To date, the Company is receiving sufficient quantities of all raw materials to meet its reasonably foreseeable production requirements. It is difficult to predict future shortages of raw materials or the impact any such shortages would have. 3M has avoided disruption to its manufacturing operations through careful management of existing raw material inventories, strategic relationships with key suppliers, and development and qualification of additional supply sources. 3M manages spend category price risks through negotiated supply contracts, price protection agreements and commodity price swaps.

Pension and postretirement defined benefit/contribution plans:

On a worldwide basis, 3M’s pension and postretirement plans were 89 percent funded at year-end 2018. The primary U.S. qualified pension plan, which is approximately 67 percent of the worldwide pension obligation, was 96 percent funded and the international pension plans were 89 percent funded. The U.S. non-qualified pension plan is not funded due to tax considerations and other factors. Asset returns in 2018 for the primary U.S. qualified pension plan were

-0.5%, as 3M strategically invests in both growth assets and fixed income matching assets to manage its funded status. For the primary U.S. qualified pension plan, the expected long-term rate of return on an annualized basis for 2019 is 7.00%. The primary U.S. qualified pension plan year-end 2018 discount rate was 4.36%, up 0.68 percentage points from the year-end 2017 discount rate of 3.68%. The increase in U.S. discount rates resulted in a decrease valuation of the projected benefit obligation (PBO). The primary U.S. qualified pension plan's funded status increased 2 percentage points in 2018 due to the lower PBO resulting from the significant discount rate increase and a \$200 million contribution to the plan. Additional detail and discussion of international plan asset returns and discount rates is provided in Note 13 (Pension and Postretirement Benefit Plans).

3M expects to contribute approximately \$100 million to \$200 million of cash to its global defined benefit pension and postretirement plans in 2019. The Company does not have a required minimum cash pension contribution obligation for its U.S. plans in 2019. 3M expects global defined benefit pension and postretirement expense in 2019 (before settlements, curtailments, special termination benefits and other) to decrease by approximately \$130 million pre-tax when compared to 2018. Refer to "Critical Accounting Estimates" within MD&A and Note 13 (Pension and Postretirement Benefit Plans) for additional information concerning 3M's pension and post-retirement plans.

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2019 closed acquisitions:

In February 2019, 3M completed the acquisition of the technology business of M*Modal for cash of approximately \$0.7 billion, subject to closing and other adjustments, and assumption of approximately \$0.3 billion of M*Modal's debt. Based in Pittsburgh, Pennsylvania, M*Modal is a leading healthcare technology provider of cloud-based, conversational artificial intelligence-powered systems that help physicians efficiently capture and improve the patient narrative. The transaction will be reflected within the Company's Health Care business.

RESULTS OF OPERATIONS

Net Sales:

Refer to the preceding "Overview" section and the "Performance by Business Segment" section later in MD&A for additional discussion of sales change.

Operating Expenses:

				2018 versus		2017 versus	
(Percent of net sales)	2018	2017	2016	2017	2016		
Cost of sales	50.9 %	50.8 %	50.2 %	0.1 %	0.6 %		
Selling, general and administrative expenses	23.2	20.9	21.0	2.3	(0.1)		
Research, development and related expenses	5.6	5.9	5.9	(0.3)	—		
Gain on sale of businesses	(1.7)	(1.9)	(0.4)	0.2	(1.5)		
Operating income margin	22.0 %	24.3 %	23.3 %	(2.3) %	1.0 %		

Operating income margins decreased in 2018 versus 2017, driven primarily by the charge related to the Minnesota NRD resolution (as discussed in the Selling, General and Administrative Expenses section below). A number of factors impact the various income statement line items, such as raw material cost management, portfolio and footprint actions, divestitures, foreign currency, cost management, and pension and postretirement service cost effects.

Expanded discussion of each of the income statement line items follows in the various sections below. Pension and postretirement service cost expense is recorded in cost of sales; selling, general and administrative expenses (SG&A); and research, development and related expenses (R&D). In total, 3M's defined benefit pension and postretirement service cost expense increased \$21 million in 2018, compared to an increase of \$16 million in 2017. Refer to Note 13 (Pension and Postretirement Plans) for the service cost components of net periodic benefit costs.

The Company is investing in an initiative called business transformation, with these investments impacting cost of sales, SG&A, and R&D. Business transformation encompasses the ongoing multi-year phased implementation of an enterprise resource planning (ERP) system on a worldwide basis, as well as changes in processes and internal/external service delivery across 3M.

Cost of Sales:

Cost of sales includes manufacturing, engineering and freight costs.

Cost of sales, measured as a percent of sales, increased during 2018 primarily due to foreign currency effects (net of hedge losses). Additionally, cost of sales for full year 2018 were increased by the second quarter 2018 and fourth quarter 2018 Communication Markets Division related restructuring charges as discussed in Note 5. This increase was partially offset by 2017 portfolio and supply chain footprint optimization charges that did not repeat in 2018, and selling price increases. Selling prices increased net sales year-on-year by 1.1 percent for full year 2018. These were partially offset by raw material cost increases and higher defined benefit pension and postretirement service cost expense and defined contribution expense.

Cost of sales as a percent of sales increased during 2017 due to incremental strategic investments in productivity, portfolio actions and footprint optimization, foreign currency effects (net of hedge impacts) and higher defined benefit pension expense. This was partially offset by a year-on-year reduction in raw material input costs as a result of sourcing cost reduction projects. Selling prices were flat year-on-year for the full year 2017.

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Selling, General and Administrative Expenses:

SG&A in dollars increased 14.7 percent for full year 2018 when compared to the same period last year. The increase is primarily associated with the Communication Markets Division-related restructuring charges (as discussed in Note 5) and the charge related to the Minnesota NRD resolution (as discussed earlier in the “Operating income, operating income margin, income before taxes, net income, earnings per share, and effective tax rate adjusted for impacts of the Minnesota NRD resolution and the measurement period adjustment to the impact of the enactment of the Tax Cuts and Jobs Act (TCJA) - (non-GAAP measures)” section and further in Note 16). This increase was partially offset by 2017 portfolio and supply chain footprint optimization charges that did not repeat in 2018.

Research, Development and Related Expenses:

R&D in dollars decreased \$49 million for full year 2018 when compared to the same period last year. The decrease primarily relates to R&D no longer incurred related to the Communication Markets Division, which was primarily divested in the second quarter of 2018 and completed in the fourth quarter of 2018. 3M continued to invest in its key initiatives, including R&D aimed at disruptive innovation programs with the potential to create entirely new markets and disrupt existing markets. R&D, measured as a percent of sales, was 5.6 percent in 2018, compared to 5.9 percent in 2017 and 2016.

Gain on Sale of Businesses:

In the first quarter of 2018, 3M closed on the sale of certain personal safety product offerings primarily focused on noise, environmental, and heat stress monitoring. In addition, 3M divested a polymer additives compounding business, formerly part of the Company’s Industrial business, and reflected a gain on final closing adjustments from a prior divestiture which, in aggregate, were not material. These divestitures resulted in a gain on sale of businesses of \$24 million. 3M also divested an abrasives glass products business, formerly part of the Company’s Industrial business, which resulted in a gain on sale of less than \$15 million in the second quarter of 2018. Also, 3M reflected an immaterial gain from an earnout on a previous divestiture in the fourth quarter of 2018.

In June 2018, 3M completed the sale of substantially all of its Communication Markets Division to Corning Incorporated. This business, with annual sales of approximately \$400 million, consists of optical fiber and copper passive connectivity solutions for the telecommunications industry including 3M’s xDSL, FTTx, and structured cabling solutions and, in certain countries, telecommunications system integration services. This divestiture resulted in a gain on sale of \$494 million. In December 2018, the Company completed the sale of the remaining telecommunications system integration services portion of the business based in Germany, resulting in a pre-tax gain

of \$15 million. Both the June 2018 and December 2018 divestiture impacts were reported within the Company's Electronics and Energy business.

Refer to Note 3 for additional detail on these divestitures. 3M also divested certain businesses in 2017 and 2016, resulting in gains of \$586 million and \$111 million, respectively. Refer to Note 3 for additional detail on these divestitures.

Operating Income Margin:

3M uses operating income as one of its primary business segment performance measurement tools. Refer to the table below for a reconciliation of operating income margins for 2018 and 2017.

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(Percent of net sales)	Three months ended		Year ended		
	December 31, 2018		December 31,	December 31,	
			2018	2017	
Same period last year	22.4	%	24.3	%	23.3
Increase/(decrease) in operating income margin, due to:					
2017 divestiture of identity management business	—		(1.3)		1.3
Organic volume/productivity and other	1.0		0.9		(0.3)
Acquisitions/other divestiture gains	(1.2)		(0.1)		0.1
Selling price and raw material impact	0.2		0.1		0.4
Foreign exchange impacts	0.1		(0.2)		(0.5)
Legal-related charges	—		(0.2)		—
2018 divestiture of Communication Markets Division, net of related restructuring actions	(0.1)		1.2		—
Current period, excluding MN Natural Resource Damages (NRD) resolution	22.4	%	24.7	%	24.3
MN NRD resolution	—		(2.7)		—
Current period	22.4	%	22.0	%	24.3

Year 2018 and fourth quarter operating income:

Operating income margins were flat in the fourth quarter of 2018 when compared to the fourth quarter of 2017, and declined 2.3 percentage points in full year 2018 when compared to full year 2017.

Additional discussion related to the components of the year-on-year change in operating income margins follows:

2017 divestiture of identity management business:

- Operating income margins decreased year-on-year due to the gain on the May 2017 divestiture of the Company's former identity management business.

Organic volume/productivity and other:

- Operating income margins increased year-on-year due to benefits from organic local-currency growth and productivity, in addition to lower year-on-year portfolio and supply chain footprint optimization charges.
- Operating income margins decreased year-on-year due to higher defined benefit pension and postretirement service cost expense and defined contribution expense.

Acquisitions/other divestiture gains:

- Acquisition impacts (primarily related to Scott Safety), in addition to lower year-on-year divestiture gains (excluding the identity management business and Communication Markets), decreased operating margins year-on-year.
- Remaining stranded costs to be addressed from the divestiture of the Communication Markets Division reduced operating margins year-on-year.
- Operating income margins increased year-on-year due to the lost lower-margin operating income from divested businesses.

Selling price and raw material impact:

- Higher selling prices, partially offset by raw material cost increases, benefited operating income margins year-on-year.

Foreign exchange impacts:

- Foreign currency effects (net of hedge gains) increased operating margins year-on-year for the fourth quarter of 2018, but decreased operating income margins year-on-year for the full year 2018.

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Legal-related charges:

- In the second quarter of 2018, 3M reached agreements in principle on a number of respiratory mask/asbestos claims and an oral care product liability matter, the implications of which resulted in an increase in certain legal accruals. Refer to Note 16 for further details.

2018 divestiture of Communication Markets Division, net of related restructuring actions:

- In June 2018, 3M completed the sale of substantially all of its Communication Markets Division and reflected a pre-tax gain of \$494 million as a result of this divestiture. Additionally in December 2018, completed the sale of the remaining telecommunications system integration services portion of the business based in Germany and reflected a pre-tax gain of \$15 million as a result of this divestiture. Both divestitures were reported within the Company's Electronics and Energy business. During the second quarter and fourth quarter of 2018, management approved and committed to undertake certain restructuring actions related to addressing corporate functional costs following the Communication Markets Division divestiture. These actions resulted in a second quarter 2018 pre-tax charge of \$105 million and a fourth quarter 2018 pre-tax charge of \$22 million, net of adjustments for reductions in cost estimates.

MN NRD Resolution:

- Operating income margins for full year 2018 decreased 2.3 percentage points year-on-year. Excluding the first quarter 2018 impact of the Minnesota NRD resolution (as discussed earlier in the "Operating income, operating income margin, income before taxes, net income, earnings per share, and effective tax rate adjusted for impacts of the Minnesota NRD resolution and the measurement period adjustment to the impact of the enactment of the Tax Cuts and Jobs Act (TCJA) - (non-GAAP measures)" section and further in Note 14), operating margins increased 0.4 percentage points year-on-year for full year 2018.

Year 2017 operating income:

Operating income margins increased 1.0 percentage points for the full year 2017 when compared to the same period last year.

2017 divestiture of identity management business:

- Operating income margins increased year-on-year due to the gain on the May 2017 divestiture of the Company's former identity management business.

Organic volume/productivity and other:

- Operating income benefited from higher organic local-currency sales growth and productivity, partially offset by actuarial adjustments to the Company's respirator mask/asbestos liability accrual.

- Operating income margins decreased year-on-year due to higher year-on-year defined benefit pension service cost expense.
- Operating margins also decreased due to incremental strategic investments in growth, productivity and portfolio actions, in addition to charges related to 3M's optimization of its portfolio and supply chain footprint.

Acquisitions/other divestiture gains:

- Acquisitions and divestitures consist of the transactions and integration costs, net of income, that relate to the acquisition of Scott Safety, in addition to the year-on-year divestiture gains (other than identity management business, refer to Note 3) and non-repeating operating losses from divested businesses, which combined, benefited operating income margins for the full year 2017.

Selling price and raw material impact:

- 3M benefited from raw material sourcing cost reduction projects year-on-year.

Foreign exchange impacts:

- Foreign currency effects (net of hedge gains) decreased operating income margins year-on-year.

Other Expense (Income), Net:

See Note 6 for a detailed breakout of this line item.

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Interest expense increased during 2018 and 2017 due to higher average debt balances and higher U.S. borrowing costs. In addition, in October 2017, via cash tender offers, 3M repurchased \$305 million aggregate principal amount of its outstanding notes. The Company recorded an early debt extinguishment charge of \$96 million in the fourth quarter of 2017, which was included within interest expense. Capitalized interest related to property, plant and equipment construction in progress is recorded as a reduction to interest expense.

Interest income increased year-on-year in both 2018 and 2017 due to higher average interest rates.

Effective January 1, 2018, in conjunction with 3M's adoption of ASU No. 2017-07, all pension and postretirement net periodic benefit cost components (except the service cost component) are reported within other expense (income), net. For additional details, refer to Note 1 (Significant Accounting Policies). Year-on-year pension and postretirement net periodic benefit non-service costs increased \$55 million and \$68 million for the year 2018 and 2017, respectively. The year-on-year increases were primarily due to an increase in the net actuarial amortization expense.

Provision for Income Taxes:

(Percent of pre-tax income)	2018	2017	2016
Effective tax rate	23.4 %	35.5 %	28.3 %

The effective tax rate for 2018 was 23.4 percent, compared to 35.5 percent in 2017, a decrease of 12.1 percentage points. The effective tax rate for 2017 was 35.5 percent, compared to 28.3 percent in 2016, an increase of 7.2 percentage points. The changes in the tax rates between years were impacted by many factors, including the enactment of the Tax Cuts and Jobs Act (TCJA) in December 2017 as further described in the Overview, "Income, earnings per share, and effective tax rate adjusted for impacts of the Tax Cuts and Jobs Act (TCJA) -(non-GAAP measures)" section and in Note 10. During the fourth quarter of 2017, 3M recorded a net tax expense of \$762 million related to the enactment of the TCJA. As a result of finalizing estimates related to TCJA, the Company recorded additional net charges in the amount of \$176 million as measurement period adjustments in 2018. The expense is primarily related to the TCJA's transition tax on previously unremitted earnings of non-U.S. subsidiaries and is net of remeasurement of 3M's deferred tax assets and liabilities.

The TCJA establishes new tax laws that affected 2018 and will affect future periods, including, but not limited to: 1) reduction of the U.S. federal corporate tax rate from 35 percent to 21 percent, 2) the creation of a new provision designed to tax global intangible low-taxed income (GILTI), 3) addition of provisions incentivizing foreign-derived intangible income (FDII), 4) significant change to the U.S. federal tax implications of dividends, 5) limitations on the deductibility of certain executive compensation, and 6) the repeal of the domestic production activity deduction. Considering the impacts of the TCJA and other factors, the Company currently estimates its effective tax rate for 2019 will be approximately 20 to 22 percent. The tax rate can vary from quarter to quarter due to discrete items, such as the

settlement of income tax audits, changes in tax laws, and employee share-based payment accounting; as well as recurring factors, such as the geographic mix of income before taxes.

Refer to Note 10 for further discussion of income taxes.

Net Income Attributable to Noncontrolling Interest:

(Millions)	2018	2017	2016
Net income attributable to noncontrolling interest	\$ 14	\$ 11	\$ 8

Net income attributable to noncontrolling interest represents the elimination of the income or loss attributable to non-3M ownership interests in 3M consolidated entities. The amount primarily relates to 3M India Limited, of which 3M's effective ownership is 75 percent.

Currency Effects:

3M estimates that year-on-year currency effects, including hedging impacts, decreased pre-tax income by \$42 million and \$111 million in 2018 and 2017, respectively. These estimates include the effect of translating profits from local currencies into U.S. dollars; the impact of currency fluctuations on the transfer of goods between 3M operations in the United States and abroad; and transaction gains and losses, including derivative instruments designed to reduce foreign currency exchange rate risks. 3M estimates that year-on-

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year derivative and other transaction gains and losses decreased pre-tax income by approximately \$92 million and \$152 million in 2018 and 2017, respectively. Refer to Note 14 in the Consolidated Financial Statements for additional information concerning 3M's hedging activities.

PERFORMANCE BY BUSINESS SEGMENT

For a detailed discussion of the markets served and types of products offered by 3M's business segments, see Item 1, Business Segments. Financial information and other disclosures are provided in the Notes to the Consolidated Financial Statements. Effective in the first quarter of 2018, as part of 3M's continuing effort to improve the alignment of its businesses around markets and customers, the Company made the following changes:

Consolidation of customer account activity within international countries – expanding dual credit reporting

- The Company consolidated its customer account activity in each country into centralized sales districts for certain countries that make up approximately 70 percent of 3M's 2017 international net sales. Expansion of these initiatives, which previously had been deployed only in the U.S., reduces the complexity for customers when interacting with multiple 3M businesses. 3M business segment reporting measures include dual credit to business segments for certain sales and related operating income. This dual credit is based on which business segment provides customer account activity with respect to a particular product sold in a specific country. The expansion of alignment of customer accounts within additional countries increased the attribution of dual credit across 3M's business segments. Additionally, certain sales and operating income results for electronic bonding product lines that were previously equally divided between the Electronics and Energy business segment and the Industrial business segment are now reported similarly to dual credit.

Centralization of manufacturing and supply technology platforms

- Certain shared film manufacturing and supply technology platform resources formerly reflected within the Electronics and Energy business segment were combined with other shared and centrally managed material resource centers of expertise within Corporate and Unallocated.

In addition, as discussed in Note 1, 3M adopted ASU No. 2017-07, Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, effective January 1, 2018 on a retrospective basis. As a result, operating income for 3M's business segments has been revised to reflect non-service components of pension and postretirement net periodic benefit costs within other expense (income), net.

Business segment information presented herein reflects the impact of these changes for all periods presented. 3M manages its operations in five business segments. The reportable segments are Industrial; Safety and Graphics; Health Care; Electronics and Energy; and Consumer.

Corporate and Unallocated:

In addition to these five business segments, 3M assigns certain costs to “Corporate and Unallocated,” which is presented separately in the preceding business segments table and in Note 18. Corporate and Unallocated includes a variety of miscellaneous items, such as corporate investment gains and losses, certain derivative gains and losses, certain insurance-related gains and losses, certain litigation and environmental expenses, corporate restructuring charges and certain under- or over-absorbed costs (e.g. pension, stock-based compensation) that the Company determines not to allocate directly to its business segments. Corporate and Unallocated also includes sales, costs, and income from contract manufacturing, transition services and other arrangements with the acquirer of the Communication Markets Division following its divestiture in 2018. Because this category includes a variety of miscellaneous items, it is subject to fluctuation on a quarterly and annual basis.

Corporate and Unallocated operating expenses increased by \$1.1 billion in full year 2018 when compared to full year 2017. Beginning in the second quarter of 2018, the operating income from contractual manufacturing and other arrangements described in the paragraph above were included in Corporate and Unallocated. In addition, in the second quarter and fourth quarter of 2018, operating expenses included the restructuring charge of \$105 million and \$22 million, net of adjustments for reductions in cost estimates, respectively, as discussed in Note 5 related to addressing corporate functional costs following the Communication Markets Division divestiture. In the first quarter of 2018, the Minnesota NRD resolution (\$897 million), inclusive of legal fees and other related

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obligations, was reflected in Corporate and Unallocated. In addition, 3M's defined benefit pension and postretirement service-cost expense allocation to Corporate and Unallocated increased year-on-year.

Corporate and Unallocated operating expenses increased by \$74 million in 2017 when compared to 2016. In both the first and second quarters of 2017, a portion of the severance actions were reflected in Corporate and Unallocated. In the fourth quarter, an incremental \$58 million was reflected within Corporate and Unallocated related to the Company's actuarial adjustments to its respirator mask/asbestos liability accrual. In addition, 3M's defined benefit pension and postretirement service cost expense allocation to Corporate and Unallocated increased by approximately \$30 million in 2017.

Operating Business Segments:

Information related to 3M's business segments is presented in the tables that follow. Organic local-currency sales include both organic volume impacts plus selling price impacts. Acquisition and divestiture impacts, if any, are measured separately for the first twelve months post-transaction. Foreign currency translation impacts and total sales change are also provided for each business segment. Any references to EMEA relate to Europe, Middle East and Africa on a combined basis.

The following discusses total year results for 2018 compared to 2017 and 2017 compared to 2016, for each business segment. Refer to the preceding year 2018 and 2017 sales results by geographic area/business segment sections for additional sales change information.

Industrial Business (37.4% of consolidated sales):

	2018		2017		2016
Sales (millions)	\$ 12,267		\$ 11,866		\$ 11,217
Sales change analysis:					
Organic local-currency	3.2	%	5.8	%	
Divestitures	(0.1)		(0.5)		
Translation	0.3		0.5		
Total sales change	3.4	%	5.8	%	
Operating income (millions)	\$ 2,737		\$ 2,490		\$ 2,528
Percent change	9.9	%	(1.5)	%	
Percent of sales	22.3	%	21.0	%	22.5 %

Year 2018 results:

Sales in Industrial totaled \$12.3 billion, up 3.4 percent in U.S. dollars. Organic local-currency sales increased 3.2 percent, divestitures decreased sales by 0.1 percent, and foreign currency translation increased sales by 0.3 percent.

On an organic local-currency sales basis:

- Sales growth increased in advanced materials, separation and purification, industrial adhesives and tapes, automotive and aerospace, and abrasives. Benefits included 3M's automotive OEM's increased penetration across applications such as structural tapes, adhesives, acoustics, light-weighting and electronics solutions.
- Automotive aftermarket sales were flat, as growth in products and solutions for retail car care was offset by softening of the collision repair market.

Acquisitions and divestitures:

- In January 2016, 3M completed its sale of its pressurized polyurethane foam adhesives business (formerly known as Polyfoam).
- In October 2016, 3M sold the assets of its temporary protective films business.
- In the first quarter of 2018, 3M completed the sale of its polymer additives compounding business.
- In May 2018, 3M divested an abrasives glass products business.

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Operating income:

- Operating income margins increased 1.3 percentage points, helped by organic sales growth across most of the portfolio in addition to benefiting from expenses related to portfolio and footprint actions taken in 2017 that were not repeated in 2018.

Year 2017 results:

Sales in Industrial totaled \$11.9 billion, up 5.8 percent in U.S. dollars. Organic local-currency sales increased 5.8 percent, divestitures reduced sales by 0.5 percent, and foreign currency translation increased sales by 0.5 percent.

On an organic local-currency sales basis:

- Sales grew in all businesses, led by advanced materials, abrasives, automotive and aerospace solutions, and industrial adhesives and tapes.

Acquisitions and divestitures:

- There were no acquisitions or divestitures that closed during 2017. The year-on-year divestiture sales change was due to the impact of 2016 activity.

Operating income:

- Operating income margins decreased 1.5 percentage points, as divestiture impacts related to the first quarter 2016 sale of the Polyfoam business resulted in a net year-on-year operating income margin reduction of 0.6 percentage points. In addition, incremental strategic investments decreased margins by 1.0 percentage points.

Safety and Graphics Business (20.8% of consolidated sales):

	2018		2017		2016
Sales (millions)	\$ 6,827		\$ 6,235		\$ 5,948
Sales change analysis:					
Organic local-currency	5.1	%	6.3	%	
Acquisitions	7.3		2.2		
Divestitures	(3.1)		(4.2)		
Translation	0.2		0.5		
Total sales change	9.5	%	4.8	%	

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Operating income (millions)	\$ 1,720		\$ 2,066		\$ 1,403
Percent change	(16.7)	%	47.2	%	
Percent of sales	25.2	%	33.1	%	23.6 %

Year 2018 results:

Sales in Safety and Graphics totaled \$6.8 billion, up 9.5 percent in U.S. dollars. Organic local-currency sales increased 5.1 percent, acquisitions increased sales by 7.3 percent, divestitures reduced sales by 3.1 percent, and foreign currency translation increased sales by 0.2 percent.

On an organic local-currency sales basis:

- Sales increased in personal safety, commercial solutions, and transportation safety.
- Sales declined in roofing granules, as production slowed within the shingle manufacturing industry when compared to prior year.

Acquisitions and divestitures:

- Acquisition sales growth in 2018 reflects the acquisition of Scott Safety in October 2017. Scott Safety is a premier manufacturer of innovative products, including self-contained breathing apparatus systems, gas and flame detection instruments and other safety devices.

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- 2017 divestitures include the sale of its safety prescription eyewear business (first quarter 2017), the sale of 3M's identity management business and tolling and automated license/number plate business (both in second quarter 2017) and electronic monitoring business (fourth quarter 2017).
- In February 2018, 3M closed on the sale of certain personal safety product offerings primarily focused on noise, environmental, and heat stress monitoring.

Operating income:

- Operating income margins decreased 7.9 percentage points, which primarily related to the impact on operating margins from the 2017 gain on sale of the identify management and electronic monitoring businesses in addition to the impact from the Scott Safety acquisition.

Year 2017 results:

Sales in Safety and Graphics totaled \$6.2 billion, up 4.8 percent in U.S. dollars. Organic local-currency sales increased 6.3 percent, acquisitions increased sales by 2.2 percent, divestitures reduced sales by 4.2 percent, and foreign currency translation increased sales by 0.5 percent.

On an organic local-currency sales basis:

- Sales growth was led by personal safety and roofing granules.
- Transportation safety showed positive growth, while the commercial solutions business was flat.

Acquisitions and divestitures:

- In January 2017, 3M sold its safety prescription eyewear business.
- In the second quarter of 2017, 3M finalized the sale of its identity management business and tolling and automated license/number plate recognition business.
- In October 2017, 3M completed the acquisition of Scott Safety.
- Also in October 2017, 3M completed the sale of its electronic monitoring business.

Operating income:

- Operating income margins increased 9.5 percentage points, largely driven by year-on-year divestiture gains that were partially offset by acquisition charges and incremental strategic investments, which combined resulted in a net operating income margin benefit of 8.5 percentage points.

Health Care Business (18.4% of consolidated sales):

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	2018		2017		2016	
Sales (millions)	\$ 6,021		\$ 5,853		\$ 5,606	
Sales change analysis:						
Organic local-currency	2.6	%	3.9	%		
Translation	0.3		0.5			
Total sales change	2.9	%	4.4	%		
Operating income (millions)	\$ 1,799		\$ 1,764		\$ 1,731	
Percent change	2.0	%	1.9	%		
Percent of sales	29.9	%	30.1	%	30.9	%

Year 2018 results:

Sales in Health Care totaled \$6.0 billion, up 2.9 percent in U.S. dollars. Organic local-currency sales increased 2.6 percent, and foreign currency translation increased sales by 0.3 percent.

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On an organic local-currency sales basis:

- Sales growth was led by food safety, health information systems, and medical solutions.
- Oral care sales also increased, with continued positive growth internationally, particularly in developing economies.
- Sales declined in drug delivery systems.

Acquisitions:

- In September 2017, 3M acquired Elution Technologies, LLC, a manufacturer of food safety test kits.

Operating income:

- Operating income margins decreased 0.2 percentage points year-on-year due to continued investment in priority growth platforms.

As discussed in Note 3, in February 2019, 3M acquired the technology business of M*Modal. M*Modal is a leading healthcare technology provider of cloud-based, conversational artificial intelligence-powered systems that help physicians efficiently capture and improve the patient narrative.

Year 2017 results:

Sales in Health Care totaled \$5.9 billion, up 4.4 percent in U.S. dollars. Organic local-currency sales increased 3.9 percent and foreign currency translation increased sales by 0.5 percent.

On an organic local-currency sales basis:

- Sales increased in all businesses, led by drug delivery systems, food safety, and medical consumables (which is comprised of the critical and chronic care and infection prevention businesses).

Acquisitions:

- In September 2017, 3M acquired Elution Technologies, LLC, a manufacturer of food safety test kits.

Operating income:

- Operating income margins decreased 0.8 percent year-on-year, as incremental strategic investments, primarily related to accelerating future growth opportunities, reduced margins by 0.7 percentage points.

Electronics and Energy Business (16.7% of consolidated sales):

	2018		2017		2016
Sales (millions)	\$ 5,472		\$ 5,501		\$ 4,926
Sales change analysis:					
Organic local-currency	3.3	%	11.6	%	
Divestitures	(4.2)		(0.2)		
Translation	0.4		0.3		
Total sales change	(0.5)	%	11.7	%	
Operating income (millions)	\$ 2,055		\$ 1,377		\$ 1,145
Percent change	49.3	%	20.3	%	
Percent of sales	37.6	%	25.0	%	23.2 %

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Year 2018 results:

Sales in Electronics and Energy totaled \$5.5 billion, down 0.5 percent in U.S. dollars. Organic local-currency sales increased 3.3 percent, divestitures reduced sales by 4.2 percent, and foreign currency translation increased sales by 0.4 percent.

Total sales within the electronics-related and energy-related businesses increased 3 percent and decreased 10 percent, respectively. Total sales increased 4 percent in Asia Pacific.

On an organic local-currency sales basis:

- Sales increased 3 percent in 3M's electronics-related businesses, driven by increases in electronics materials solutions. Sales were flat in display materials and systems due to softness in consumer electronics.
- Sales increased 5 percent in 3M's energy-related businesses, driven by electrical markets.
- Sales increased 4 percent in Asia Pacific, where 3M's electronics business is concentrated.

Divestitures:

- In the fourth quarter of 2017, 3M sold the assets of its electrical marking/labeling business.
- In June 2018, 3M completed the sale of substantially all of its Communication Markets Division and recorded a pre-tax gain of approximately \$494 million. In December 2018, the Company completed the sale of the remaining telecommunications system integration services portion of the business based in Germany and recorded a pre-tax gain of \$15 million. Refer to Note 3 for additional details.

Operating income:

- Operating income margins increased 12.6 percentage points, primarily driven by the Communication Markets Division divestiture gain.

Year 2017 results:

Sales in Electronics and Energy totaled \$5.5 billion, up 11.7 percent in U.S. dollars. Organic local-currency sales increased 11.6 percent, divestitures reduced sales by 0.2 percent, and foreign currency translation increased sales by 0.3 percent.

Total sales within the electronics-related businesses were up 17 percent while energy-related businesses were up 2 percent.

On an organic local-currency sales basis:

- Sales increased 17 percent in 3M's electronics-related businesses, with increases in both display materials and systems and electronics materials solutions, as the businesses drove increased penetration on OEM platforms in addition to strengthened end-market demand in consumer electronics.
- Sales increased 1 percent in 3M's energy-related businesses, as sales growth in electrical markets was partially offset by declines in telecommunications.

Divestitures:

- In the fourth quarter of 2017, 3M sold the assets of its electrical marking/labeling business.
- In December 2016, 3M sold the assets of its cathode battery technology out-licensing business.

Operating income:

- Operating income margins increased 1.8 percentage points, as benefits from higher organic volume were partially offset by 2017 footprint and portfolio actions and year-on-year divestiture impacts. These actions resulted in a year-on-year operating income margin reduction of 2.2 percentage points.

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Consumer Business (14.6% of consolidated sales):

	2018		2017		2016
Sales (millions)	\$ 4,796		\$ 4,731		\$ 4,578
Sales change analysis:					
Organic local-currency	1.5	%	2.7	%	
Translation	(0.1)		0.6		
Total sales change	1.4	%	3.3	%	
Operating income (millions)	\$ 1,027		\$ 1,004		\$ 1,054
Percent change	2.4	%	(4.8)	%	
Percent of sales	21.4	%	21.2	%	23.0 %

Year 2018 results:

Sales in Consumer totaled \$4.8 billion, an increase of 1.4 percent in U.S. dollars. Organic local-currency sales increased 1.5 percent and foreign currency translation decreased sales by 0.1 percent.

On an organic local-currency sales basis:

- Sales grew in home improvement, building on a track record of strong performance over the past several years.
- Stationery and office supplies and home care were flat, while consumer health care declined.

Operating income:

- Operating income margins increased 0.2 percentage points year-on-year, benefiting from expenses related to portfolio and footprint actions taken in 2017 that were not repeated in 2018.

Year 2017 results:

Sales in Consumer totaled \$4.7 billion, up 3.3 percent in U.S. dollars. Organic local-currency sales increased 2.7 percent, while foreign currency translation increased sales by 0.6 percent.

On an organic local-currency sales basis:

- Sales grew in consumer health care, home improvement, and home care.
- The stationery and office supplies business declined due to channel inventory adjustments, primarily in the U.S. office retail and wholesale market.

Operating income:

- Operating income margins declined 1.8 percentage points year-on-year, in part due to incremental strategic investments, which reduced margins by 1.8 percentage points.

PERFORMANCE BY GEOGRAPHIC AREA

While 3M manages its businesses globally and believes its business segment results are the most relevant measure of performance, the Company also utilizes geographic area data as a secondary performance measure. Export sales are generally reported within the geographic area where the final sales to 3M customers are made. A portion of the products or components sold by 3M's operations to its customers are exported by these customers to different geographic areas. As customers move their operations from one geographic area to another, 3M's results will follow. Thus, net sales in a particular geographic area are not indicative of end-user consumption in that geographic area. Financial information related to 3M operations in various geographic areas is provided in Note 19.

Refer to the "Overview" section for a summary of net sales by geographic area and business segment.

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Geographic Area Supplemental Information

(Millions, except Employees)	Employees as of			Capital Spending			Property, Plant and Equipment - net	
	December 31,						as of December 31,	
	2018	2017	2016	2018	2017	2016	2018	2017
United States	37,412	36,958	35,748	\$ 994	\$ 852	\$ 834	\$ 4,915	\$ 4,891
Asia Pacific	18,971	18,283	18,124	238	209	228	1,624	1,672
Europe, Middle East and Africa	20,884	20,869	20,203	295	256	294	1,751	1,798
Latin America and Canada	16,249	15,426	17,509	50	56	64	448	505
Total Company	93,516	91,536	91,584	\$ 1,577	\$ 1,373	\$ 1,420	\$ 8,738	\$ 8,866

Employment:

Employment increased 1,980 positions in 2018 and decreased by 48 positions in 2017.

Capital Spending/Net Property, Plant and Equipment:

Investments in property, plant and equipment enable growth across many diverse markets, helping to meet product demand and increasing manufacturing efficiency. In 2018, 63% of 3M's capital spending was within the United States, followed by Europe, Middle East and Africa; Asia Pacific; and Latin America/Canada. 3M is increasing its investment in manufacturing and sourcing capability in order to more closely align its product capability with its sales in major geographic areas in order to best serve its customers throughout the world with proprietary, automated, efficient, safe and sustainable processes. Capital spending is discussed in more detail later in MD&A in the section entitled "Cash Flows from Investing Activities."

CRITICAL ACCOUNTING ESTIMATES

Information regarding significant accounting policies is included in Note 1 of the consolidated financial statements. As stated in Note 1, the preparation of financial statements requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, revenue and expenses, and related disclosure of contingent assets

and liabilities. Management bases its estimates on historical experience and on various assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates.

The Company believes its most critical accounting estimates relate to legal proceedings, the Company's pension and postretirement obligations, asset impairments and income taxes. Senior management has discussed the development, selection and disclosure of its critical accounting estimates with the Audit Committee of 3M's Board of Directors.

Legal Proceedings:

The categories of claims for which the Company has a probable and estimable liability, the amount of its liability accruals, and the estimates of its related insurance receivables are critical accounting estimates related to legal proceedings. Please refer to the section entitled "Process for Disclosure and Recording of Liabilities and Insurance Receivables Related to Legal Proceedings" (contained in "Legal Proceedings" in Note 16) for additional information about such estimates.

Pension and Postretirement Obligations:

3M has various company-sponsored retirement plans covering substantially all U.S. employees and many employees outside the United States. The primary U.S. defined-benefit pension plan was closed to new participants effective January 1, 2009. The Company accounts for its defined benefit pension and postretirement health care and life insurance benefit plans in accordance with Accounting Standard Codification (ASC) 715, Compensation — Retirement Benefits, in measuring plan assets and benefit obligations and in determining the amount of net periodic benefit cost. ASC 715 requires employers to recognize the underfunded or overfunded status of a defined benefit pension or postretirement plan as an asset or liability in its statement of financial position and recognize changes in the funded status in the year in which the changes occur through accumulated other comprehensive income, which is a component of stockholders' equity. While the company believes the valuation methods used to determine the fair value of plan assets are

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appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date. See Note 13 for additional discussion of actuarial assumptions used in determining defined benefit pension and postretirement health care liabilities and expenses.

Pension benefits associated with these plans are generally based primarily on each participant's years of service, compensation, and age at retirement or termination. The benefit obligation represents the present value of the benefits that employees are entitled to in the future for services already rendered as of the measurement date. The Company measures the present value of these future benefits by projecting benefit payment cash flows for each future period and discounting these cash flows back to the December 31 measurement date, using the yields of a portfolio of high quality, fixed-income debt instruments that would produce cash flows sufficient in timing and amount to settle projected future benefits. Service cost and interest cost are measured separately using the spot yield curve approach applied to each corresponding obligation. Service costs are determined based on duration-specific spot rates applied to the service cost cash flows. The interest cost calculation is determined by applying duration-specific spot rates to the year-by-year projected benefit payments. The spot yield curve approach does not affect the measurement of the total benefit obligations as the change in service and interest costs offset in the actuarial gains and losses recorded in other comprehensive income.

Using this methodology, the Company determined discount rates for its plans as follow:

	U.S. Qualified Pension	International Pension (weighted average)	U.S. Postretirement Medical	
December 31, 2018 Liability:				
Benefit obligation	4.36	% 2.50	% 4.28	%
2019 Net Periodic Benefit Cost				
Components:				
Service cost	4.47	% 2.36	% 4.45	%
Interest cost	4.04	% 2.26	% 3.93	%

Another significant element in determining the Company's pension expense in accordance with ASC 715 is the expected return on plan assets, which is based on strategic asset allocation of the plan, long-term capital market return expectations, and expected performance from active investment management. For the primary U.S. qualified pension plan, the expected long-term rate of return on an annualized basis for 2019 is 7.00%, a decrease from 7.25% in 2018. Refer to Note 13 for information on how the 2018 rate was determined. Return on assets assumptions for international pension and other post-retirement benefit plans are calculated on a plan-by-plan basis using plan asset allocations and expected long-term rate of return assumptions. The weighted average expected return for the international pension plan is 4.90% for 2019, compared to 5.02% for 2018.

For the year ended December 31, 2018, the Company recognized consolidated defined benefit pre-tax pension and postretirement service cost expense of \$483 million and a benefit of \$73 million related to all non-service pension and postretirement net benefit costs (after settlements, curtailments, special termination benefits and other) for a total

consolidated defined benefit pre-tax pension and postretirement expense of \$410 million, up from \$334 million in 2017.

In 2019, defined benefit pension and postretirement service cost expense is anticipated to total approximately \$420 million while non-service pension and postretirement net benefit costs (before settlements, curtailments, special termination benefits and other) is anticipated to be a benefit of approximately \$140 million, for a total consolidated defined benefit pre-tax pension and postretirement expense of \$280 million, a decrease of approximately \$130 million compared to 2018.

The table below summarizes the impact on 2019 pension expense for the U.S. and international pension plans of a 0.25 percentage point increase/decrease in the expected long-term rate of return on plan assets and discount rate assumptions used to measure plan liabilities and 2018 net periodic benefit cost. The table assumes all other factors are held constant, including the slope of the discount rate yield curves.

(Millions)	Increase (Decrease) in Net Periodic Benefit Cost			
	Discount Rate		Expected Return on Assets	
	-0.25%	+0.25%	-0.25%	+0.25%
U.S. pension plans	\$ 31	\$ (34)	\$ 37	\$ (37)
International pension plans	21	(17)	15	(15)

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Asset Impairments:

As of December 31, 2018, net property, plant and equipment totaled \$8.7 billion and net identifiable intangible assets totaled \$2.7 billion. Management makes estimates and assumptions in preparing the consolidated financial statements for which actual results will emerge over long periods of time. This includes the recoverability of long-lived assets employed in the business, including assets of acquired businesses. These estimates and assumptions are closely monitored by management and periodically adjusted as circumstances warrant. For instance, expected asset lives may be shortened or an impairment recorded based on a change in the expected use of the asset or performance of the related asset group.

Of the \$2.7 billion in net identifiable intangible assets, \$0.6 billion relates to indefinite-lived tradenames, primarily Capital Safety, whose tradenames (\$520 million at acquisition date) have been in existence for over 55 years (refer to Note 4 for more detail). The primary valuation technique used in estimating the fair value of indefinite lived intangible assets (tradenames) is a discounted cash flow approach. Specifically, a relief of royalty rate is applied to estimated sales, with the resulting amounts then discounted using an appropriate market/technology discount rate. The relief of royalty rate is the estimated royalty rate a market participant would pay to acquire the right to market/produce the product. If the resulting discounted cash flows are less than the book value of the indefinite lived intangible asset, impairment exists, and the asset value must be written down. Based on impairment testing in the third quarter of 2018, no impairment was indicated. The discounted cash flows related to the Capital Safety tradenames exceeded its book value by more than 20 percent in aggregate.

3M goodwill totaled approximately \$10.1 billion as of December 31, 2018. 3M's annual goodwill impairment testing is performed in the fourth quarter of each year. Impairment testing for goodwill is done at a reporting unit level, with all goodwill assigned to a reporting unit. Reporting units are one level below the business segment level, but are required to be combined when reporting units within the same segment have similar economic characteristics. At 3M, reporting units correspond to a division. 3M did not combine any of its reporting units for impairment testing.

An impairment loss would be recognized when the carrying amount of the reporting unit's net assets exceeds the estimated fair value of the reporting unit, and the loss would equal that difference. The estimated fair value of a reporting unit is determined using earnings for the reporting unit multiplied by a price/earnings ratio for comparable industry groups, or by using a discounted cash flow analysis. 3M typically uses the price/earnings ratio approach for stable and growing businesses that have a long history and track record of generating positive operating income and cash flows. 3M uses the discounted cash flow approach for start-up, loss position and declining businesses, in addition to using for businesses where the price/earnings ratio valuation method indicates additional review is warranted. 3M also uses discounted cash flow as an additional tool for businesses that may be growing at a slower rate than planned due to economic or other conditions.

As described in Note 18, effective in the first quarter of 2018, 3M made business segment reporting changes. For any product moves that resulted in reporting unit changes, the Company applied the relative fair value method to

determine the impact on goodwill of the associated reporting units. During the first quarter of 2018, the Company completed its assessment of any potential goodwill impairment for reporting units impacted by this new structure and determined that no impairment existed. The discussion that follows relates to the separate fourth quarter 2018 annual impairment test and is in the context of the reporting unit structure that existed at that time.

As of October 1, 2018, 3M had 24 primary reporting units, with ten reporting units accounting for approximately 89 percent of the goodwill. These ten reporting units were comprised of the following divisions: Advanced Materials, Display Materials and Systems, Electronics Materials Solutions, Health Information Systems, Industrial Adhesives and Tapes, Infection Prevention, Oral Care Solutions, Personal Safety, Separation and Purification, and Transportation Safety. The estimated fair value for all reporting units was in excess of carrying value by approximately 79 percent or more. 3M's market value at both December 31, 2018, and September 30, 2018, was significantly in excess of its shareholders' equity of approximately \$10 billion.

As discussed in Note 3, 3M sold its Communication Markets division in 2018, which comprised substantially all of the \$272 million reduction in goodwill associated with divestitures during 2018.

In 2018, 3M determined fair values using either an industry price-earnings ratio approach or a discounted cash flows analysis. Where applicable, 3M used a weighted-average discounted cash flow analysis for certain divisions, using projected cash flows that were

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weighted based on different sales growth and terminal value assumptions, among other factors. The weighting was based on management's estimates of the likelihood of each scenario occurring.

3M is a highly integrated enterprise, where businesses share technology and leverage common fundamental strengths and capabilities, thus many of 3M's businesses could not easily be sold on a stand-alone basis. 3M's focus on research and development has resulted in a portion of 3M's value being comprised of internally developed businesses that have no goodwill associated with them. Based on the annual test in the fourth quarter of 2018, no goodwill impairment was indicated for any of the reporting units.

Factors which could result in future impairment charges include, among others, changes in worldwide economic conditions, changes in competitive conditions and customer preferences, and fluctuations in foreign currency exchange rates. These risk factors are discussed in Item 1A, "Risk Factors," of this document. In addition, changes in the weighted average cost of capital could also impact impairment testing results. As indicated above, during the first quarter of 2018, the Company completed its assessment of any potential goodwill impairment for reporting units impacted by changes between reporting units and determined that no impairment existed. Long-lived assets with a definite life are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset (asset group) may not be recoverable. If future non-cash asset impairment charges are taken, 3M would expect that only a portion of the long-lived assets or goodwill would be impaired. 3M will continue to monitor its reporting units and asset groups in 2019 for any triggering events or other indicators of impairment.

Income Taxes:

The extent of 3M's operations involves dealing with uncertainties and judgments in the application of complex tax regulations in a multitude of jurisdictions. The final taxes paid are dependent upon many factors, including negotiations with taxing authorities in various jurisdictions and resolution of disputes arising from federal, state, and international tax audits. The Company recognizes potential liabilities and records tax liabilities for anticipated tax audit issues in the United States and other tax jurisdictions based on its estimate of whether, and the extent to which, additional taxes will be due. The Company follows guidance provided by ASC 740, Income Taxes, regarding uncertainty in income taxes, to record these liabilities (refer to Note 10 for additional information). The Company adjusts these reserves in light of changing facts and circumstances; however, due to the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from the Company's current estimate of the tax liabilities. If the Company's estimate of tax liabilities proves to be less than the ultimate assessment, an additional charge to expense would result. If payment of these amounts ultimately proves to be less than the recorded amounts, the reversal of the liabilities would result in tax benefits being recognized in the period when the Company determines the liabilities are no longer necessary.

Starting in the fourth quarter of 2017 and continuing into 2018, 3M recorded a net tax expense related to the enactment of the Tax Cuts and Jobs Act (TCJA). The expense is primarily related to the TCJA's transition tax on previously unremitted earnings of non-U.S. subsidiaries and remeasurement of 3M's deferred tax assets and liabilities.

As discussed in Note 10, this expense was finalized in the fourth quarter of 2018.

NEW ACCOUNTING PRONOUNCEMENTS

Information regarding new accounting pronouncements is included in Note 1 to the Consolidated Financial Statements.

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FINANCIAL CONDITION AND LIQUIDITY

The strength and stability of 3M's business model and strong free cash flow capability, together with proven capital markets access, positions the Company to be able to add further leverage to its capital structure. Investing in 3M's businesses to drive organic growth remains the first priority for capital deployment, including research and development, capital expenditures, and commercialization capability. Investment in organic growth will be supplemented by complementary acquisitions. 3M will also continue to return cash to shareholders through dividends and share repurchases. Sources for cash availability in the United States, such as ongoing cash flow from operations and access to capital markets, have historically been sufficient to fund dividend payments to shareholders, as well as funding U.S. acquisitions and other items as needed. The TCJA creates additional repatriation opportunities for 3M to access international cash positions on a continual and on-going basis and will help support U.S. capital deployments needs. For those international earnings still considered to be reinvested indefinitely, the Company currently has no plans or intentions to repatriate these funds for U.S. operations. See Note 10 for further information on earnings considered to be reinvested indefinitely.

3M's primary short-term liquidity needs are met through cash on hand and U.S. commercial paper issuances. 3M believes it will have continuous access to the commercial paper market. 3M's commercial paper program permits the Company to have a maximum of \$5 billion outstanding with a maximum maturity of 397 days from date of issuance. At December 31, 2018, there was approximately \$435 million in commercial paper issued and outstanding.

Total Debt:

The strength of 3M's capital structure and significant ongoing cash flows provide 3M proven access to capital markets. Additionally, the Company's maturity profile is staggered to help ensure refinancing needs in any given year are reasonable in proportion to the total portfolio. 3M currently has an AA- credit rating with a stable outlook from Standard & Poor's and has an A1 credit rating with a stable outlook from Moody's Investors Service.

The Company's total debt was \$0.7 billion higher at December 31, 2018 when compared to December 31, 2017. Increases in debt related to September 2018 debt issuances of \$2.25 billion along with the net impact of repayments and borrowings of international subsidiaries along with foreign currency effects. These were partially offset by August 2018 and November 2018 maturation of \$450 million and 500 million Euro, respectively, aggregate principal amount of medium-term notes in addition to commercial paper of \$435 million outstanding at year end 2018 compared to \$745 million outstanding at year end 2017. For discussion of repayments of and proceeds from debt refer to the following "Cash Flows from Financing Activities" section.

Effective February 24, 2017, the Company updated its "well-known seasoned issuer" (WKSI) shelf registration statement, which registers an indeterminate amount of debt or equity securities for future issuance and sale. This

replaced 3M's previous shelf registration dated May 16, 2014. In May 2016, in connection with the WKSJ shelf, 3M entered into an amended and restated distribution agreement relating to the future issuance and sale (from time to time) of the Company's medium-term notes program (Series F), up to the aggregate principal amount of \$18 billion, which was an increase from the previous aggregate principal amount up to \$9 billion of the same Series.

As of December 31, 2018, the total amount of debt issued as part of the medium-term notes program (Series F), inclusive of debt issued in 2011, 2012, 2014, 2015, 2016, 2017 and the 2018 debt referenced above, is approximately \$15.3 billion (utilizing the foreign exchange rates applicable at the time of issuance for the Euro denominated debt). Information with respect to long-term debt issuances and maturities for the periods presented is included in Note 12.

In March 2016, 3M amended and restated its existing \$2.25 billion five-year revolving credit facility expiring in August 2019 to a \$3.75 billion five-year revolving credit facility expiring in March 2021. This credit agreement includes a provision under which 3M may request an increase of up to \$1.25 billion (at lenders' discretion), bringing the total facility up to \$5.0 billion. This revolving credit facility is undrawn at December 31, 2018. Under the \$3.75 billion credit agreement, the Company is required to maintain its EBITDA to Interest Ratio as of the end of each fiscal quarter at not less than 3.0 to 1. This is calculated (as defined in the agreement) as the ratio of consolidated total EBITDA for the four consecutive quarters then ended to total interest expense on all funded debt for the same period. At December 31, 2018, this ratio was approximately 25 to 1. Debt covenants do not restrict the payment of dividends. Apart from the committed facilities, an additional \$243 million in stand-alone letters of credit and bank guarantees were also issued and outstanding at December 31, 2018. These instruments are utilized in connection with normal business activities.

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Cash, Cash Equivalents and Marketable Securities:

At December 31, 2018, 3M had \$3.3 billion of cash, cash equivalents and marketable securities, of which approximately \$3.1 billion was held by the Company's foreign subsidiaries and approximately \$160 million was held by the United States. These balances are invested in bank instruments and other high-quality fixed income securities. At December 31, 2017, cash, cash equivalents and marketable securities held by the Company's foreign subsidiaries and by the United States totaled approximately \$3.975 billion and \$180 million, respectively. Specifics concerning marketable securities investments are provided in Note 11.

Net Debt (non-GAAP measure):

Net debt is not defined under U.S. GAAP and may not be computed the same as similarly titled measures used by other companies. The Company defines net debt as total debt less the total of cash, cash equivalents and current and long-term marketable securities. 3M believes net debt is meaningful to investors as 3M considers net debt and its components to be important indicators of liquidity and financial position. The following table provides net debt as of December 31, 2018 and 2017.

(Millions)	December 31,		2018 versus
	2018	2017	2017
Total debt	\$ 14,622	\$ 13,949	\$ 673
Less: Cash, cash equivalents and marketable securities	3,270	4,156	(886)
Net debt (non-GAAP measure)	\$ 11,352	\$ 9,793	\$ 1,559

Refer to the preceding "Total Debt" and "Cash, Cash Equivalents and Marketable Securities" sections for additional details.

Balance Sheet:

3M's strong balance sheet and liquidity provide the Company with significant flexibility to fund its numerous opportunities going forward. The Company will continue to invest in its operations to drive growth, including continual review of acquisition opportunities.

The Company uses working capital measures that place emphasis and focus on certain working capital assets, such as accounts receivable and inventory activity.

Working Capital (non-GAAP measure):

(Millions)	December 31,		2018 versus
	2018	2017	2017
Current assets	\$ 13,709	\$ 14,277	\$ (568)
Less: Current liabilities	7,244	7,687	(443)
Working capital (non-GAAP measure)	\$ 6,465	\$ 6,590	\$ (125)

Various assets and liabilities, including cash and short-term debt, can fluctuate significantly from month to month depending on short-term liquidity needs. Working capital is not defined under U.S. generally accepted accounting principles and may not be computed the same as similarly titled measures used by other companies. The Company defines working capital as current assets minus current liabilities. 3M believes working capital is meaningful to investors as a measure of operational efficiency and short-term financial health.

Working capital decreased \$125 million compared with December 31, 2017. Current asset balance changes decreased working capital by \$568 million, driven by decreases in cash and cash equivalents and marketable securities, partially offset by increases in accounts receivable and inventories (discussed further below). Current liability balance changes increased working capital by \$443 million, primarily due to decreases in short-term debt.

Accounts receivable increased \$109 million from December 31, 2017, primarily due to increased sales. Foreign currency impacts decreased December 31, 2018 accounts receivable by \$166 million and divestitures, net of acquisitions, decreased accounts receivable by \$29 million. Inventory increased \$332 million from December 31, 2017, impacted by maintenance of additional inventory during

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the deployment in the U.S. of the Company's ERP system. Foreign currency impacts decreased December 31, 2018 inventory by \$154 million and divestitures, net of acquisitions, decreased inventory by \$23 million.

Return on Invested Capital (non-GAAP measure):

Return on Invested Capital (ROIC) is not defined under U.S. generally accepted accounting principles. Therefore, ROIC should not be considered a substitute for other measures prepared in accordance with U.S. GAAP and may not be comparable to similarly titled measures used by other companies. The Company defines ROIC as adjusted net income (net income including non-controlling interest plus after-tax interest expense) divided by average invested capital (equity plus debt). The Company believes ROIC is meaningful to investors as it focuses on shareholder value creation. The calculation is provided in the below table.

In 2018, ROIC of 22.2 percent was higher than 2017. The increase in 2018 when compared to 2017 was negatively impacted by the measurement period adjustments taken in 2018 to the expense recorded in December 2017 from the enactment of the TCJA, the impact from the resolution of the Minnesota natural resource damages (NRD) resolution, and the impact from the gain on sale of the Communication Markets Division, net of restructuring actions related to addressing corporate functional costs following the divestiture, which combined reduced ROIC by 2 percentage points in 2018.

In 2017, ROIC of 21.3 percent was lower than 2016. This decrease related to the net impact of the enactment of the TCJA and increases in commercial paper borrowings in conjunction with the December 2017 U.S. defined benefit pension plan contribution, which combined reduced ROIC by 3 percentage points in 2017.

Years ended December 31 (Millions)	2018	2017	2016			
Return on Invested Capital (non-GAAP measure)						
Net income including non-controlling interest	\$ 5,363	\$ 4,869	\$ 5,058			
Interest expense (after-tax) (1)	268	208	143			
Adjusted net income (Return)	\$ 5,631	\$ 5,077	\$ 5,201			
Average shareholders' equity (including non-controlling interest) (2)	\$ 10,407	\$ 11,627	\$ 11,316			
Average short-term and long-term debt (3)	14,912	12,156	11,725			
Average invested capital	\$ 25,318	\$ 23,783	\$ 23,041			
Return on invested capital (non-GAAP measure)	22.2	%	21.3	%	22.6	%

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(1) Effective income tax rate used for interest expense	23.4	%	35.5	%	28.3	%
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(2) Calculation of average equity (includes non-controlling interest)

Ending total equity as of:

March 31	\$ 11,039	\$ 11,040	\$ 11,495
June 30	10,428	11,644	11,658
September 30	10,311	12,202	11,769
December 31	9,848	11,622	10,343
Average total equity	\$ 10,407	\$ 11,627	\$ 11,316

(3) Calculation of average debt

Ending short-term and long-term debt as of:

March 31	\$ 15,660	\$ 11,711	\$ 11,139
June 30	14,519	11,301	11,749
September 30	14,846	11,663	12,361
December 31	14,622	13,949	11,650
Average short-term and long-term debt	\$ 14,912	\$ 12,156	\$ 11,725

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Cash Flows:

Cash flows from operating, investing and financing activities are provided in the tables that follow. Individual amounts in the Consolidated Statement of Cash Flows exclude the effects of acquisitions, divestitures and exchange rate impacts on cash and cash equivalents, which are presented separately in the cash flows. Thus, the amounts presented in the following operating, investing and financing activities tables reflect changes in balances from period to period adjusted for these effects.

Cash Flows from Operating Activities:

Years Ended December 31 (Millions)	2018	2017	2016
Net income including noncontrolling interest	\$ 5,363	\$ 4,869	\$ 5,058
Depreciation and amortization	1,488	1,544	1,474
Company pension and postretirement contributions	(370)	(967)	(383)
Company pension and postretirement expense	410	334	250
Stock-based compensation expense	302	324	298
Gain on sale of businesses	(545)	(586)	(111)
Income taxes (deferred and accrued income taxes)	77	1,074	108
Accounts receivable	(305)	(245)	(313)
Inventories	(509)	(387)	57
Accounts payable	408	24	148
Other — net	120	256	76
Net cash provided by operating activities	\$ 6,439	\$ 6,240	\$ 6,662

Cash flows from operating activities can fluctuate significantly from period to period, as pension funding decisions, tax timing differences and other items can significantly impact cash flows.

In 2018, cash flows provided by operating activities increased \$199 million compared to the same period last year, with the increase primarily made up of higher net income and lower year-on-year pension and postretirement contributions. The increase was partially offset primarily due to the Minnesota NRD resolution in the first quarter of 2018 and year-on-year increases in income tax payments. Additional factors that decreased operating cash flows were increases in inventory and accounts receivable. The combination of accounts receivable, inventories and accounts payable increased working capital by \$406 million in 2018, compared to the working capital increases of \$608 million in 2017. Additional discussion on working capital changes is provided earlier in the “Financial Condition and Liquidity” section.

In 2017, cash flows provided by operating activities decreased \$422 million compared to the same period last year. Factors that decreased operating cash flows were increases in pension contributions, plus year-on-year increases in working capital. In December 2017, 3M contributed \$600 million to its U.S. defined benefit pension plan, contributing to a year-on-year increase in pension and postretirement contributions of \$584 million. The combination of accounts receivable, inventories and accounts payable increased working capital by \$608 million in 2017, compared to working capital increases of \$108 million in 2016. In 2017, year-on-year decreases in income tax payments (net of refunds) increased operating cash flows by \$284 million.

Cash Flows from Investing Activities:

Years ended December 31 (Millions)	2018	2017	2016
Purchases of property, plant and equipment (PP&E)	\$ (1,577)	\$ (1,373)	\$ (1,420)
Proceeds from sale of PP&E and other assets	262	49	58
Acquisitions, net of cash acquired	13	(2,023)	(16)
Purchases and proceeds from maturities and sale of marketable securities and investments, net	669	(798)	(163)
Proceeds from sale of businesses, net of cash sold	846	1,065	142
Other — net	9	(6)	(4)
Net cash provided by (used in) investing activities	\$ 222	\$ (3,086)	\$ (1,403)

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Investments in property, plant and equipment enable growth across many diverse markets, helping to meet product demand and increasing manufacturing efficiency. The Company expects 2019 capital spending to be approximately \$1.7 billion to \$1.9 billion as 3M continues to invest in its businesses.

3M invests in renewal and maintenance programs, which pertain to cost reduction, cycle time, maintaining and renewing current capacity, eliminating pollution, and compliance. Costs related to maintenance, ordinary repairs, and certain other items are expensed. 3M also invests in growth, which adds to capacity, driven by new products, both through expansion of current facilities and new facilities. Finally, 3M also invests in other initiatives, such as information technology (IT) and laboratory facilities.

Refer to Note 3 for information on acquisitions and divestitures. The Company is actively considering additional acquisitions, investments and strategic alliances, and from time to time may also divest certain businesses. Proceeds from sale of businesses in 2018 primarily relate to the sale of 3M's Communication Markets Division and the sale of certain personal safety product offerings primarily focused on noise, environmental, and heat stress monitoring within the Safety and Graphics business segment.

Purchases of marketable securities and investments and proceeds from maturities and sale of marketable securities and investments are primarily attributable to asset-backed securities, certificates of deposit/time deposits, commercial paper, and other securities, which are classified as available-for-sale. Refer to Note 11 for more details about 3M's diversified marketable securities portfolio. Purchases of investments include additional survivor benefit insurance, plus investments in equity securities.

Cash Flows from Financing Activities:

Years ended December 31 (Millions)	2018	2017	2016
Change in short-term debt — net	\$ (284)	\$ 578	\$ (797)
Repayment of debt (maturities greater than 90 days)	(1,034)	(962)	(992)
Proceeds from debt (maturities greater than 90 days)	2,251	1,987	2,832
Total cash change in debt	\$ 933	\$ 1,603	\$ 1,043
Purchases of treasury stock	(4,870)	(2,068)	(3,753)
Proceeds from issuances of treasury stock pursuant to stock option and benefit plans	485	734	804
Dividends paid to stockholders	(3,193)	(2,803)	(2,678)
Other — net	(56)	(121)	(42)
Net cash used in financing activities	\$ (6,701)	\$ (2,655)	\$ (4,626)

2018 Debt Activity:

Total debt was approximately \$14.6 billion at December 31, 2018 and \$13.9 billion at December 31, 2017. Increases in debt related to the third quarter 2018 issuance of \$2.25 billion of medium-term notes, which was partially offset by the \$450 million third quarter repayment and 500 million Euro fourth quarter repayment of maturing medium-term notes, the net impact of repayments and borrowings of international subsidiaries along with foreign currency effects, and lower year on year commercial paper balance. Outstanding commercial paper was \$435 million at December 31, 2018, as compared to \$745 million at December 31, 2017. Net commercial paper issuances and repayments and borrowings by international subsidiaries are largely reflected in “Change in short-term debt – net” in the preceding table. 3M’s primary short-term liquidity needs are met through cash on hand and U.S. commercial paper issuances.

Proceeds from debt for 2018 primarily relate to the September 2018, issuance of \$400 million aggregate principal amount of 3-year fixed rate medium-term notes due 2021 with a coupon rate of 3.00%, \$300 million aggregate principal amount of 5.5-year fixed rate medium-term notes due 2024 with a coupon rate of 3.25%, \$300 million aggregate principal amount of 5.5-year floating rate medium-term notes due 2024 with a rate based on a floating three-month LIBOR index, \$600 million aggregate principal amount of 10-year fixed rate medium-term notes due 2028 with a coupon rate of 3.625%, and \$650 million aggregate principal amount of 30-year fixed rate medium-term notes due 2048 with a coupon rate of 4.00%. Refer to Note 12 for more detail of these debt issuances.

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2017 Debt Activity:

The Company's total debt was \$2.3 billion higher at December 31, 2017 when compared to December 31, 2016. Increases in debt related to October 2017 debt issuances of \$2.0 billion, commercial paper of \$745 million outstanding at year end 2017, and the net impact of repayments and borrowings of international subsidiaries. These are partially offset by June 2017 repayments of \$650 million aggregate principal amount of medium-term notes and the October 2017 \$305 million debt tender. Net commercial paper issuances and repayments and borrowings by international subsidiaries are largely reflected in "Change in short-term debt – net" in the preceding table. Foreign exchange rate changes also impacted debt balances.

Proceeds from debt for 2017 primarily related to the October 2017 issuance of \$650 million aggregate principal amount of 5.5-year fixed rate medium-term notes due 2023 with a coupon rate of 2.25%, \$850 million aggregate principal amount of 10-year fixed rate medium-term notes due 2027 with a coupon rate of 2.875%, and \$500 million aggregate principal amount of 30-year fixed rate medium-term notes due 2047 with a coupon rate of 3.625%. Refer to Note 12 for more detail of these debt issuances.

In October 2017, via cash tender offers, 3M repurchased \$305 million aggregate principal amount of its outstanding notes. This included \$110 million of its \$330 million principal amount of 6.375% notes due 2028 and \$195 million of its \$750 million principal amount of 5.70% notes due 2037. The Company recorded an early debt extinguishment charge of \$96 million in the fourth quarter of 2017 within interest expense associated with the differential between the carrying value and the amount paid to acquire the tendered notes and related expenses.

2016 Debt Activity:

Total debt at December 31, 2016 increased \$853 million when compared to year-end 2015, with the increase primarily due to May 2016 debt issuances (approximately \$1.1 billion at issue date exchange rates) and September 2016 debt issuances of approximately \$1.75 billion. This increase was partially offset by the repayment of \$1 billion aggregate principal amount of medium-term notes due September 2016 along with the net impact of repayments and borrowings by international subsidiaries, primarily Japan and Korea (approximately \$0.8 million decrease), which is reflected in "Change in short-term debt—net" in the preceding table. Foreign exchange rate changes also impacted debt balances.

Proceeds from debt for 2016 primarily related to the May 2016 issuance of 500 million Euro aggregate principal amount of 5.75-year fixed rate medium-term notes due February 2022 with a coupon rate of 0.375% and 500 million Euro aggregate principal amount of 15-year fixed rate medium-term notes due 2031 with a coupon rate of 1.50%. In September 2016, 3M issued \$600 million aggregate principal amount of five-year fixed rate medium-term notes due 2021 with a coupon rate of 1.625%, \$650 million aggregate principal amount of 10-year fixed rate medium-term notes due 2026 with a coupon rate of 2.250%, and \$500 million aggregate principal amount of 30-year fixed rate

medium-term notes due 2046 with a coupon rate of 3.125%. All of these 2016 issuances were under the medium-term notes program (Series F).

Repurchases of Common Stock:

Repurchases of common stock are made to support the Company's stock-based employee compensation plans and for other corporate purposes. In November 2018, 3M's Board of Directors authorized the repurchase of up to \$10 billion of 3M's outstanding common stock, which replaced the Company's February 2016 repurchase program. This program has no pre-established end date. In 2018, the Company purchased \$4.9 billion of its own stock, compared to purchases of \$2.1 billion and \$3.8 billion in 2017 and 2016, respectively. The Company expects full-year 2019 gross share repurchases to be between \$2.0 billion to \$4.0 billion. For more information, refer to the table titled "Issuer Purchases of Equity Securities" in Part II, Item 5. The Company does not utilize derivative instruments linked to the Company's stock.

Dividends Paid to Shareholders:

Cash dividends paid to shareholders totaled \$3.193 billion (\$5.44 per share) in 2018, \$2.803 billion (\$4.70 per share) in 2017, and \$2.678 billion (\$4.44 per share) in 2016. 3M has paid dividends since 1916. In February 2019, 3M's Board of Directors declared a first-quarter 2019 dividend of \$1.44 per share, an increase of 6 percent. This is equivalent to an annual dividend of \$5.76 per share and marked the 61st consecutive year of dividend increases.

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Other cash flows from financing activities may include various other items, such as changes in cash overdraft balances, and principal payments for capital leases. In addition, in 2017, this included a payment related to the \$96 million in interest expense associated with premiums and fees for the early retirement of debt. See Note 12 for additional details.

Free Cash Flow (non-GAAP measure):

Free cash flow and free cash flow conversion are not defined under U.S. generally accepted accounting principles (GAAP). Therefore, they should not be considered a substitute for income or cash flow data prepared in accordance with U.S. GAAP and may not be comparable to similarly titled measures used by other companies. The Company defines free cash flow as net cash provided by operating activities less purchases of property, plant and equipment. It should not be inferred that the entire free cash flow amount is available for discretionary expenditures. The Company defines free cash flow conversion as free cash flow divided by net income attributable to 3M. The Company believes free cash flow and free cash flow conversion are meaningful to investors as they are useful measures of performance and the Company uses these measures as an indication of the strength of the company and its ability to generate cash. The first quarter of each year is typically 3M's seasonal low for free cash flow and free cash flow conversion. Below find a recap of free cash flow and free cash flow conversion for 2018, 2017 and 2016.

In 2018, free cash flow conversion was impacted by the \$176 million measurement period adjustment to the tax expense recorded in December 2017 from the enactment of the TCJA, the \$897 million pre-tax impact related to the resolution of the Minnesota natural resource damages (NRD), and the \$381 million pre-tax impact from the gain on sale of the Communication Markets Division, net of restructuring actions related to addressing corporate functional costs following the divestiture. On a combined basis, these items reduced free cash flow conversion by 2 percentage points.

In 2017, free cash flow conversion was impacted by enactment of the TCJA, along with an additional U.S. pension contribution of \$600 million that 3M made following the signing of tax reform. On a combined basis, these items benefited free cash flow conversion by 3 percentage points. Refer to the preceding "Cash Flows from Operating Activities" section for discussion of additional items that impacted operating cash flow. Refer to the preceding "Cash Flows from Investing Activities" section for discussion on capital spending for property, plant and equipment.

Years ended December 31 (Millions)	2018	2017	2016
Major GAAP Cash Flow Categories			
Net cash provided by operating activities	\$ 6,439	\$ 6,240	\$ 6,662
Net cash provided by (used in) investing activities	222	(3,086)	(1,403)
Net cash used in financing activities	(6,701)	(2,655)	(4,626)

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Free Cash Flow (non-GAAP measure)								
Net cash provided by operating activities	\$	6,439		\$	6,240	\$	6,662	
Purchases of property, plant and equipment (PP&E)		(1,577)			(1,373)		(1,420)	
Free cash flow	\$	4,862		\$	4,867	\$	5,242	
Net income attributable to 3M	\$	5,349		\$	4,858	\$	5,050	
Free cash flow conversion		91	%		100	%	104	%

Off-Balance Sheet Arrangements and Contractual Obligations:

As of December 31, 2018, the Company has not utilized special purpose entities to facilitate off-balance sheet financing arrangements. Refer to the section entitled “Warranties/Guarantees” in Note 16 for discussion of accrued product warranty liabilities and guarantees.

In addition to guarantees, 3M, in the normal course of business, periodically enters into agreements that require the Company to indemnify either major customers or suppliers for specific risks, such as claims for injury or property damage arising out of the use of 3M products or the negligence of 3M personnel, or claims alleging that 3M products infringe third-party patents or other intellectual property. While 3M’s maximum exposure under these indemnification provisions cannot be estimated, these indemnifications are not expected to have a material impact on the Company’s consolidated results of operations or financial condition.

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Contractual Obligations

A summary of the Company's significant contractual obligations as of December 31, 2018, follows:

(Millions)	Total	Payments due by year					After 2023
		2019	2020	2021	2022	2023	
Total debt (Note 12)	\$ 14,622	\$ 1,211	\$ 1,330	\$ 1,698	\$ 1,165	\$ 1,328	\$ 7,890
Interest on long-term debt	4,281	335	331	321	280	264	2,750
Operating leases (Note 16)	1,111	283	208	153	122	92	253
Capital leases (Note 16)	104	18	16	14	12	12	32
Tax Cuts and Jobs Act (TCJA) transition tax (Note 10)	649	—	16	67	67	125	374
Unconditional purchase obligations and other	1,410	991	216	131	40	15	17
Total contractual cash obligations	\$ 22,177	\$ 2,838	\$ 2,117	\$ 2,384	\$ 1,686	\$ 1,836	\$ 11,316

Long-term debt payments due in 2019 and 2020 include floating rate notes totaling \$124 million and \$95 million, respectively, as a result of put provisions associated with these debt instruments.

During the fourth quarter of 2017, 3M recorded a net tax expense related to the enactment of the Tax Cuts and Jobs Act (TCJA). The expense is primarily related to the TCJA's transition tax. The transition tax is payable over 8 years at the election of the taxpayer. As discussed in Note 10, this balance was finalized in 2018.

Unconditional purchase obligations are defined as agreements to purchase goods or services that are enforceable and legally binding on the Company. Included in the unconditional purchase obligations category above are certain obligations related to take or pay contracts, capital commitments, service agreements and utilities. These estimates include both unconditional purchase obligations with terms in excess of one year and normal ongoing purchase obligations with terms of less than one year. Many of these commitments relate to take or pay contracts, in which 3M guarantees payment to ensure availability of products or services that are sold to customers. The Company expects to receive consideration (products or services) for these unconditional purchase obligations. Contractual capital commitments are included in the preceding table, but these commitments represent a small part of the Company's expected capital spending. The purchase obligation amounts do not represent the entire anticipated purchases in the future, but represent only those items for which the Company is contractually obligated. The majority of 3M's products and services are purchased as needed, with no unconditional commitment. For this reason, these amounts will not

provide a reliable indicator of the Company's expected future cash outflows on a stand-alone basis.

Other obligations, included in the preceding table within the caption entitled "Unconditional purchase obligations and other," include the current portion of the liability for uncertain tax positions under ASC 740, which is expected to be paid out in cash in the next 12 months, when applicable. The Company is not able to reasonably estimate the timing of the long-term payments, or the amount by which the liability will increase or decrease over time; therefore, the long-term portion of the total net tax liability of \$655 million is excluded from the preceding table. In addition, the transition tax prescribed under the Tax Cuts and Jobs Act (TCJA) is separately included in the table above. Refer to Note 10 for further details.

As discussed in Note 13, the Company does not have a required minimum cash pension contribution obligation for its U.S. plans in 2019 and Company contributions to its U.S. and international pension plans are expected to be largely discretionary in future years; therefore, amounts related to these plans are not included in the preceding table.

FINANCIAL INSTRUMENTS

The Company enters into foreign exchange forward contracts, options and swaps to hedge against the effect of exchange rate fluctuations on cash flows denominated in foreign currencies and certain intercompany financing transactions. The Company manages interest rate risks using a mix of fixed and floating rate debt. To help manage borrowing costs, the Company may enter into interest rate swaps. Under these arrangements, the Company agrees to exchange, at specified intervals, the difference between fixed and floating interest amounts calculated by reference to an agreed-upon notional principal amount. The Company manages commodity price risks through negotiated supply contracts, price protection agreements and commodity price swaps.

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Refer to Item 7A, “Quantitative and Qualitative Disclosures About Market Risk”, for further discussion of foreign exchange rates risk, interest rates risk, commodity prices risk and value at risk analysis.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

In the context of Item 7A, 3M is exposed to market risk due to the risk of loss arising from adverse changes in foreign currency exchange rates, interest rates and commodity prices. Changes in those factors could cause fluctuations in earnings and cash flows. Senior management provides oversight for risk management and derivative activities, determines certain of the Company’s financial risk policies and objectives, and provides guidelines for derivative instrument utilization. Senior management also establishes certain associated procedures relative to control and valuation, risk analysis, counterparty credit approval, and ongoing monitoring and reporting.

The Company is exposed to credit loss in the event of nonperformance by counterparties in interest rate swaps, currency swaps, commodity price swaps, and forward and option contracts. However, the Company’s risk is limited to the fair value of the instruments. The Company actively monitors its exposure to credit risk through the use of credit approvals and credit limits, and by selecting major international banks and financial institutions as counterparties. The Company does not anticipate nonperformance by any of these counterparties.

Foreign Exchange Rates Risk:

Foreign currency exchange rates and fluctuations in those rates may affect the Company’s net investment in foreign subsidiaries and may cause fluctuations in cash flows related to foreign denominated transactions. 3M is also exposed to the translation of foreign currency earnings to the U.S. dollar. The Company enters into foreign exchange forward and option contracts to hedge against the effect of exchange rate fluctuations on cash flows denominated in foreign currencies. These transactions are designated as cash flow hedges. 3M may dedesignate these cash flow hedge relationships in advance of the occurrence of the forecasted transaction. The maximum length of time over which 3M hedges its exposure to the variability in future cash flows of the forecasted transactions is 36 months. In addition, 3M enters into foreign currency forward contracts that are not designated in hedging relationships to offset, in part, the impacts of certain intercompany activities (primarily associated with intercompany licensing arrangements and intercompany financing transactions). As circumstances warrant, the Company also uses foreign currency forward contracts and foreign currency denominated debt as hedging instruments to hedge portions of the Company’s net investments in foreign operations. The dollar equivalent gross notional amount of the Company’s foreign exchange forward and option contracts designated as either cash flow hedges or net investment hedges was \$3.4 billion at December 31, 2018. The dollar equivalent gross notional amount of the Company’s foreign exchange forward and option contracts not designated as hedging instruments was \$2.5 billion at December 31, 2018. In addition, as of December 31, 2018, the Company had 4.1 billion Euros in principal amount of foreign currency denominated debt designated as non-derivative hedging instruments in certain net investment hedges as discussed in Note 14 in the “Net Investment Hedges” section.

Interest Rates Risk:

The Company may be impacted by interest rate volatility with respect to existing debt and future debt issuances. 3M manages interest rate risk and expense using a mix of fixed and floating rate debt. In addition, the Company may enter into interest rate swaps that are designated and qualify as fair value hedges. Under these arrangements, the Company agrees to exchange, at specified intervals, the difference between fixed and floating interest amounts calculated by reference to an agreed-upon notional principal amount. The dollar equivalent (based on inception date foreign currency exchange rates) gross notional amount of the Company's interest rate swaps at December 31, 2018 was \$2.4 billion. Additional details about 3M's long-term debt can be found in Note 12, including references to information regarding derivatives and/or hedging instruments, further discussed in Note 14, associated with the Company's long-term debt.

Commodity Prices Risk:

The Company manages commodity price risks through negotiated supply contracts, price protection agreements and commodity price swaps. The related mark-to-market gain or loss on qualifying hedges was included in other comprehensive income to the extent effective, and reclassified into cost of sales in the period during which the hedged transaction affected earnings. The Company may enter into other commodity price swaps to offset, in part, fluctuation and costs associated with the use of certain commodities and

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precious metals. These instruments are not designated in hedged relationships and the extent to which they were outstanding at December 31, 2018 was not material.

Value At Risk:

The value at risk analysis is performed annually to assess the Company's sensitivity to changes in currency rates, interest rates, and commodity prices. A Monte Carlo simulation technique was used to test the impact on after-tax earnings related to financial instruments (primarily debt), derivatives and underlying exposures outstanding at December 31, 2018. The model (third-party bank dataset) used a 95 percent confidence level over a 12-month time horizon. The exposure to changes in currency rates model used 9 currencies, interest rates related to two currencies, and commodity prices related to five commodities. This model does not purport to represent what actually will be experienced by the Company. This model does not include certain hedge transactions, because the Company believes their inclusion would not materially impact the results. The following table summarizes the possible adverse and positive impacts to after-tax earnings related to these exposures.

(Millions)	Adverse impact on after-tax earnings		Positive impact on after-tax earnings	
	2018	2017	2018	2017
Foreign exchange rates	\$ (290)	\$ (242)	\$ 305	\$ 253
Interest rates	(20)	(15)	17	14
Commodity prices	(6)	(3)	8	3

In addition to the possible adverse and positive impacts discussed in the preceding table related to foreign exchange rates, recent historical information is as follows. 3M estimates that year-on-year currency effects, including hedging impacts, decreased pre-tax income by \$42 million and \$111 million in 2018 and 2017, respectively. This estimate includes the effect of translating profits from local currencies into U.S. dollars; the impact of currency fluctuations on the transfer of goods between 3M operations in the United States and abroad; and transaction gains and losses, including derivative instruments designed to reduce foreign currency exchange rate risks. 3M estimates that year-on-year derivative and other transaction gains and losses decreased pre-tax income by approximately \$92 million and \$152 million in 2018 and 2017, respectively.

An analysis of the global exposures related to purchased components and materials is performed at each year-end. A one percent price change would result in a pre-tax cost or savings of approximately \$75 million per year. The global energy exposure is such that a ten percent price change would result in a pre-tax cost or savings of approximately \$42 million per year. Global energy exposure includes energy costs used in 3M production and other facilities, primarily electricity and natural gas.

Item 8. Financial Statements and Supplementary Data.

Index to Financial Statements

A complete summary of Form 10-K content, including the index to financial statements, is found at the beginning of this document.

Management's Responsibility for Financial Reporting

Management is responsible for the integrity and objectivity of the financial information included in this report. The financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America. Where necessary, the financial statements reflect estimates based on management's judgment.

Management has established and maintains a system of internal control over financial reporting for the Company and its subsidiaries. This system and its established accounting procedures and related controls are designed to provide reasonable assurance that assets are safeguarded, that the books and records properly reflect all transactions, that policies and procedures are implemented by qualified personnel, and that published financial statements are properly prepared and fairly presented. The Company's system of internal control over financial reporting is supported by widely communicated written policies, including business conduct policies, which are designed to require all employees to maintain high ethical standards in the conduct of Company affairs. Internal auditors continually review the accounting and control system.

3M Company

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Management's Report on Internal Control Over Financial Reporting

Management is responsible for establishing and maintaining an adequate system of internal control over financial reporting. Management conducted an assessment of the Company's internal control over financial reporting based on the framework established by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control — Integrated Framework (2013). Based on the assessment, management concluded that, as of December 31, 2018, the Company's internal control over financial reporting is effective.

The Company's internal control over financial reporting as of December 31, 2018 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included herein, which expresses an unqualified opinion on the effectiveness of the Company's internal control over financial reporting as of December 31, 2018.

3M Company

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Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of 3M Company

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of 3M Company and its subsidiaries (the “Company”) as of December 31, 2018 and 2017, and the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the three years in the period ended December 31, 2018, including the related notes (collectively referred to as the “consolidated financial statements”). We also have audited the Company's internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of December 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended December 31, 2018 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2018, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

Basis for Opinions

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

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting

was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

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

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

/s/ PricewaterhouseCoopers LLP

Minneapolis, Minnesota

February 7, 2019

We have served as the Company's auditor since 1975.

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3M Company and Subsidiaries

Consolidated Statement of Income

Years ended December 31

(Millions, except per share amounts)	2018	2017	2016
Net sales	\$ 32,765	\$ 31,657	\$ 30,109
Operating expenses			
Cost of sales	16,682	16,055	15,118
Selling, general and administrative expenses	7,602	6,626	6,311
Research, development and related expenses	1,821	1,870	1,764
Gain on sale of businesses	(547)	(586)	(111)
Total operating expenses	25,558	23,965	23,082
Operating income	7,207	7,692	7,027
Other expense (income), net	207	144	(26)
Income before income taxes	7,000	7,548	7,053
Provision for income taxes	1,637	2,679	1,995
Net income including noncontrolling interest	\$ 5,363	\$ 4,869	\$ 5,058
Less: Net income attributable to noncontrolling interest	14	11	8
Net income attributable to 3M	\$ 5,349	\$ 4,858	\$ 5,050
Weighted average 3M common shares outstanding — basic	588.5	597.5	604.7
Earnings per share attributable to 3M common shareholders — basic	\$ 9.09	\$ 8.13	\$ 8.35
Weighted average 3M common shares outstanding — diluted	602.0	612.7	618.7
Earnings per share attributable to 3M common shareholders — diluted	\$ 8.89	\$ 7.93	\$ 8.16

The accompanying Notes to Consolidated Financial Statements are an integral part of this statement.

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3M Company and Subsidiaries

Consolidated Statement of Comprehensive Income

Years ended December 31

(Millions)	2018	2017	2016
Net income including noncontrolling interest	\$ 5,363	\$ 4,869	\$ 5,058
Other comprehensive income (loss), net of tax:			
Cumulative translation adjustment	(467)	373	(331)
Defined benefit pension and postretirement plans adjustment	444	52	(524)
Cash flow hedging instruments, unrealized gain (loss)	176	(203)	(33)
Total other comprehensive income (loss), net of tax	153	222	(888)
Comprehensive income (loss) including noncontrolling interest	5,516	5,091	4,170
Comprehensive (income) loss attributable to noncontrolling interest	(8)	(14)	(6)
Comprehensive income (loss) attributable to 3M	\$ 5,508	\$ 5,077	\$ 4,164

The accompanying Notes to Consolidated Financial Statements are an integral part of this statement.

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3M Company and Subsidiaries

Consolidated Balance Sheet

At December 31

(Dollars in millions, except per share amount)	December 31, 2018	December 31, 2017
Assets		
Current assets		
Cash and cash equivalents	\$ 2,853	\$ 3,053
Marketable securities — current	380	1,076
Accounts receivable — net of allowances of \$95 and \$103	5,020	4,911
Inventories		
Finished goods	2,120	1,915
Work in process	1,292	1,218
Raw materials and supplies	954	901
Total inventories	4,366	4,034
Prepays	741	937
Other current assets	349	266
Total current assets	13,709	14,277
Property, plant and equipment	24,873	24,914
Less: Accumulated depreciation	(16,135)	(16,048)
Property, plant and equipment — net	8,738	8,866
Goodwill	10,051	10,513
Intangible assets — net	2,657	2,936
Other assets	1,345	1,395
Total assets	\$ 36,500	\$ 37,987
Liabilities		
Current liabilities		
Short-term borrowings and current portion of long-term debt	\$ 1,211	\$ 1,853
Accounts payable	2,266	1,945
Accrued payroll	749	870
Accrued income taxes	243	310
Other current liabilities	2,775	2,709
Total current liabilities	7,244	7,687
Long-term debt	13,411	12,096
Pension and postretirement benefits	2,987	3,620
Other liabilities	3,010	2,962
Total liabilities	\$ 26,652	\$ 26,365
Commitments and contingencies (Note 16)		
Equity		
3M Company shareholders' equity:		
Common stock par value, \$.01 par value	\$ 9	\$ 9
Shares outstanding - 2018: 576,575,168		

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Shares outstanding - 2017: 594,884,237		
Additional paid-in capital	5,643	5,352
Retained earnings	40,636	39,115
Treasury stock	(29,626)	(25,887)
Accumulated other comprehensive income (loss)	(6,866)	(7,026)
Total 3M Company shareholders' equity	9,796	11,563
Noncontrolling interest	52	59
Total equity	\$ 9,848	\$ 11,622
Total liabilities and equity	\$ 36,500	\$ 37,987

The accompanying Notes to Consolidated Financial Statements are an integral part of this statement.

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3M Company and Subsidiaries

Consolidated Statement of Changes in Equity

Years Ended December 31

(Dollars in millions, except per share amounts)	Total	3M Company Shareholders			Accumulated Other Comprehensive Income (Loss)	Non- controlling Interests
		Common Stock and Additional Paid-in Capital	Retained Earnings	Treasury Stock		
Balance at December 31, 2015	\$ 11,468	\$ 4,800	\$ 36,296	\$ (23,308)	\$ (6,359)	\$ 39
Net income	5,058		5,050			8
Other comprehensive income (loss), net of tax:						
Cumulative translation adjustment	(331)				(329)	(2)
Defined benefit pension and post-retirement plans adjustment	(524)				(524)	—
Cash flow hedging instruments - unrealized gain (loss)	(33)				(33)	—
Total other comprehensive income (loss), net of tax	(888)					
Dividends declared (\$4.44 per share, Note 8)	(2,678)		(2,678)			
Stock-based compensation	270	270				
Reacquired stock	(3,699)			(3,699)		
Issuances pursuant to stock option and benefit plans	812		(761)	1,573		
Balance at December 31, 2016	\$ 10,343	\$ 5,070	\$ 37,907	\$ (25,434)	\$ (7,245)	\$ 45
Net income	4,869		4,858			11
Other comprehensive income (loss), net of tax:						
Cumulative translation adjustment	373				370	3
Defined benefit pension and post-retirement plans adjustment	52				52	—
Cash flow hedging instruments - unrealized gain (loss)	(203)				(203)	—
Total other comprehensive income (loss), net of tax	222					
Dividends declared (\$4.70 per share, Note 8)	(2,803)		(2,803)			
Stock-based compensation	291	291				
Reacquired stock	(2,044)			(2,044)		
Issuances pursuant to stock option and benefit plans	744		(847)	1,591		
Balance at December 31, 2017	\$ 11,622	\$ 5,361	\$ 39,115	\$ (25,887)	\$ (7,026)	\$ 59
Net income	5,363		5,349			14
Other comprehensive income (loss), net of tax:						

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Cumulative translation adjustment	(467)			(461)	(6)
Defined benefit pension and post-retirement plans adjustment	444			444	—
Cash flow hedging instruments - unrealized gain (loss)	176			176	—
Total other comprehensive income (loss), net of tax	153				
Dividends declared (\$5.44 per share, Note 8)	(3,193)		(3,193)		
Transfer of ownership involving non-wholly owned subsidiaries	—		14	1	(15)
Stock-based compensation	291	291			
Reacquired stock	(4,888)			(4,888)	
Issuances pursuant to stock option and benefit plans	500		(649)	1,149	
Balance at December 31, 2018	\$ 9,848	\$ 5,652	\$ 40,636	\$ (29,626)	\$ (6,866)

Supplemental share information	2018	2017	2016
Treasury stock			
Beginning balance	349,148,819	347,306,778	334,702,932
Reacquired stock	23,526,293	10,209,963	22,602,748
Issuances pursuant to stock options and benefit plans	(5,217,224)	(8,367,922)	(9,998,902)
Ending balance	367,457,888	349,148,819	347,306,778

The accompanying Notes to Consolidated Financial Statements are an integral part of this statement.

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3M Company and Subsidiaries

Consolidated Statement of Cash Flows

Years ended December 31

(Millions)	2018	2017	2016
Cash Flows from Operating Activities			
Net income including noncontrolling interest	\$ 5,363	\$ 4,869	\$ 5,058
Adjustments to reconcile net income including noncontrolling interest to net cash provided by operating activities			
Depreciation and amortization	1,488	1,544	1,474
Company pension and postretirement contributions	(370)	(967)	(383)
Company pension and postretirement expense	410	334	250
Stock-based compensation expense	302	324	298
Gain on sale of businesses	(545)	(586)	(111)
Deferred income taxes	(57)	107	7
Changes in assets and liabilities			
Accounts receivable	(305)	(245)	(313)
Inventories	(509)	(387)	57
Accounts payable	408	24	148
Accrued income taxes (current and long-term)	134	967	101
Other — net	120	256	76
Net cash provided by (used in) operating activities	6,439	6,240	6,662
Cash Flows from Investing Activities			
Purchases of property, plant and equipment (PP&E)	(1,577)	(1,373)	(1,420)
Proceeds from sale of PP&E and other assets	262	49	58
Acquisitions, net of cash acquired	13	(2,023)	(16)
Purchases of marketable securities and investments	(1,828)	(2,152)	(1,410)
Proceeds from maturities and sale of marketable securities and investments	2,497	1,354	1,247
Proceeds from sale of businesses, net of cash sold	846	1,065	142
Other — net	9	(6)	(4)
Net cash provided by (used in) investing activities	222	(3,086)	(1,403)
Cash Flows from Financing Activities			
Change in short-term debt — net	(284)	578	(797)
Repayment of debt (maturities greater than 90 days)	(1,034)	(962)	(992)
Proceeds from debt (maturities greater than 90 days)	2,251	1,987	2,832
Purchases of treasury stock	(4,870)	(2,068)	(3,753)
Proceeds from issuance of treasury stock pursuant to stock option and benefit plans	485	734	804
Dividends paid to shareholders	(3,193)	(2,803)	(2,678)
Other — net	(56)	(121)	(42)
Net cash provided by (used in) financing activities	(6,701)	(2,655)	(4,626)

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Effect of exchange rate changes on cash and cash equivalents	(160)	156	(33)
Net increase (decrease) in cash and cash equivalents	(200)	655	600
Cash and cash equivalents at beginning of year	3,053	2,398	1,798
Cash and cash equivalents at end of period	\$ 2,853	\$ 3,053	\$ 2,398

The accompanying Notes to Consolidated Financial Statements are an integral part of this statement.

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Notes to Consolidated Financial Statements

NOTE 1. Significant Accounting Policies

Consolidation: 3M is a diversified global manufacturer, technology innovator and marketer of a wide variety of products. All subsidiaries are consolidated. All intercompany transactions are eliminated. As used herein, the term “3M” or “Company” refers to 3M Company and subsidiaries unless the context indicates otherwise.

Foreign currency translation: Local currencies generally are considered the functional currencies outside the United States. Assets and liabilities for operations in local-currency environments are translated at month-end exchange rates of the period reported. Income and expense items are translated at month-end exchange rates of each applicable month. Cumulative translation adjustments are recorded as a component of accumulated other comprehensive income (loss) in shareholders’ equity.

3M has a subsidiary in Venezuela, the financial statements of which are remeasured as if its functional currency were that of its parent because Venezuela’s economic environment is considered highly inflationary. The operating income of this subsidiary is immaterial as a percent of 3M’s consolidated operating income for 2018. The Venezuelan government sets official rates of exchange and conditions precedent to purchase foreign currency at these rates with local currency. The government has also operated various expanded secondary currency exchange mechanisms that have been eliminated and replaced from time to time. Such rates and conditions have been and continue to be subject to change. For the periods presented, the financial statements of 3M’s Venezuelan subsidiary were remeasured utilizing the rate associated with the secondary auction mechanism, Tipo de Cambio Complementario, which was redesigned by the Venezuelan government in June 2017 (DICOM), or its predecessor. During the same periods, the Venezuelan government’s official exchange was Tipo de Cambio Protegido (DIPRO), or its predecessor. During the third quarter of 2018, the Venezuelan government effected a conversion of its currency to the Sovereign Bolivar (VES), essentially equating to its previous Venezuelan Bolivar divided by 100,000. 3M’s uses of these rates were based upon evaluation of a number of factors including, but not limited to, the exchange rate the Company’s Venezuelan subsidiary may legally use to convert currency, settle transactions or pay dividends; the probability of accessing and obtaining currency by use of a particular rate or mechanism; and the Company’s intent and ability to use a particular exchange mechanism. The Company continues to monitor these circumstances. Changes in applicable exchange rates or exchange mechanisms may continue in the future. As of December 31, 2018, the Company had a balance of net monetary liabilities denominated in VES of approximately 30 million VES and the DICOM exchange rate was approximately 556 VES per U.S. dollar.

A need to deconsolidate the Company’s Venezuelan subsidiary’s operations may result from a lack of exchangeability of VEF-denominated cash coupled with an acute degradation in the ability to make key operational decisions due to government regulations in Venezuela. 3M monitors factors such as its ability to access various exchange mechanisms; the impact of government regulations on the Company’s ability to manage its Venezuelan subsidiary’s capital structure, purchasing, product pricing, and labor relations; and the current political and economic situation within Venezuela.

Based upon a review of factors as of December 31, 2018, the Company continues to consolidate its Venezuelan subsidiary. As of December 31, 2018, the balance of accumulated other comprehensive loss associated with this subsidiary was approximately \$145 million and the amount of intercompany receivables due from this subsidiary and its total equity balance were not significant.

3M has subsidiaries in Argentina, the operating income of which is less than one half of one percent of 3M's consolidated operating income for 2018. Based on various indices, Argentina's cumulative three-year inflation rate exceeded 100 percent in the second quarter of 2018, thus being considered highly inflationary. As a result, beginning in the third quarter of 2018, the financial statements of the Argentine subsidiaries were remeasured as if their functional currency were that of their parent. As of December 31, 2018, the Company had a balance of net monetary assets denominated in Argentine pesos (ARS) of approximately 230 million ARS and the exchange rate was approximately 38 ARS per U.S. dollar.

Use of estimates: The preparation of financial statements in conformity with U.S. generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and the disclosure of contingent assets and liabilities at the date of the financial statements, and the reported amounts of revenues and expenses during the reporting period. Actual results could differ from these estimates.

Cash and cash equivalents: Cash and cash equivalents consist of cash and temporary investments with maturities of three months or less when acquired.

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Marketable securities: Marketable securities include available-for-sale debt securities and are recorded at fair value. Cost of securities sold use the first in, first out (FIFO) method. The classification of marketable securities as current or non-current is based on the availability for use in current operations. 3M reviews impairments associated with its marketable securities in accordance with the measurement guidance provided by ASC 320, Investments-Debt and Equity Securities, when determining the classification of the impairment as “temporary” or “other-than-temporary”. A temporary impairment charge results in an unrealized loss being recorded in accumulated other comprehensive income as a component of shareholders’ equity. Such an unrealized loss does not reduce net income for the applicable accounting period because the loss is not viewed as other-than-temporary. The factors evaluated to differentiate between temporary and other-than-temporary include the projected future cash flows, credit ratings actions, and assessment of the credit quality of the underlying collateral, as well as other factors. Amounts are reclassified out of accumulated other comprehensive income and into earnings upon sale or “other-than-temporary” impairment.

Investments: As described in the “New Accounting Pronouncements” section, 3M adopted ASU No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities, effective January 1, 2018. As a result, all equity securities that do not result in consolidation and are not accounted for under the equity method are measured at fair value with changes therein reflected in net income. 3M utilizes the measurement alternative for equity investments that do not have readily determinable fair values and measures these investments at cost less impairment plus or minus observable price changes in orderly transactions. The balance of these securities is disclosed in Note 7.

Other assets: Other assets include deferred income taxes, product and other insurance receivables, the cash surrender value of life insurance policies, and other long-term assets. Investments in life insurance are reported at the amount that could be realized under contract at the balance sheet date, with any changes in cash surrender value or contract value during the period accounted for as an adjustment of premiums paid. Cash outflows and inflows associated with life insurance activity are included in “Purchases of marketable securities and investments” and “Proceeds from maturities and sale of marketable securities and investments,” respectively.

Inventories: Inventories are stated at the lower of cost or net realizable value (NRV), which is defined as estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation market. Cost is determined on a first-in, first-out basis.

Property, plant and equipment: Property, plant and equipment, including capitalized interest and internal direct engineering costs, are recorded at cost. Depreciation of property, plant and equipment generally is computed using the straight-line method based on the estimated useful lives of the assets. The estimated useful lives of buildings and improvements primarily range from ten to forty years, with the majority in the range of twenty to forty years. The estimated useful lives of machinery and equipment primarily range from three to fifteen years, with the majority in the range of five to ten years. Fully depreciated assets other than capitalized internally developed software are retained in property, plant and equipment and accumulated depreciation accounts until disposal. Upon disposal, assets and related accumulated depreciation are removed from the accounts and the net amount, less proceeds from disposal, is charged or credited to operations. Property, plant and equipment amounts are reviewed for impairment whenever events or

changes in circumstances indicate that the carrying amount of an asset (asset group) may not be recoverable. An impairment loss would be recognized when the carrying amount of an asset exceeds the estimated undiscounted future cash flows expected to result from the use of the asset and its eventual disposition. The amount of the impairment loss recorded is calculated by the excess of the asset's carrying value over its fair value. Fair value is generally determined using a discounted cash flow analysis.

Conditional asset retirement obligations: A liability is initially recorded at fair value for an asset retirement obligation associated with the retirement of tangible long-lived assets in the period in which it is incurred if a reasonable estimate of fair value can be made. Conditional asset retirement obligations exist for certain long-term assets of the Company. The obligation is initially measured at fair value using expected present value techniques. Over time the liabilities are accreted for the change in their present value and the initial capitalized costs are depreciated over the remaining useful lives of the related assets. The asset retirement obligation liability was \$122 million and \$106 million at December 31, 2018 and 2017, respectively.

Goodwill: Goodwill is the excess of cost of an acquired entity over the amounts assigned to assets acquired and liabilities assumed in a business combination. Goodwill is not amortized. Goodwill is tested for impairment annually in the fourth quarter of each year, and is tested for impairment between annual tests if an event occurs or circumstances change that would indicate the carrying amount may be impaired. Impairment testing for goodwill is done at a reporting unit level, with all goodwill assigned to a reporting unit. Reporting

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units are one level below the business segment level, but are required to be combined when reporting units within the same segment have similar economic characteristics. 3M did not combine any of its reporting units for impairment testing. The impairment loss is measured as the amount by which the carrying value of the reporting unit's net assets exceeds its estimated fair value, not to exceed the carrying value of the reporting unit's goodwill. The estimated fair value of a reporting unit is determined using earnings for the reporting unit multiplied by a price/earnings ratio for comparable industry groups or by using a discounted cash flow analysis. Companies have the option to first assess qualitative factors to determine whether the fair value of a reporting unit is not "more likely than not" less than its carrying amount, which is commonly referred to as "Step 0". 3M has chosen not to apply Step 0 for its annual goodwill assessments.

Intangible assets: Intangible asset types include customer related, patents, other technology-based, tradenames and other intangible assets acquired from an independent party. Intangible assets with a definite life are amortized over a period ranging from three to twenty years on a systematic and rational basis (generally straight line) that is representative of the asset's use. The estimated useful lives vary by category, with customer-related largely between ten to seventeen years, patents largely between four to thirteen years, other technology-based largely between five to fifteen years, definite lived tradenames largely between three and twenty years, and other intangibles largely between five to thirteen years. Intangible assets are removed from their respective gross asset and accumulated amortization accounts when they are no longer in use. Refer to Note 4 for additional details on the gross amount and accumulated amortization of the Company's intangible assets. Costs related to internally developed intangible assets, such as patents, are expensed as incurred, within "Research, development and related expenses."

Intangible assets with a definite life are tested for impairment whenever events or circumstances indicate that the carrying amount of an asset (asset group) may not be recoverable. An impairment loss is recognized when the carrying amount exceeds the estimated undiscounted cash flows from the asset's or asset group's ongoing use and eventual disposition. If an impairment is identified, the amount of the impairment loss recorded is calculated by the excess of the asset's carrying value over its fair value. Fair value is generally determined using a discounted cash flow analysis.

Intangible assets with an indefinite life, namely certain tradenames, are not amortized. Indefinite-lived intangible assets are tested for impairment annually, and are tested for impairment between annual tests if an event occurs or circumstances change that would indicate that the carrying amount may be impaired. An impairment loss would be recognized when the fair value is less than the carrying value of the indefinite-lived intangible asset.

Restructuring actions: Restructuring actions generally include significant actions involving employee-related severance charges, contract termination costs, and impairment or accelerated depreciation/amortization of assets associated with such actions. Employee-related severance charges are largely based upon distributed employment policies and substantive severance plans. These charges are reflected in the quarter when the actions are probable and the amounts are estimable, which typically is when management approves the associated actions. Severance amounts for which affected employees were required to render service in order to receive benefits at their termination dates were measured at the date such benefits were communicated to the applicable employees and recognized as expense over the employees' remaining service periods. Contract termination and other charges primarily reflect costs to terminate a contract before the end of its term (measured at fair value at the time the Company provided notice to the

counterparty) or costs that will continue to be incurred under the contract for its remaining term without economic benefit to the Company. Asset impairment charges related to intangible assets and property, plant and equipment reflect the excess of the assets' carrying values over their fair values.

Revenue (sales) recognition: 3M adopted ASU No. 2014-09, Revenue from Contracts with Customers, and other related ASUs (collectively, ASC 606, Revenue from Contracts with Customers) on January 1, 2018 using the modified retrospective transition approach. See additional disclosure relative to adoption of this ASU in Note 2.

The Company sells a wide range of products to a diversified base of customers around the world and has no material concentration of credit risk or significant payment terms extended to customers. The vast majority of 3M's customer arrangements contain a single performance obligation to transfer manufactured goods as the promise to transfer the individual goods is not separately identifiable from other promises in the contracts and, therefore, not distinct. However, to a limited extent 3M also enters into customer arrangements that involve intellectual property out-licensing, multiple performance obligations (such as equipment, installation and service), software with coterminous post-contract support, services and non-standard terms and conditions.

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Revenue is recognized when control of goods has transferred to customers. For the majority of the Company's customer arrangements, control transfers to customers at a point-in-time when goods/services have been delivered as that is generally when legal title, physical possession and risks and rewards of goods/services transfers to the customer. In limited arrangements, control transfers over time as the customer simultaneously receives and consumes the benefits as 3M completes the performance obligation(s).

Revenue is recognized at the transaction price which the Company expects to be entitled. When determining the transaction price, 3M estimates variable consideration applying the portfolio approach practical expedient under ASC 606. The main sources of variable consideration for 3M are customer rebates, trade promotion funds, and cash discounts. These sales incentives are recorded as a reduction to revenue at the time of the initial sale using the most-likely amount estimation method. The most-likely amount method is based on the single most likely outcome from a range of possible consideration outcomes. The range of possible consideration outcomes are primarily derived from the following inputs: sales terms, historical experience, trend analysis, and projected market conditions in the various markets served. Because 3M serves numerous markets, the sales incentive programs offered vary across businesses, but the most common incentive relates to amounts paid or credited to customers for achieving defined volume levels or growth objectives. There are no material instances where variable consideration is constrained and not recorded at the initial time of sale. Free goods are accounted for as an expense and recorded in cost of sales. Product returns are recorded as a reduction to revenue based on anticipated sales returns that occur in the normal course of business. 3M primarily has assurance-type warranties that do not result in separate performance obligations. Sales, use, value-added, and other excise taxes are not recognized in revenue. The Company has elected to present revenue net of sales taxes and other similar taxes.

For substantially all arrangements recognized over time, the Company applies the "right to invoice" practical expedient. As a result, 3M recognizes revenue at the invoice amount when the entity has a right to invoice a customer at an amount that corresponds directly with the value to the customer of the Company's performance completed to date.

For contracts with multiple performance obligations, the Company allocates the contract's transaction price to each performance obligation using 3M's best estimate of the standalone selling price of each distinct good or service in the contract.

The Company did not recognize any material revenue in the current reporting period for performance obligations that were fully satisfied in previous periods.

The Company does not have material unfulfilled performance obligation balances for contracts with an original length greater than one year in any years presented. Additionally, the Company does not have material costs related to obtaining a contract with amortization periods greater than one year for any year presented.

3M applies ASC 606 utilizing the following allowable exemptions or practical expedients:

- Exemption to not disclose the unfulfilled performance obligation balance for contracts with an original length of one year or less.
- Practical expedient relative to costs of obtaining a contract by expensing sales commissions when incurred because the amortization period would have been one year or less.
- Portfolio approach practical expedient relative to estimation of variable consideration.
- “Right to invoice” practical expedient based on 3M’s right to invoice the customer at an amount that reasonably represents the value to the customer of 3M’s performance completed to date.
- Election to present revenue net of sales taxes and other similar taxes.
- Sales-based royalty exemption permitting future intellectual property out-licensing royalty payments to be excluded from the otherwise required remaining performance obligations disclosure.

Accounts receivable and allowances: Trade accounts receivable are recorded at the invoiced amount and do not bear interest. The Company maintains allowances for bad debts, cash discounts, product returns and various other items. The allowance for doubtful accounts and product returns is based on the best estimate of the amount of probable credit losses in existing accounts receivable and anticipated sales returns. The Company determines the allowances based on historical write-off experience by industry and regional economic data and historical sales returns. The Company reviews the allowance for doubtful accounts monthly. The Company does not have any significant off-balance-sheet credit exposure related to its customers.

Advertising and merchandising: These costs are charged to operations in the period incurred, and totaled \$396 million in 2018, \$411 million in 2017 and \$385 million in 2016.

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Research, development and related expenses: These costs are charged to operations in the period incurred and are shown on a separate line of the Consolidated Statement of Income. Research, development and related expenses totaled \$1.821 billion in 2018, \$1.870 billion in 2017 and \$1.764 billion in 2016. Research and development expenses, covering basic scientific research and the application of scientific advances in the development of new and improved products and their uses, totaled \$1.253 billion in 2018, \$1.352 billion in 2017 and \$1.248 billion in 2016. Related expenses primarily include technical support; internally developed patent costs, which include costs and fees incurred to prepare, file, secure and maintain patents; amortization of externally acquired patents and externally acquired in-process research and development; and gains/losses associated with certain corporate approved investments in R&D-related ventures, such as equity method effects and impairments.

Internal-use software: The Company capitalizes direct costs of services used in the development of, and external software acquired for use as, internal-use software. Amounts capitalized are amortized over a period of three to seven years, generally on a straight-line basis, unless another systematic and rational basis is more representative of the software's use. Amounts are reported as a component of either machinery and equipment or capital leases within property, plant and equipment. Fully depreciated internal-use software assets are removed from property, plant and equipment and accumulated depreciation accounts.

Environmental: Environmental expenditures relating to existing conditions caused by past operations that do not contribute to current or future revenues are expensed. Reserves for liabilities related to anticipated remediation costs are recorded on an undiscounted basis when they are probable and reasonably estimable, generally no later than the completion of feasibility studies, the Company's commitment to a plan of action, or approval by regulatory agencies. Environmental expenditures for capital projects that contribute to current or future operations generally are capitalized and depreciated over their estimated useful lives.

Income taxes: The provision for income taxes is determined using the asset and liability approach. Under this approach, deferred income taxes represent the expected future tax consequences of temporary differences between the carrying amounts and tax basis of assets and liabilities. The Company records a valuation allowance to reduce its deferred tax assets when uncertainty regarding their realizability exists. As of December 31, 2018 and 2017, the Company had valuation allowances of \$67 million and \$81 million on its deferred tax assets, respectively. The Company recognizes and measures its uncertain tax positions based on the rules under ASC 740, Income Taxes.

Earnings per share: The difference in the weighted average 3M shares outstanding for calculating basic and diluted earnings per share attributable to 3M common shareholders is the result of the dilution associated with the Company's stock-based compensation plans. Certain options outstanding under these stock-based compensation plans during the years 2018, 2017 and 2016 were not included in the computation of diluted earnings per share attributable to 3M common shareholders because they would have had an anti-dilutive effect (2.9 million average options for 2018, 0.8 million average options for 2017, and 3.6 million average options for 2016). The computations for basic and diluted earnings per share for the years ended December 31 follow:

Earnings Per Share Computations

(Amounts in millions, except per share amounts)	2018	2017	2016
Numerator:			
Net income attributable to 3M	\$ 5,349	\$ 4,858	\$ 5,050
Denominator:			
Denominator for weighted average 3M common shares outstanding – basic	588.5	597.5	604.7
Dilution associated with the Company’s stock-based compensation plans	13.5	15.2	14.0
Denominator for weighted average 3M common shares outstanding – diluted	602.0	612.7	618.7
Earnings per share attributable to 3M common shareholders – basic	\$ 9.09	\$ 8.13	\$ 8.35
Earnings per share attributable to 3M common shareholders – diluted	\$ 8.89	\$ 7.93	\$ 8.16

Stock-based compensation: The Company recognizes compensation expense for its stock-based compensation programs, which include stock options, restricted stock, restricted stock units (RSUs), performance shares, and the General Employees’ Stock Purchase Plan (GESPP). Under applicable accounting standards, the fair value of share-based compensation is determined at the grant date and the recognition of the related expense is recorded over the period in which the share-based compensation vests. However, with respect

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to income taxes, the related deduction from taxes payable is based on the award's intrinsic value at the time of exercise (for an option) or on the fair value upon vesting of the award (for RSUs), which can be either greater (creating an excess tax benefit) or less (creating a tax deficiency) than the deferred tax benefit recognized as compensation cost is recognized in the financial statements. These excess tax benefits/deficiencies are recognized as income tax benefit/expense in the statement of income and, within the statement of cash flows, are classified in operating activities in the same manner as other cash flows related to income taxes. The extent of excess tax benefits/deficiencies is subject to variation in 3M stock price and timing/extent of RSU vestings and employee stock option exercises.

Comprehensive income: Total comprehensive income and the components of accumulated other comprehensive income (loss) are presented in the Consolidated Statement of Comprehensive Income and the Consolidated Statement of Changes in Equity. Accumulated other comprehensive income (loss) is composed of foreign currency translation effects (including hedges of net investments in international companies), defined benefit pension and postretirement plan adjustments, unrealized gains and losses on available-for-sale debt and equity securities, and unrealized gains and losses on cash flow hedging instruments.

Derivatives and hedging activities: All derivative instruments within the scope of ASC 815, Derivatives and Hedging, are recorded on the balance sheet at fair value. The Company uses interest rate swaps, currency and commodity price swaps, and foreign currency forward and option contracts to manage risks generally associated with foreign exchange rate, interest rate and commodity market volatility. All hedging instruments that qualify for hedge accounting are designated and effective as hedges, in accordance with U.S. generally accepted accounting principles. If the underlying hedged transaction ceases to exist, all changes in fair value of the related derivatives that have not been settled are recognized in current earnings. Instruments that do not qualify for hedge accounting are marked to market with changes recognized in current earnings. Cash flows from derivative instruments are classified in the statement of cash flows in the same category as the cash flows from the items subject to designated hedge or undesignated (economic) hedge relationships. The Company does not hold or issue derivative financial instruments for trading purposes and is not a party to leveraged derivatives.

Credit risk: The Company is exposed to credit loss in the event of nonperformance by counterparties in interest rate swaps, currency swaps, commodity price swaps, and forward and option contracts. However, the Company's risk is limited to the fair value of the instruments. The Company actively monitors its exposure to credit risk through the use of credit approvals and credit limits, and by selecting major international banks and financial institutions as counterparties. 3M enters into master netting arrangements with counterparties when possible to mitigate credit risk in derivative transactions. A master netting arrangement may allow each counterparty to net settle amounts owed between a 3M entity and the counterparty as a result of multiple, separate derivative transactions. The Company does not anticipate nonperformance by any of these counterparties. 3M has elected to present the fair value of derivative assets and liabilities within the Company's consolidated balance sheet on a gross basis even when derivative transactions are subject to master netting arrangements and may otherwise qualify for net presentation.

Fair value measurements: 3M follows ASC 820, Fair Value Measurements and Disclosures, with respect to assets and liabilities that are measured at fair value on a recurring basis and nonrecurring basis. Under the standard, fair value is

defined as the exit price, or the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants as of the measurement date. The standard also establishes a hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that the most observable inputs be used when available. Observable inputs are inputs market participants would use in valuing the asset or liability developed based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's assumptions about the factors market participants would use in valuing the asset or liability developed based upon the best information available in the circumstances. The hierarchy is broken down into three levels. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 2 inputs include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, and inputs (other than quoted prices) that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs for the asset or liability. Categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

Acquisitions: The Company accounts for business acquisitions in accordance with ASC 805, Business Combinations. This standard requires the acquiring entity in a business combination to recognize all (and only) the assets acquired and liabilities assumed in the transaction and establishes the acquisition-date fair value as the measurement objective for all assets acquired and liabilities assumed in a business combination. Certain provisions of this standard prescribe, among other things, the determination of acquisition-date fair value of consideration paid in a business combination (including contingent consideration) and the exclusion of transaction and acquisition-related restructuring costs from acquisition accounting.

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New Accounting Pronouncements

In May 2014, the Financial Accounting Standards Board (FASB) issued ASU No. 2014-09, Revenue from Contracts with Customers, and subsequently issued additional ASUs amending this ASU through 2017 (collectively, ASC 606, Revenue from Contracts with Customers). 3M adopted ASC 606 on January 1, 2018. The Company's revenue recognition policy under ASC 606 is described earlier in Note 1 and related additional disclosures are included in Note 2, Revenue. 3M adopted ASC 606 using the modified retrospective method of adoption. Prior periods have not been restated. Due to the cumulative net impact of adoption, the January 1, 2018 balance of retained earnings was increased by less than \$2 million, primarily relating to the accelerated recognition for software installation service and training revenue.

In January 2016, the FASB issued ASU No. 2016-01, Recognition and Measurement of Financial Assets and Financial Liabilities, which revises the accounting related to (1) the classification and measurement of investments in equity securities and (2) the presentation of certain fair value changes for financial liabilities measured at fair value. The ASU also amends certain disclosure requirements associated with the fair value of financial instruments. The new guidance requires the fair value measurement of investments in equity securities and other ownership interests in an entity, including investments in partnerships, unincorporated joint ventures and limited liability companies (collectively, equity securities) that do not result in consolidation and are not accounted for under the equity method. Entities will need to measure these investments and recognize changes in fair value in net income. Entities will no longer be able to recognize unrealized holding gains and losses on equity securities they classify under current guidance as available-for-sale in other comprehensive income (OCI). They also will no longer be able to use the cost method of accounting for equity securities that do not have readily determinable fair values. Instead, for these types of equity investments that do not otherwise qualify for the net asset value practical expedient, entities will be permitted to elect a practicability exception and measure the investment at cost less impairment plus or minus observable price changes (in orderly transactions). The ASU also establishes an incremental recognition and disclosure requirement related to the presentation of fair value changes of financial liabilities for which the fair value option (FVO) has been elected. Under this guidance, an entity would be required to separately present in OCI the portion of the total fair value change attributable to instrument-specific credit risk as opposed to reflecting the entire amount in earnings. This provision does not apply to derivative instruments required to be measured at fair value with changes in fair value recognized in current earnings. For 3M, this standard was effective beginning January 1, 2018 via an immaterial cumulative-effect adjustment to beginning retained earnings, except for guidance relative to equity securities without readily determinable fair values which is applied prospectively. The adoption did not have a material impact on 3M's consolidated results of operations and financial condition.

In February 2016, the FASB issued ASU No. 2016-02, Leases, and in July 2018, issued ASU No. 2018-10 and 2018-11 and in December 2018, issued ASU No. 2018-20, which amended the standard, replacing existing lease accounting guidance. The new standard introduces a lessee model that would require entities to recognize assets and liabilities for most leases, but recognize expenses on their income statements in a manner similar to current accounting. The ASU does not make fundamental changes to existing lessor accounting. However, it modifies what qualifies as a sales-type and direct financing lease and related accounting and aligns a number of the underlying principles with those of the new revenue standard, ASU No. 2014-09, such as evaluating how collectability should be

considered and determining when profit can be recognized. The guidance eliminates existing real estate-specific provisions and requires expanded qualitative and quantitative disclosures. For 3M, the ASU is effective January 1, 2019. As amended, the ASU provides for retrospective transition applied to earliest period presented or an adoption method by which entities would not need to recast the comparative periods presented. 3M does not plan on recasting prior periods as it adopts this ASU. 3M has conducted analyses, executed project management relative to the process of adopting this ASU including implementing a new lease accounting system, conducted detailed contract reviews, considered expanded disclosure requirements, and assessed internal controls impacts. Note 16 provides information regarding rent expense for operating leases and minimum lease payments for capital and operating leases under existing lease guidance. While 3M will provide expanded disclosures as a result of ASU No. 2016-02, it does not expect this standard to have a material impact on its consolidated results of operations. However, 3M expects to record approximately \$0.8 billion of lease assets and lease liabilities related to its operating leases and an immaterial adjustment to retained earnings related to transition upon this ASU's adoption in January 2019.

In June 2016, the FASB issued ASU No. 2016-13, Measurement of Credit Losses on Financial Instruments, which revises guidance for the accounting for credit losses on financial instruments within its scope, and in November 2018, issued ASU No. 2018-19, which amended the standard. The new standard introduces an approach, based on expected losses, to estimate credit losses on certain types of financial instruments and modifies the impairment model for available-for-sale debt securities. The new approach to estimating credit losses (referred to as the current expected credit losses model) applies to most financial assets measured at amortized cost and

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certain other instruments, including trade and other receivables, loans, held-to-maturity debt securities, net investments in leases and off-balance-sheet credit exposures. With respect to available-for-sale (AFS) debt securities, the ASU amends the current other-than-temporary impairment model. For such securities with unrealized losses, entities will still consider if a portion of any impairment is related only to credit losses and therefore recognized as a reduction in income. However, rather than also reflecting that credit loss amount as a permanent reduction in cost (amortized cost) basis of that AFS debt security, the ASU requires that credit losses be reflected as an allowance. As a result, under certain circumstances, a recovery in value could result in previous allowances, or portions thereof, reversing back into income. For 3M, this ASU is effective January 1, 2020, with early adoption permitted. Entities are required to apply the standard's provisions as a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is adopted. The Company is currently assessing this ASU's impact on 3M's consolidated result of operations and financial condition.

In October 2016, the FASB issued ASU No. 2016-16, Intra-Entity Transfers of Assets Other Than Inventory, which modifies existing guidance and is intended to reduce diversity in practice with respect to the accounting for the income tax consequences of intra-entity transfers of assets. The ASU indicates that the current exception to income tax accounting that requires companies to defer the income tax effects of certain intercompany transactions would apply only to intercompany inventory transactions. That is, the exception would no longer apply to intercompany sales and transfers of other assets (e.g., intangible assets). Under the existing exception, income tax expense associated with intra-entity profits in an intercompany sale or transfer of assets is eliminated from earnings. Instead, that cost is deferred and recorded on the balance sheet (e.g., as a prepaid asset) until the assets leave the consolidated group. Similarly, the entity is prohibited from recognizing deferred tax assets for the increases in tax bases due to the intercompany sale or transfer. For 3M, the ASU was effective January 1, 2018 using the modified retrospective method of adoption. Prior periods have not been restated and the January 1, 2018 balance of retained earnings was decreased by less than \$2 million.

In January 2017, the FASB issued ASU No. 2017-01, Clarifying the Definition of a Business, which narrows the existing definition of a business and provides a framework for evaluating whether a transaction should be accounted for as an acquisition (or disposal) of assets or a business. The ASU requires an entity to evaluate if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets; if so, the set of transferred assets and activities (collectively, the set) is not a business. To be considered a business, the set would need to include an input and a substantive process that together significantly contribute to the ability to create outputs. The standard also narrows the definition of outputs. The definition of a business affects areas of accounting such as acquisitions, disposals and goodwill. Under the new guidance, fewer acquired sets are expected to be considered businesses. For 3M, this ASU was effective January 1, 2018 on a prospective basis and the Company will apply this guidance to applicable transactions after the adoption date.

In February 2017, the FASB issued ASU No. 2017-05, Clarifying the Scope of Asset Derecognition Guidance and Accounting for Partial Sales of Nonfinancial Assets. This ASU addresses scope-related questions that arose after the FASB issued its revenue guidance in ASU No. 2014-09, Revenue from Contracts with Customers. The new standard clarifies the accounting for derecognition of nonfinancial assets and defines what is considered an in substance nonfinancial asset. Nonfinancial assets largely relate to items such as real estate, ships and intellectual property that do not constitute a business. The new ASU impacts entities derecognizing (e.g. selling) nonfinancial assets (or in substance nonfinancial assets), including partial interests therein, when the purchaser is not a customer. Under the new

guidance, the seller would apply certain recognition and measurement principles of ASU No. 2014-09, Revenue from Contracts with Customers, even though the purchaser is not a customer. For 3M, this new standard was effective coincident with the Company's January 1, 2018 adoption of ASU No. 2014-09.

In March 2017, the FASB issued ASU No. 2017-07, Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost. This ASU changes how employers that sponsor defined benefit pension and/or other postretirement benefit plans present the net periodic benefit cost in the income statement. Under the new standard, only the service cost component of net periodic benefit cost would be included in operating expenses and only the service cost component would be eligible for capitalization into assets such as inventory. All other net periodic benefit costs components (such as interest, expected return on plan assets, prior service cost amortization and actuarial gain/loss amortization) would be reported outside of operating income. 3M adopted this ASU is effective January 1, 2018 on a retrospective basis; however, guidance limiting the capitalization to only the service cost component is applied on prospective basis. The Company previously filed a Current Report on Form 8-K dated May 8, 2018 (which updated 3M's 2017 Annual Report on Form 10-K) that provided prior period information reflecting the retrospective adoption of this ASU. The adoption had no impact on previously reported income before income taxes and net income attributable to 3M. However, non-service cost components of net periodic benefit costs in prior periods were reclassified from operating expenses

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and are now reported outside of operating income within other expense (income), net. The financial information herein reflects these impacts for all periods presented. The prospective impact on costs capitalized into assets was not material.

In March 2017, the FASB issued ASU No. 2017-08, Premium Amortization on Purchased Callable Debt Securities, which amends the amortization period for certain purchased callable debt securities held at a premium. Under existing standards, entities generally amortize the premium as an adjustment of yield over the contractual life of the instrument. The new guidance shortens the amortization period to the earliest call date for certain callable debt securities that have explicit, noncontingent call features and are callable at a fixed price and preset date. The amendments do not require an accounting change for securities held at a discount. For 3M, this ASU is effective January 1, 2019 with a modified retrospective transition resulting in a cumulative-effect adjustment to retained earnings as of the beginning of the first reporting period in which the guidance is adopted. 3M's marketable security portfolio includes very limited instances of callable debt securities held at a premium. As a result, the Company does not expect this ASU to have a material impact on 3M's consolidated results of operations and financial condition.

In May 2017, the FASB issued ASU No. 2017-09, Scope of Modification Accounting, that clarifies when changes to the terms or conditions of a share-based payment award must be accounted for as a modification. The general model for accounting for modifications of share-based payment awards is to record the incremental value arising from the changes as additional compensation cost. Under the new standard, fewer changes to the terms of an award would require accounting under this modification model. For 3M, this ASU was effective January 1, 2018. Because the Company does not typically make changes to the terms or conditions of its issued share-based payment awards, the adoption of this ASU had no material impact on its consolidated results of operations and financial condition.

In May 2017, the FASB issued ASU No. 2017-10, Determining the Customer of the Operation Services, that clarifies how an operating entity determines the customer of the operation services for transactions within the scope of a service concession arrangement. Service concession arrangements are typically agreements between a grantor and an operating entity whereby the operating entity will operate the grantor's infrastructure (i.e. airports, roadways, bridges, and prisons) for a specified period of time. The operating entity also may be required to maintain the infrastructure and provide capital-intensive maintenance to enhance or extend its life. In such arrangements, typically the operation services (i.e. operation and maintenance of a roadway) would be used by third parties (i.e. drivers). The ASU clarifies that the grantor, not the third party, is the customer of the operation services in such arrangements. For 3M, this new standard was effective coincident with the Company's January 1, 2018 adoption of ASU No. 2014-09. Because the Company is not typically a party to agreements within the scope of accounting for service concession arrangements, the adoption of this ASU had no material impact on its consolidated results of operations and financial condition.

In July 2017, the FASB issued ASU No. 2017-11, (Part I) Accounting for Certain Financial Instruments with Down Round Features, (Part II) Replacement of the Indefinite Deferral for Mandatorily Redeemable Financial Instruments of Certain Nonpublic Entities and Certain Mandatorily Redeemable Noncontrolling Interests with a Scope Exception. The new standard applies to issuers of financial instruments with down-round features. A down-round provision is a term in an equity-linked financial instrument (i.e. a freestanding warrant contract or an equity conversion feature embedded within a host debt or equity contract) that triggers a downward adjustment to the instrument's strike price

(or conversion price) if equity shares are issued at a lower price (or equity-linked financial instruments are issued at a lower strike price) than the instrument's then-current strike price. The purpose of the feature is typically to protect the instrument's counterparty from future issuances of equity shares at a more favorable price. The ASU amends (1) the classification of such instruments as liabilities or equity by revising the certain guidance relative to evaluating if they must be accounted for as derivative instruments and (2) the guidance on recognition and measurement of freestanding equity-classified instruments. For 3M, this ASU is effective January 1, 2019, with early adoption permitted. Because the Company has not issued financial instruments with down-round features, 3M does not expect this ASU to have a material impact on its consolidated results of operations and financial condition.

In August 2017, the FASB issued ASU No. 2017-12, Targeted Improvements to Accounting for Hedging Activities and in October 2018, issued ASU No. 2018-16, which amended the standard. The ASU amends existing guidance to simplify the application of hedge accounting in certain situations and allow companies to better align their hedge accounting with their risk management activities. Existing standards contain certain requirements for an instrument to qualify for hedge accounting relative to initial and ongoing assessments of hedge effectiveness. While an initial quantitative test to establish the hedge relationship is highly effective would still be required, the new ASU permits subsequent qualitative assessments for certain hedges instead of a quantitative test and expands the timeline for performing the initial quantitative assessment. The ASU also simplifies related accounting by eliminating the requirement to separately measure and report hedge ineffectiveness. Instead, for qualifying cash flow and net investment hedges, the entire change

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in fair value (including the amount attributable to ineffectiveness) will be recorded within other comprehensive income and reclassified to earnings in the same income statement line that is used to present the earnings effect of the hedged item when the hedged item affects earnings. For fair value hedges, generally, the entire change in fair value of the hedging instrument would also be presented in the same income statement line as the hedged item. The new standard also simplifies the accounting for fair value hedges of interest rate risks and expands an entity's ability to hedge nonfinancial and financial risk components. In addition, the guidance also eases certain documentation requirements, modifies the accounting for components excluded from the assessment of hedge effectiveness, and requires additional tabular disclosures of derivative and hedge-related information. For 3M, this ASU is effective January 1, 2019, with a modified retrospective transition resulting in a cumulative-effect adjustment recorded to the opening balance of retained earnings as of the adoption date. The Company does not expect this ASU to have a material impact on 3M's consolidated results of operations and financial condition.

In February 2018, the FASB issued ASU No. 2018-02, Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income, which permits entities to reclassify, to retained earnings, the one-time income tax effects stranded in accumulated other comprehensive income (AOCI) arising from the change in the U.S. federal corporate tax rate as a result of the Tax Cuts and Jobs Act of 2017. An entity that elects to make this reclassification must consider all items in AOCI that have tax effects stranded as a result of the tax rate change, and must disclose the reclassification of these tax effects as well as the entity's policy for releasing income tax effects from AOCI. The ASU may be applied either retrospectively or as of the beginning of the period of adoption. For 3M, this ASU will be adopted effective January 1, 2019 and will result in a reclassification between retained earnings and AOCI. The Company estimates that the impact from this ASU will increase retained earnings by approximately \$0.9 billion, with an offsetting increase to accumulated other comprehensive loss for the same amount.

In June 2018, the FASB issued ASU No. 2018-07, Improvements to Nonemployee Share-Based Payment Accounting, which largely aligns the measurement and classification guidance for share-based payments to nonemployees with the guidance for share-based payments to employees. The ASU also clarifies that any share-based payment issued to a customer should be evaluated under ASC 606, Revenue from Contracts with Customers. The ASU requires a modified retrospective transition approach. For 3M, the ASU is effective as of January 1, 2019. Because the Company does not grant share-based payments to nonemployees or customers, this ASU will not have a material impact on its consolidated results of operations and financial condition.

In June 2018, the FASB issued ASU No. 2018-08, Clarifying the Scope and the Accounting Guidance for Contributions Received and Contributions Made. The ASU applies to entities that receive or make contributions, which primarily are not-for-profit entities but also affects business entities that make contributions. In the context of business entities that make contributions, the FASB clarified that a contribution is conditional if the arrangement includes both a barrier for the recipient to be entitled to the assets transferred and a right of return for the assets transferred (or a right of release of the business entity's obligation to transfer assets). The recognition of contribution expense is deferred for conditional arrangements and is immediate for unconditional arrangements. The ASU requires modified prospective transition to arrangements that have not been completed as of the effective date or that are entered into after the effective date, but full retrospective application to each period presented is permitted. For 3M, the ASU is effective as of January 1, 2019. The Company does not expect this ASU to have a material impact on its consolidated results of operations and financial condition.

In July 2018, the FASB issued ASU No. 2018-10, Codification Improvements to Topic 842, Leases, which amends

ASU No. 2016-02, Leases. The new ASU includes certain clarifications to address potential narrow-scope implementation issues which the Company is incorporating into its assessment and adoption of ASU No. 2016-02. This ASU has the same transition requirements and effective date as ASU No. 2016-02, which for 3M is January 1, 2019.

In July 2018, the FASB issued ASU No. 2018-11, Leases (Topic 842): Targeted Improvements, which amends ASU No. 2016-02, Leases. The new ASU offers an additional transition method by which entities may elect not to recast the comparative periods presented in financial statements in the period of adoption and allows lessors to elect a practical expedient to not separate lease and nonlease components when certain conditions are met. This ASU has the same transition requirements and effective date as ASU No. 2016-02, which for 3M is January 1, 2019.

In August 2018, the FASB issued ASU No. 2018-13, Changes to the Disclosure Requirements for Fair Value Measurement, which eliminates, amends, and adds disclosure requirements for fair value measurements. The amended and new disclosure requirements primarily relate to Level 3 fair value measurements. For 3M, the ASU is effective as of January 1, 2020. The removal and amendment of certain disclosures may be early adopted with retrospective application while the new disclosure requirements are to be applied

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prospectively. As this ASU relates only to disclosures, there will be no impact to the Company's consolidated results of operations and financial condition.

In August 2018, the FASB issued ASU No. 2018-14, Changes to the Disclosure Requirements for Defined Benefit Plans, which makes minor changes to the disclosure requirements related to defined benefit pension and other postretirement plans. The ASU requires a retrospective transition approach. The Company elected to early adopt this ASU in the fourth quarter 2018 on a retrospective basis. As this ASU relates only to disclosures, there was no impact to the Company's consolidated results of operations and financial condition.

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 aligns the accounting for implementation costs incurred in a cloud computing arrangement that is a service arrangement (i.e. hosting arrangement) with the guidance on capitalizing costs in ASC 350-40, Internal-Use Software. The ASU permits either a prospective or retrospective transition approach. For 3M, the ASU is effective as of January 1, 2020. The Company is currently assessing this standard's impact on its consolidated results of operations and financial condition.

In October 2018, the FASB issued ASU No. 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 adds the OIS rate based on the SOFR to the list of US benchmark interest rates in ASC 815 that are eligible to be hedged. This ASU has the same transition requirements and effective date as ASU No. 2017-12, which for 3M is January 1, 2019. The Company does not expect this ASU to have a material impact on its consolidated results of operations and financial condition.

In October 2018, the FASB issued ASU No. 2018-17, Targeted Improvements to Related Party Guidance for Variable Interest Entities, which changes how entities evaluate decision-making fees under the variable interest guidance. Entities will consider indirect interests held through related parties under common control on a proportionate basis rather than in their entirety. For 3M, the ASU is effective as of January 1, 2020. 3M does not have significant involvement with entities subject to consolidation considerations impacted by variable interest entity model factors. As a result, the Company does not expect this ASU to have a material impact on its consolidated results of operations and financial condition.

In November 2018, the FASB issued ASU No. 2018-18, Clarifying the Interaction between Topic 808 and Topic 606, which clarifies that certain transactions between participants in a collaborative arrangement should be accounted for under ASC 606 when the counterparty is a customer. The ASU precludes an entity from presenting consideration from a transaction in a collaborative arrangement as revenue from contracts with customers if the counterparty is not a customer for that transaction. Further, the ASU amends ASC 808 to refer to the unit-of-account guidance in ASC 606 and requires it to be used only when assessing whether a transaction is in the scope of ASC 606. For 3M, the ASU is effective as of January 1, 2020. 3M has limited collaborative arrangements. As a result, the Company does not expect this ASU to have a material impact on its consolidated results of operations and financial condition.

In November 2018, the FASB issued ASU No. 2018-19, Codification Improvements to Topic 326, Financial Instruments, which clarifies that receivables arising from operating leases are not within the scope of the credit losses standard, but rather, should be accounted for in accordance with the lease standard. This ASU has the same transition requirements and effective date as ASU No. 2016-13, which for 3M is January 1, 2020. The Company does not expect this ASU to have a material impact on its consolidated results of operations and financial condition.

In December 2018, the FASB issued ASU No. 2018-20, Narrow-Scope Improvements for Lessors, which amends ASU No. 2016-02, Leases. The new ASU provides narrow-scope amendments to help lessors apply the new leases standard. This ASU has the same transition requirements and effective date as ASU No. 2016-02, which for 3M is January 1, 2019. The Company does not expect this ASU to have a material impact on its consolidated results of operations and financial condition.

Note 2. Revenue

The Company adopted ASU No. 2014-09 and related standards (collectively, ASC 606, Revenue from Contracts with Customers), on January 1, 2018 using the modified retrospective method of adoption. Prior periods have not been restated. Due to the cumulative net impact of adopting ASC 606, the January 1, 2018 balance of retained earnings was increased by less than \$2 million, primarily

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relating to the accelerated recognition for software installation service and training revenue. This cumulative impact reflects retrospective application of ASC 606 only to contracts that were not completed as of January 1, 2018. Further, the Company applied the practical expedient permitting the effect of all contract modifications that occurred before January 1, 2018 to be aggregated in the transition accounting. The impact of applying ASC 606 as compared with previous guidance applied to revenues and costs was not material for the year ended December 31, 2018.

Contract Balances:

Deferred revenue (current portion) as of December 31, 2018 and December 31, 2017 was \$617 million and \$513 million, respectively, and primarily relates to revenue that is recognized over time for one-year software license contracts, the changes in balance of which are related to the satisfaction or partial satisfaction of these contracts. The balance also contains a deferral for goods that are in-transit at period end for which control transfers to the customer upon delivery. Approximately \$500 million of the December 31, 2017 balance was recognized as revenue during the year ended December 31, 2018. The amount of noncurrent deferred revenue is not significant.

Disaggregated revenue information:

The Company views the following disaggregated disclosures as useful to understanding the composition of revenue recognized during the respective reporting periods:

Net Sales (Millions)	Year ended		
	December 31,		
	2018	2017	2016
Abrasives	\$ 1,804	\$ 1,746	\$ 1,626
Adhesives and Tapes	4,607	4,468	4,239
Advanced Materials	1,239	1,124	1,039
Automotive and Aerospace	2,063	1,994	1,871
Automotive Aftermarket	1,642	1,645	1,590
Separation and Purification	913	886	859
Other Industrial	(1)	3	(7)
Total Industrial Business Group	\$ 12,267	\$ 11,866	\$ 11,217
Commercial Solutions	\$ 1,842	\$ 1,759	\$ 1,751
Personal Safety	3,681	3,012	2,597
Roofing Granules	353	372	344
Transportation Safety	950	1,091	1,259
Other Safety and Graphics	1	1	(3)
Total Safety and Graphics Business Group	\$ 6,827	\$ 6,235	\$ 5,948
Drug Delivery	\$ 444	\$ 486	\$ 451
Food Safety	332	306	280
Health Information Systems	837	791	780

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Medical Solutions	3,049	2,947	2,824
Oral Care	1,353	1,322	1,274
Other Health Care	6	1	(3)
Total Health Care Business Group	\$ 6,021	\$ 5,853	\$ 5,606
Electronics	\$ 3,974	\$ 3,850	\$ 3,304
Energy	1,487	1,645	1,616
Other Electronics and Energy	11	6	6
Total Electronics and Energy Business Group	\$ 5,472	\$ 5,501	\$ 4,926
Consumer Health Care	\$ 389	\$ 421	\$ 382
Home Care	1,012	1,028	1,000
Home Improvement	1,961	1,858	1,723
Stationery and Office	1,383	1,377	1,435
Other Consumer	51	47	38
Total Consumer Business Group	\$ 4,796	\$ 4,731	\$ 4,578
Corporate and Unallocated	\$ 50	\$ 3	\$ 6
Elimination of Dual Credit	(2,668)	(2,532)	(2,172)
Total Company	\$ 32,765	\$ 31,657	\$ 30,109

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Year ended December 31, 2018

	United States	Asia Pacific	Europe, Middle East and Africa	Latin America and Canada	Other Unallocated	Worldwide
Net Sales (Millions)						
Industrial	\$ 4,538	\$ 3,554	\$ 2,939	\$ 1,238	\$ (2)	\$ 12,267
Safety and Graphics	2,699	1,688	1,658	784	(2)	6,827
Health Care	2,830	1,148	1,488	556	(1)	6,021
Electronics and Energy	900	3,866	462	245	(1)	5,472
Consumer	2,868	961	535	432	—	4,796
Corporate and Unallocated	47	—	—	3	—	50
Elimination of Dual Credit	(1,042)	(963)	(428)	(234)	(1)	(2,668)
Total Company	\$ 12,840	\$ 10,254	\$ 6,654	\$ 3,024	\$ (7)	\$ 32,765

Year ended December 31, 2017

	United States	Asia Pacific	Europe, Middle East and Africa	Latin America and Canada	Other Unallocated	Worldwide
Net Sales (Millions)						
Industrial	\$ 4,382	\$ 3,405	\$ 2,822	\$ 1,261	\$ (4)	\$ 11,866
Safety and Graphics	2,427	1,578	1,468	765	(3)	6,235
Health Care	2,835	1,041	1,433	546	(2)	5,853
Electronics and Energy	929	3,731	571	273	(3)	5,501
Consumer	2,767	983	547	436	(2)	4,731
Corporate and Unallocated	6	—	1	(5)	1	3
Elimination of Dual Credit	(974)	(929)	(386)	(243)	—	(2,532)
Total Company	\$ 12,372	\$ 9,809	\$ 6,456	\$ 3,033	\$ (13)	\$ 31,657

Year ended December 31, 2016

	United States	Asia Pacific	Europe, Middle East and Africa	Latin America and Canada	Other Unallocated	Worldwide
Net Sales (Millions)						
Industrial	\$ 4,251	\$ 3,133	\$ 2,649	\$ 1,181	\$ 3	\$ 11,217
Safety and Graphics	2,397	1,434	1,355	760	2	5,948
Health Care	2,733	959	1,412	500	2	5,606
Electronics and Energy	918	3,183	559	264	2	4,926
Consumer	2,761	874	535	407	1	4,578
Corporate and Unallocated	6	—	1	(1)	—	6
Elimination of Dual Credit	(878)	(736)	(348)	(210)	—	(2,172)
Total Company	\$ 12,188	\$ 8,847	\$ 6,163	\$ 2,901	\$ 10	\$ 30,109

NOTE 3. Acquisitions and Divestitures

Acquisitions:

3M makes acquisitions of certain businesses from time to time that are aligned with its strategic intent with respect to, among other factors, growth markets and adjacent product lines or technologies. Goodwill resulting from business combinations is largely attributable to the existing workforce of the acquired businesses and synergies expected to arise after 3M's acquisition of these businesses.

In addition to business combinations, 3M periodically acquires certain tangible and/or intangible assets and purchases interests in certain enterprises that do not otherwise qualify for accounting as business combinations. These transactions are largely reflected as additional asset purchase and investment activity.

There were no acquisitions that closed during 2018.

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In February 2019, 3M completed the acquisition of the technology business of M*Modal for cash of approximately \$0.7 billion, subject to closing and other adjustments, and assumption of approximately \$0.3 billion of M*Modal's debt. Based in Pittsburgh, Pennsylvania, M*Modal is a leading healthcare technology provider of cloud-based, conversational artificial intelligence-powered systems that help physicians efficiently capture and improve the patient narrative. The transaction will be reflected within the Company's Health Care business.

2017 acquisitions:

In September 2017, 3M purchased all of the ownership interests of Elution Technologies, LLC, a Vermont-based manufacturer of test kits that help enable food and beverage companies ensure their products are free from certain potentially harmful allergens such as peanuts, soy or milk. Elution is reported within the Company's Health Care business.

In October 2017, 3M completed the acquisition of the underlying legal entities and associated assets of Scott Safety, which is headquartered in Monroe, North Carolina, from Johnson Controls for \$2.0 billion of cash, net of cash acquired. Scott Safety is a premier manufacturer of innovative products, including self-contained breathing apparatus systems, gas and flame detection instruments, and other safety devices that complement 3M's personal safety portfolio. The business had revenues of approximately \$570 million in 2016. Scott Safety is reported within 3M's Safety and Graphics business. Adjustments in 2018 to the purchase price allocation were approximately \$7 million and related to identification of certain immaterial acquired assets, tax-related and contingent liabilities, and resolution of certain acquired working capital and other purchase price adjustments with the seller. The change to provisional amounts did not result in material impacts to results of operations in 2018 or any portion related to earlier quarters in the measurement period. The allocation of purchase consideration related to Scott Safety was completed in the third quarter of 2018.

Pro forma information related to acquisitions has not been included because the impact on the Company's consolidated results of operations was not considered material. The following table shows the impact on the consolidated balance sheet of the purchase price allocations related to 2017 acquisitions and assigned finite-lived intangible asset weighted-average lives.

(Millions)	2017 Acquisition Activity			Finite-Lived Intangible-Asset Weighted-Average Lives (Years)
	Scott Safety	Other	Total	
Asset (Liability)				
Accounts receivable	\$ 100	\$ —	\$ 100	
Inventory	79	—	79	
Other current assets	10	—	10	

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Property, plant, and equipment	74	—	74	
Purchased finite-lived intangible assets:				
Customer related intangible assets	439	3	442	15
Other technology-based intangible assets	125	2	127	10
Definite-lived tradenames	285	—	285	17
Other amortizable intangible assets	—	1	1	5
Purchased goodwill	1,296	6	1,302	
Accounts payable and other liabilities	(100)	—	(100)	
Deferred tax asset/(liability)	(297)	—	(297)	
Net assets acquired	\$ 2,011	\$ 12	\$ 2,023	
Supplemental information:				
Cash paid	\$ 2,020	\$ 12	\$ 2,032	
Less: Cash acquired	9	—	9	
Cash paid, net of cash acquired	\$ 2,011	\$ 12	\$ 2,023	

Purchased identifiable finite-lived intangible assets related to acquisition activity in 2017 totaled \$855 million. The associated finite-lived intangible assets acquired in 2017 are amortized on a systematic and rational basis (generally straight line) over a weighted-average life of 15 years (lives ranging from four to 17 years). Acquired in-process research and development and identifiable intangible assets for which significant assumed renewals or extensions of underlying arrangements impacted the determination of their useful lives were not material.

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2016 acquisitions:

In September 2016, 3M acquired all of the outstanding shares of Semfinder, headquartered in Kreuzlingen, Switzerland. Semfinder is a leading developer of precision software that enables efficient coding of medical procedures in multiple languages. The purchase price paid for these business combinations (net of cash acquired) during 2016 aggregated to \$16 million. Semfinder is reported within 3M's Health Care business.

Adjustments in 2016 to the preliminary purchase price allocations of other acquisitions within the allocation period primarily related to the identification of contingent liabilities and certain tax-related items aggregating to approximately \$35 million along with other balances related to the 2015 acquisition of Capital Safety Group S.A.R.L. The change to provisional amounts resulted in an immaterial impact to the results of operations in the third quarter of 2016, a portion of which related to earlier quarters in the measurement period.

Purchased identifiable finite-lived intangible assets related to acquisition activity in 2016 totaled \$4 million. The associated finite-lived intangible assets acquired in 2016 will be amortized on a systematic and rational basis (generally straight line) over a weighted-average life of 8 years (lives ranging from two to 20 years). Acquired in-process research and development and identifiable intangible assets for which significant assumed renewals or extensions of underlying arrangements impacted the determination of their useful lives were not material.

Divestitures:

3M may divest certain businesses from time to time based upon review of the Company's portfolio considering, among other items, factors relative to the extent of strategic and technological alignment and optimization of capital deployment, in addition to considering if selling the businesses results in the greatest value creation for the Company and for shareholders.

2018 divestitures:

In February 2018, 3M closed on the sale of certain personal safety product offerings primarily focused on noise, environmental, and heat stress monitoring to TSI, Inc. This business has annual sales of approximately \$15 million. The transaction resulted in a pre-tax gain of less than \$20 million that was reported within the Company's Safety and Graphics business. In addition, during the first quarter of 2018, 3M divested a polymer additives compounding business, formerly part of the Company's Industrial business, and reflected a gain on final closing adjustments from a prior divestiture which, in aggregate, were not material. In May 2018, 3M divested an abrasives glass products business, formerly part of the Company's Industrial business, with annual sales of approximately \$10 million. The transaction resulted in a pre-tax gain of less than \$15 million. The Company also reflected an immaterial gain in the fourth quarter from an earnout on a previous divestiture.

In June 2018, 3M completed the sale of substantially all of its Communication Markets Division to Corning Incorporated. This business, with annual sales of approximately \$400 million, consists of optical fiber and copper passive connectivity solutions for the telecommunications industry including 3M's xDSL, FTTx, and structured cabling solutions and, in certain countries, telecommunications system integration services. 3M received cash proceeds of \$772 million and reflected a pre-tax gain of \$494 million as a result of this divestiture. In December 2018, the Company completed the sale of the remaining telecommunications system integration services portion of the business based in Germany, resulting in a pre-tax gain of \$15 million. Both the June 2018 and December 2018 divestiture impacts were reported within the Company's Electronics and Energy business.

2017 divestitures:

In January 2017, 3M sold the assets of its safety prescription eyewear business, with annual sales of approximately \$45 million, to HOYA Vision Care. The Company recorded a pre-tax gain of \$29 million in the first quarter of 2017 as a result of this sale, which was reported within the Company's Safety and Graphics business.

In May 2017, 3M completed the related sale or transfer of control, as applicable, of its identity management business to Gemalto N.V. This business, with 2016 sales of approximately \$205 million, is a leading provider in identity management solutions, including biometric hardware and software that enable identity verification and authentication, as well as secure materials and document readers. In June 2017, 3M also completed the sale of its tolling and automated license/number plate recognition business, with annual sales of approximately \$40 million, to Neology, Inc. 3M's tolling and automated license/number plate recognition business includes RFID readers and tags, automatic vehicle classification systems, lane controller and host software, and back office software and services. It also provides mobile and fixed cameras, software, and services in automated license/number plate recognition. 3M received proceeds

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of \$833 million, or \$809 million net of cash sold, and reflected a pre-tax gain of \$458 million as a result of these two divestitures, which was reported within the Company's Safety and Graphics business.

In October 2017, 3M sold its electronic monitoring business to an affiliate of Apax Partners. This business, with annual sales of approximately \$95 million, is a provider of electronic monitoring technologies, serving hundreds of correctional and law enforcement agencies around the world. 3M received proceeds of \$201 million, net of cash sold, and reflected a pre-tax gain of \$98 million in the fourth quarter of 2017 as a result of this divestiture, which was reported within the Company's Safety and Graphics business.

In the fourth quarter of 2017, 3M sold the assets of an electrical marking/labeling business within its Electronics and Energy business. The former activity, proceeds and gain were not considered material.

2016 divestitures:

In the first quarter of 2016, 3M completed the sale of the remainder of the assets of 3M's library systems business to One Equity Partners Capital Advisors L.P. (OEP). 3M had previously sold the North American business and the majority of the business outside of North America to OEP in the fourth quarter of 2015 which was reported within 3M's Safety and Graphics business. Also in the first quarter of 2016, 3M sold to Innovative Chemical Products Group, a portfolio company of Audax Private Equity, the assets of 3M's pressurized polyurethane foam adhesives business (formerly known as Polyfoam). This business is a provider of pressurized polyurethane foam adhesive formulations and systems into the residential roofing, commercial roofing and insulation and industrial foam segments in the United States with annual sales of approximately \$20 million and was reported within 3M's Industrial business. The Company recorded a pre-tax gain of \$40 million in the first quarter of 2016 as a result of the sales of these businesses.

In October 2016, 3M sold the assets of its temporary protective films business to Pregis LLC. This business, with annual sales of approximately \$50 million, is a provider of adhesive-backed temporary protective films used in a broad range of industries and was reported within 3M's Industrial business. In December 2016, 3M sold the assets of its cathode battery technology out-licensing business, with annual sales of approximately \$10 million, to UMICORE. This business was reported within 3M's Electronics and Energy business. The aggregate selling price relative to these two businesses was \$86 million. The Company recorded a pre-tax gain of \$71 million in the fourth quarter of 2016 as a result of the sales of these businesses.

Operating income and held for sale amounts

The aggregate operating income of these businesses was approximately \$25 million, \$40 million, and \$50 million in 2018, 2017, and 2016, respectively. The approximate amounts of major assets and liabilities associated with disposal groups classified as held-for-sale as of December 31, 2018 were not material. The amounts as of December 31, 2017, included the following:

(Millions)	December 31, 2017
Accounts receivable	\$ 25
Property, plant and equipment (net)	20

In addition, approximately \$275 million of goodwill was estimated to be attributable to disposal groups classified as held-for-sale as of December 31, 2017, based upon relative fair value. The amounts above have not been segregated and are classified within the existing corresponding line items on the Company's consolidated balance sheet.

NOTE 4. Goodwill and Intangible Assets

There were no acquisitions that closed during 2018. Purchased goodwill from acquisitions totaled \$1.3 billion in 2017, none of which is deductible for tax purposes. The acquisition activity in the following table also includes the net impact of adjustments to the preliminary allocation of purchase price within the one year measurement-period following prior acquisitions, which increased goodwill by \$7 million during 2018. The amounts in the "Translation and other" column in the following table primarily relate to changes in foreign currency exchange rates. The goodwill balance by business segment follows:

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Goodwill

(Millions)	Industrial	Safety and Graphics	Health Care	Electronics and Energy	Consumer	Total Company
Balance as of December 31, 2016	\$ 2,536	\$ 3,324	\$ 1,609	\$ 1,489	\$ 208	\$ 9,166
Acquisition activity	—	1,296	6	—	—	1,302
Divestiture activity	—	(323)	—	—	—	(323)
Translation and other	142	122	67	35	2	368
Balance as of December 31, 2017	2,678	4,419	1,682	1,524	210	10,513
Acquisition activity	—	7	—	—	—	7
Divestiture activity	(4)	(8)	—	(260)	—	(272)
Translation and other	(60)	(93)	(28)	(14)	(2)	(197)
Balance as of December 31, 2018	\$ 2,614	\$ 4,325	\$ 1,654	\$ 1,250	\$ 208	\$ 10,051

Accounting standards require that goodwill be tested for impairment annually and between annual tests in certain circumstances such as a change in reporting units or the testing of recoverability of a significant asset group within a reporting unit. At 3M, reporting units correspond to a division.

As described in Note 18, effective in the first quarter of 2018, the Company changed its business segment reporting in its continuing effort to improve the alignment of its businesses around markets and customers. For any product changes that resulted in reporting unit changes, the Company applied the relative fair value method to determine the impact on goodwill of the associated reporting units. During the first quarter of 2018, the Company completed its assessment of any potential goodwill impairment for reporting units impacted by this new structure and determined that no impairment existed. The Company also completed its annual goodwill impairment test in the fourth quarter of 2018 for all reporting units and determined that no impairment existed. In addition, the Company had no impairments of goodwill in 2016 or 2017.

Acquired Intangible Assets

The carrying amount and accumulated amortization of acquired finite-lived intangible assets, in addition to the balance of non-amortizable intangible assets, as of December 31, follow:

(Millions)	December 31, 2018	December 31, 2017
Customer related intangible assets	\$ 2,291	\$ 2,332

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Patents	542	561
Other technology-based intangible assets	576	583
Definite-lived tradenames	664	678
Other amortizable intangible assets	125	207
Total gross carrying amount	\$ 4,198	\$ 4,361
Accumulated amortization — customer related	(998)	(874)
Accumulated amortization — patents	(487)	(489)
Accumulated amortization — other technology based	(333)	(292)
Accumulated amortization — definite-lived tradenames	(276)	(256)
Accumulated amortization — other	(88)	(162)
Total accumulated amortization	\$ (2,182)	\$ (2,073)
Total finite-lived intangible assets — net	\$ 2,016	\$ 2,288
Non-amortizable intangible assets (primarily tradenames)	641	648
Total intangible assets — net	\$ 2,657	\$ 2,936

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Certain tradenames acquired by 3M are not amortized because they have been in existence for over 55 years, have a history of leading-market share positions, have been and are intended to be continuously renewed, and the associated products of which are expected to generate cash flows for 3M for an indefinite period of time.

Amortization expense for the years ended December 31 follows:

(Millions)	2018	2017	2016
Amortization expense	\$ 249	\$ 238	\$ 262

Expected amortization expense for acquired amortizable intangible assets recorded as of December 31, 2018 follows:

(Millions)	2019	2020	2021	2022	2023	After 2023
Amortization expense	\$ 240	\$ 228	\$ 219	\$ 205	\$ 174	\$ 950

The preceding expected amortization expense is an estimate. Actual amounts of amortization expense may differ from estimated amounts due to additional intangible asset acquisitions, changes in foreign currency exchange rates, impairment of intangible assets, accelerated amortization of intangible assets and other events. 3M expenses the costs incurred to renew or extend the term of intangible assets.

NOTE 5. Restructuring Actions and Exit Activities

2018 Restructuring Actions:

During the second quarter and fourth quarter of 2018, management approved and committed to undertake certain restructuring actions related to addressing corporate functional costs following the Communication Markets Division divestiture. These actions affected approximately 1,200 positions worldwide and resulted in a second quarter 2018 pre-tax charge of \$105 million and a fourth quarter pre-tax charge of \$22 million, net of adjustments for reductions in cost estimates of \$10 million, essentially all within Corporate and Unallocated. The restructuring charges were recorded in the income statement as follows:

(Millions)

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	Second Quarter 2018	Fourth Quarter 2018
Cost of sales	\$ 12	\$ 15
Selling, general and administrative expenses	89	16
Research, development and related expenses	4	1
Total	\$ 105	\$ 32

Restructuring actions, including cash and non-cash impacts, follow:

(Millions)	Employee-Related	Asset-Related	Total
Expense incurred in the second quarter and fourth quarter of 2018	\$ 125	\$ 12	\$ 137
Non-cash changes	—	(12)	(12)
Cash payments	(24)	—	(24)
Adjustments	(17)	—	(17)
Accrued restructuring action balances as of December 31, 2018	\$ 84	\$ —	\$ 84

Remaining activities related to this restructuring are expected to be largely completed through 2019.

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2017 Restructuring Actions:

During the second quarter of 2017, management approved and committed to undertake certain restructuring actions primarily focused on portfolio and footprint optimization. These actions affected approximately 1,300 positions worldwide and resulted in a second quarter 2017 pre-tax charge of \$99 million. Restructuring charges are summarized by business segment as follows:

(Millions)	Second Quarter 2017 Employee-Related
Industrial	\$ 39
Safety and Graphics	9
Health Care	2
Electronics and Energy	7
Consumer	36
Corporate and Unallocated	6
Total Expense	\$ 99

The preceding restructuring charges were recorded in the income statement as follows:

(Millions)	Second Quarter 2017
Cost of sales	\$ 86
Selling, general and administrative expenses	5
Research, development and related expenses	8
Total	\$ 99

Restructuring actions, including cash and non-cash impacts, follow:

(Millions)	Employee-Related
Expense incurred in the second quarter of 2017	\$ 99
Cash payments	(8)
Adjustments	(3)
Accrued restructuring action balances as of December 31, 2017	\$ 88
Cash payments	(20)
Adjustments	(28)
Accrued restructuring action balances as of December 31, 2018	\$ 40

Remaining activities related to this restructuring are expected to be substantially completed by mid-2019, with payments occurring over time in accordance with applicable severance arrangements into 2020. A portion of the adjustments detailed above include certain severance accruals taken in 2017, the obligation for which was relieved and reflected as part of the gain on divestiture when that business was sold in 2018.

2017 Exit Activities:

During the first quarter of 2017, the Company recorded net pre-tax charges of \$24 million related to exit activities. These charges related to employee reductions, primarily in Western Europe. During the fourth quarter of 2017, the Company recorded net pre-tax charges of \$23 million related to exit activities. These charges related to employee reductions, primarily in the United States and Western Europe.

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NOTE 6. Supplemental Income Statement Information

Other expense (income), net consists of the following:

(Millions)	2018	2017	2016
Interest expense	\$ 350	\$ 322	\$ 199
Interest income	(70)	(50)	(29)
Pension and postretirement net periodic benefit cost (benefit)	(73)	(128)	(196)
Total	\$ 207	\$ 144	\$ (26)

Pension and postretirement net periodic benefit costs described in the table above include all components of defined benefit plan net periodic benefit costs except service cost, which is reported in various operating expense lines. Refer to Note 13 for additional details on the components of pension and postretirement net periodic benefit costs.

The Company recorded an early debt extinguishment charge of approximately \$96 million which was included within interest expense in the fourth quarter of 2017.

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NOTE 7. Supplemental Balance Sheet Information

Accounts payable (included as a separate line item in the Consolidated Balance Sheet) includes drafts payable on demand of \$104 million at December 31, 2018, and \$74 million at December 31, 2017. Accumulated depreciation for capital leases totaled \$54 million and \$48 million as of December 31, 2018, and 2017, respectively. Additional supplemental balance sheet information is provided in the table that follows.

(Millions)	2018	2017
Other current assets		
Derivative assets-current	\$ 88	\$ 37
Insurance related (receivables, prepaid expenses and other)	103	71
Other	158	158
Total other current assets	\$ 349	\$ 266
Property, plant and equipment - at cost		
Land	\$ 340	\$ 348
Buildings and leasehold improvements	7,517	7,681
Machinery and equipment	15,680	15,907
Construction in progress	1,193	843
Capital leases	143	135
Gross property, plant and equipment	24,873	24,914
Accumulated depreciation	(16,135)	(16,048)
Property, plant and equipment - net	\$ 8,738	\$ 8,866
Other assets		
Deferred income taxes	\$ 365	\$ 511
Prepaid pension and post retirement	208	237
Insurance related receivables and other	68	63
Cash surrender value of life insurance policies	251	241
Equity method investments	70	70
Equity and other investments	118	80
Other	265	193
Total other assets	\$ 1,345	\$ 1,395
Other current liabilities		
Accrued rebates	\$ 558	\$ 516
Deferred revenue	617	513
Derivative liabilities	32	135
Employee benefits and withholdings	228	208
Contingent liability claims and other	244	179
Property, sales-related and other taxes	273	277
Pension and postretirement benefits	76	69
Other	747	812
Total other current liabilities	\$ 2,775	\$ 2,709

Other liabilities		
Long term income taxes payable	\$ 1,274	\$ 1,287
Employee benefits	299	319
Contingent liability claims and other	789	727
Capital lease obligations	75	60
Deferred income taxes	279	235
Other	294	334
Total other liabilities	\$ 3,010	\$ 2,962

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NOTE 8. Supplemental Equity and Comprehensive Income Information

Common stock (\$.01 par value per share) of 3.0 billion shares is authorized, with 944,033,056 shares issued. Preferred stock, without par value, of 10 million shares is authorized but unissued.

Cash dividends declared and paid totaled \$1.36, \$1.175 and \$1.11 per share for each quarter in 2018, 2017 and 2016, respectively, which resulted in total year declared and paid dividends of \$5.44, \$4.70 and \$4.44 per share, respectively.

Transfer of Ownership Interest Involving Non-Wholly Owned Subsidiaries

During 2018, a wholly owned subsidiary in India was sold to 3M India Limited, which is 75 percent owned by the Company. Because the Company retained its controlling interest in the subsidiary involved, the sale resulted in a deemed dividend to 3M, resulting in an increase in 3M Company shareholders' equity and a decrease in noncontrolling interest. Refer to the Consolidated Statement of Changes in Equity for further details.

Changes in Accumulated Other Comprehensive Income (Loss) Attributable to 3M by Component

(Millions)	Cumulative Translation Adjustment	Defined Benefit Pension and Postretirement Plans Adjustment	Cash Flow Hedging Instruments, Unrealized Gain (Loss)	Total Accumulated Other Comprehensive Income (Loss)
Balance at December 31, 2015, net of tax:	\$ (1,679)	\$ (4,804)	\$ 124	\$ (6,359)
Other comprehensive income (loss), before tax:				
Amounts before reclassifications	(244)	(1,122)	57	(1,309)
Amounts reclassified out	—	421	(109)	312
Total other comprehensive income (loss), before tax	(244)	(701)	(52)	(997)
Tax effect	(85)	177	19	111
Total other comprehensive income (loss), net of tax	(329)	(524)	(33)	(886)
Balance at December 31, 2016, net of tax:	\$ (2,008)	\$ (5,328)	\$ 91	\$ (7,245)
Other comprehensive income (loss), before tax:				
Amounts before reclassifications	91	(600)	(311)	(820)
Amounts reclassified out	—	483	(7)	476
Total other comprehensive income (loss), before tax	91	(117)	(318)	(344)
Tax effect	279	169	115	563

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Total other comprehensive income (loss), net of tax	370	52	(203)	219
Balance at December 31, 2017, net of tax:	\$ (1,638)	\$ (5,276)	\$ (112)	\$ (7,026)
Other comprehensive income (loss), before tax:				
Amounts before reclassifications	(414)	55	133	(226)
Amounts reclassified out	—	606	96	702
Total other comprehensive income (loss), before tax	(414)	661	229	476
Tax effect	(47)	(217)	(53)	(317)
Total other comprehensive income (loss), net of tax	(461)	444	176	159
Transfer of ownership involving non-wholly owned subsidiaries	1	—	—	1
Balance at December 31, 2018, net of tax:	\$ (2,098)	\$ (4,832)	\$ 64	\$ (6,866)

Income taxes are not provided for foreign translation relating to permanent investments in international subsidiaries, but tax effects within cumulative translation does include impacts from items such as net investment hedge transactions. Reclassification adjustments are made to avoid double counting in comprehensive income items that are also recorded as part of net income.

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Reclassifications out of Accumulated Other Comprehensive Income Attributable to 3M

Details about Accumulated Other Comprehensive Income Components (Millions)	Amounts Reclassified from Accumulated Other Comprehensive Income			Location on Income Statement
	Year ended December 31, 2018	2017	2016	
Gains (losses) associated with defined benefit pension and postretirement plans amortization				
Transition asset	\$ —	\$ —	\$ 1	See Note 13
Prior service benefit	76	89	92	See Note 13
Net actuarial loss	(678)	(570)	(506)	See Note 13
Curtailments/Settlements	(4)	(2)	(8)	See Note 13
Total before tax	(606)	(483)	(421)	
				Provision for income taxes
Tax effect	145	116	148	
Net of tax	\$ (461)	\$ (367)	\$ (273)	
Cash flow hedging instruments gains (losses)				
Foreign currency forward/option contracts	\$ (95)	\$ 8	\$ 110	Cost of sales
Interest rate swap contracts	(1)	(1)	(1)	Interest expense
Total before tax	(96)	7	109	
				Provision for income taxes
Tax effect	19	(3)	(39)	
Net of tax	\$ (77)	\$ 4	\$ 70	
Total reclassifications for the period, net of tax	\$ (538)	\$ (363)	\$ (203)	

NOTE 9. Supplemental Cash Flow Information

(Millions)	2018	2017	2016
Cash income tax payments, net of refunds	\$ 1,560	\$ 1,604	\$ 1,888
Cash interest payments	328	214	194

Cash interest payments include interest paid on debt and capital lease balances, including net interest payments/receipts related to accreted debt discounts/premiums, payment of debt issue costs, as well as net interest payments/receipts associated with interest rate swap contracts. Cash interest payments exclude the cash paid for early debt extinguishment costs. Additional details are described in Note 12.

Individual amounts in the Consolidated Statement of Cash Flows exclude the impacts of acquisitions, divestitures and exchange rate impacts, which are presented separately.

Transactions related to investing and financing activities with significant non-cash components are as follows:

- 3M sold and leased-back, under capital leases, certain recently constructed machinery and equipment in return for municipal securities with certain cities in the United States. In aggregate, the values totaled approximately \$13 million in 2018, \$13 million in 2017, and \$12 million in 2016, as of the transaction date.

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NOTE 10. Income Taxes

Income Before Income Taxes

(Millions)	2018	2017	2016
United States	\$ 3,487	\$ 4,149	\$ 4,366
International	3,513	3,399	2,687
Total	\$ 7,000	\$ 7,548	\$ 7,053

Provision for Income Taxes

(Millions)	2018	2017	2016
Currently payable			
Federal	\$ 698	\$ 1,022	\$ 1,192
State	109	59	75
International	763	722	733
Tax Cuts and Jobs Act (TCJA) non-current transition tax provision	176	623	—
Deferred			
Federal	(38)	162	(3)
State	(17)	15	9
International	(54)	76	(11)
Total	\$ 1,637	\$ 2,679	\$ 1,995

Components of Deferred Tax Assets and Liabilities

(Millions)	2018	2017
Deferred tax assets:		
Accruals not currently deductible		
Employee benefit costs	\$ 187	\$ 178
Product and other claims	228	204
Miscellaneous accruals	113	98
Pension costs	643	760
Stock-based compensation	203	210
Net operating/capital loss/tax credit carryforwards	71	89
Foreign tax credits	—	32
Currency translation	—	59

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Inventory	54	51
Other	24	—
Gross deferred tax assets	1,523	1,681
Valuation allowance	(67)	(81)
Total deferred tax assets	\$ 1,456	\$ 1,600
Deferred tax liabilities:		
Product and other insurance receivables	\$ (7)	\$ (6)
Accelerated depreciation	(521)	(447)
Intangible amortization	(799)	(784)
Currency translation	(35)	—
Other	(8)	(87)
Total deferred tax liabilities	\$ (1,370)	\$ (1,324)
Net deferred tax assets	\$ 86	\$ 276

The net deferred tax assets are included as components of Other Assets and Other Liabilities within the Consolidated Balance Sheet. See Note 7 “Supplemental Balance Sheet Information” for further details.

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As of December 31, 2018, the Company had tax effected operating losses, capital losses, and tax credit carryovers for federal (approximately \$3 million), state (approximately \$19 million), and international (approximately \$50 million), with all amounts before limitation impacts and valuation allowances. The federal tax attribute carryovers will expire after 15 to 20 years, the state after 5 to 10 years, and the international after one to three years or have an indefinite carryover period. The tax attributes being carried over arise as certain jurisdictions may have tax losses or may have inabilities to utilize certain losses and foreign tax credits without the same type of taxable income. As of December 31, 2018, the Company has provided \$67 million of valuation allowance against certain of these deferred tax assets based on management's determination that it is more-likely-than-not that the tax benefits related to these assets will not be realized.

Reconciliation of Effective Income Tax Rate

	2018	2017	2016
Statutory U.S. tax rate	21.0 %	35.0 %	35.0 %
State income taxes - net of federal benefit	1.0	0.8	0.9
International income taxes - net	0.2	(6.3)	(2.7)
Global Intangible Low Taxed Income (GILTI)	1.1	—	—
Foreign Derived Intangible Income (FDII)	(1.3)	—	—
U.S. TCJA enactment - net impacts	2.5	10.1	—
U.S. research and development credit	(1.5)	(0.7)	(0.5)
Reserves for tax contingencies	1.2	2.2	0.2
Domestic Manufacturer's deduction	—	(1.8)	(1.8)
Employee share-based payments	(1.4)	(3.2)	(2.8)
All other - net	0.6	(0.6)	—
Effective worldwide tax rate	23.4 %	35.5 %	28.3 %

The effective tax rate for 2018 was 23.4 percent, compared to 35.5 percent in 2017, a decrease of 12.1 percentage points, impacted by several factors. Primary factors that decreased the Company's effective tax rate included favorable aspects of the Tax Cuts and Jobs Act (TCJA) including the decrease in the U.S. income tax rate and foreign-derived intangible income (FDII), reduced transitional impact of TCJA related to transition tax and remeasurement of deferred tax assets/liabilities (further discussed below), increased benefits from the R&D tax credit, and favorable adjustment to prior year uncertain tax provisions. These decreases were partially offset by the elimination of the domestic manufacturing deduction, the global intangible low-taxed income (GILTI) provision, and lower excess tax benefits related to employee share-based payments.

The effective tax rate for 2017 was 35.5 percent, compared to 28.3 percent in 2016, an increase of 7.2 percentage points, impacted by several factors. Primary factors that increased the Company's effective tax rate included the impacts due to the TCJA being enacted in 2017 (see further information below) and remeasurements and establishment of 3M's uncertain tax positions. The increase was partially offset by actions which related to

international taxes that were impacted by increasing benefits from the Company's supply chain centers of expertise, changes to the geographic mix of income before taxes and prior year cash optimization actions, higher year-on-year excess tax benefit for employee share-based payment, increased benefits from the R&D tax credit, a reduction of state taxes, and other items.

The TCJA was enacted in December 2017. Among other things, the TCJA reduces the U.S. federal corporate tax rate from 35 percent to 21 percent beginning in 2018, requires companies to pay a one-time transition tax on previously unremitted earnings of non-U.S. subsidiaries that were previously tax deferred and creates new taxes on certain foreign sourced earnings. The SEC staff issued Staff Accounting Bulletin (SAB) 118, which provided a measurement period of up to one year from the TCJA's enactment date for companies to complete their accounting under ASC 740. In connection with the enactment of the TCJA, the Company recorded a net tax expense of \$762 million in the fourth quarter of 2017 and additional net charges of \$176 million as measurement period adjustments in 2018. As further discussed below, 3M completed its accounting for the income tax effects of enactment of the TCJA as follows:

Transition tax: 3M recorded a provisional income tax expense obligation of \$745 million in the fourth quarter of 2017. During 2018, the Company recorded an additional obligation of \$97 million related to the transition tax portion of the TCJA. The TCJA's transition

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tax is payable over eight years beginning in 2018. As of December 31, 2018, 3M reflected \$649 million in long-term income taxes payable associated with the transition tax.

Remeasurement of deferred tax assets/liabilities and other impacts: 3M remeasured certain deferred tax assets and liabilities based on the rates at which they are expected to reverse in the future, which is generally 21 percent under the TCJA. In the fourth quarter of 2017, 3M recorded a net income tax expense of \$17 million related to remeasurement of deferred tax assets/liabilities and other impacts. During 2018, 3M recorded an additional net tax expense of \$79 million as an associated measurement period adjustment.

3M has recorded current tax on GILTI relative to 2018 operations and will continue to account for GILTI as a period cost when incurred.

The IRS has completed its field examination of the Company's U.S. federal income tax returns for the years 2005 to 2014, and 2016, but the years have not closed as the Company is in the process of resolving open issues. The Company remains under examination by the IRS for its U.S. federal income tax returns for the years 2015, 2017 and 2018. In addition to the U.S. federal examination, there is also audit activity in several U.S. state and foreign jurisdictions. As of December 31, 2018, no taxing authority proposed significant adjustments to the Company's tax positions for which the Company is not adequately reserved.

It is reasonably possible that the amount of unrecognized tax benefits could significantly change within the next 12 months. The Company has ongoing federal, state and international income tax audits in various jurisdictions and evaluates uncertain tax positions that may be challenged by local tax authorities and not fully sustained. These uncertain tax positions are reviewed on an ongoing basis and adjusted in light of facts and circumstances including progression of tax audits, developments in case law and closing of statutes of limitation. At this time, the Company is not able to estimate the range by which these potential events could impact 3M's unrecognized tax benefits in the next 12 months.

The Company recognizes the amount of tax benefit that has a greater than 50 percent likelihood of being ultimately realized upon settlement. A reconciliation of the beginning and ending amount of gross unrecognized tax benefits (UTB) is as follows:

Federal, State and Foreign Tax

(Millions)	2018	2017	2016
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Gross UTB Balance at January 1	\$ 530	\$ 319	\$ 381
Additions based on tax positions related to the current year	129	119	67
Additions for tax positions of prior years	146	149	43
Reductions for tax positions of prior years	(123)	(38)	(66)
Settlements	(17)	(3)	(95)
Reductions due to lapse of applicable statute of limitations	(18)	(16)	(11)
Gross UTB Balance at December 31	\$ 647	\$ 530	\$ 319
Net UTB impacting the effective tax rate at December 31	\$ 655	\$ 526	\$ 333

The total amount of UTB, if recognized, would affect the effective tax rate by \$655 million as of December 31, 2018, \$526 million as of December 31, 2017, and \$333 million as of December 31, 2016. The ending net UTB results from adjusting the gross balance for deferred items, interest and penalties, and deductible taxes. The net UTB is included as components of Other Assets, Accrued Income Taxes, and Other Liabilities within the Consolidated Balance Sheet.

The Company recognizes interest and penalties accrued related to unrecognized tax benefits in tax expense. The Company recognized in the consolidated statement of income on a gross basis approximately \$12 million of expense, \$20 million of expense, and \$10 million of expense in 2018, 2017, and 2016, respectively. The amount of interest and penalties recognized may be an expense or benefit due to new or remeasured unrecognized tax benefit accruals. At December 31, 2018, and December 31, 2017, accrued interest and penalties in the consolidated balance sheet on a gross basis were \$69 million and \$68 million, respectively. Included in these interest and penalty amounts are interest and penalties related to tax positions for which the ultimate deductibility is highly certain but for which there is uncertainty about the timing of such deductibility.

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As a result of certain employment commitments and capital investments made by 3M, income from certain manufacturing activities in the following countries is subject to reduced tax rates or, in some cases, is exempt from tax for years through the following: Thailand (2018), China (2019), Korea (2019), Switzerland (2023), Singapore (2025), and Brazil (2028). The income tax benefits attributable to the tax status of these subsidiaries are estimated to be \$227 million (38 cents per diluted share) in 2018, \$228 million (37 cents per diluted share) in 2017, and \$142 million (23 cents per diluted share) in 2016.

The Company has not provided deferred taxes on approximately \$12 billion of undistributed earnings from non-U.S. subsidiaries as of December 31, 2018, which are indefinitely reinvested in operations. Because of the multiple avenues in which to repatriate the earnings to minimize tax cost, and because a large portion of these earnings are not liquid, it is not practical to determine the income tax liability that would be payable if such earnings were not reinvested indefinitely.

NOTE 11. Marketable Securities

The Company invests in asset-backed securities, certificates of deposit/time deposits, commercial paper, and other securities. The following is a summary of amounts recorded on the Consolidated Balance Sheet for marketable securities (current and non-current).

(Millions)	December 31, 2018	December 31, 2017
Corporate debt securities	\$ —	\$ 14
Commercial paper	366	899
Certificates of deposit/time deposits	10	76
U.S. municipal securities	3	3
Asset-backed securities:		
Automobile loan related	1	16
Credit card related	—	68
Asset-backed securities total	1	84
Current marketable securities	\$ 380	\$ 1,076
U.S. municipal securities	\$ 37	\$ 27
Non-current marketable securities	\$ 37	\$ 27
Total marketable securities	\$ 417	\$ 1,103

At December 31, 2018 and 2017, gross unrealized, gross realized, and net realized gains and/or losses (pre-tax) were not material.

The balance at December 31, 2018, for marketable securities by contractual maturity are shown below. Actual maturities may differ from contractual maturities because the issuers of the securities may have the right to prepay obligations without prepayment penalties.

(Millions)	December 31, 2018
Due in one year or less	\$ 380
Due after one year through five years	13
Due after five years through ten years	15
Due after ten years	9
Total marketable securities	\$ 417

3M does not currently expect risk related to its holding in asset-backed securities to materially impact its financial condition or liquidity.

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NOTE 12. Long-Term Debt and Short-Term Borrowings

The following debt tables reflect effective interest rates, which include the impact of interest rate swaps, as of December 31, 2018. If the debt was issued on a combined basis, the debt has been separated to show the impact of the fixed versus floating effective interest rates. Carrying value includes the impact of debt issuance costs and fair value hedging activity. Long-term debt and short-term borrowings as of December 31 consisted of the following:

Long-Term Debt

(Millions) Description / 2018 Principal Amount	Currency/ Fixed vs. Floating	Effective Interest Rate	Final Maturity Date	Carrying Value 2018	2017
Medium-term note (repaid in 2018)	Euro Floating	—	% —	—	600
Medium-term note (repaid in 2018)	USD Floating	—	% —	—	448
Medium-term note (\$600 million)	Floating	1.74	% 2019	596	596
Medium-term note (\$25 million)	USD Fixed	1.74	% 2019	25	25
Medium-term note (650 million Euros)	Euro Floating	—	% 2020	743	779
Medium-term note (\$300 million)	USD Floating	2.61	% 2020	294	296
Medium-term note (\$200 million)	USD Floating	2.69	% 2020	197	198
Eurobond (300 million Euros)	Euro Floating	—	% 2021	357	378
Eurobond (300 million Euros)	Euro Fixed	1.97	% 2021	341	358
Medium-term note (\$600 million)	USD Fixed	1.63	% 2021	599	598
Medium-term note (\$200 million)	USD Fixed	3.07	% 2021	199	—
Medium-term note (\$200 million)	USD Floating	3.07	% 2021	201	—
Medium-term note (500 million Euros)	Euro Fixed	0.45	% 2022	570	597
Medium-term note (\$600 million)	USD Fixed	2.17	% 2022	596	595
Medium-term note (600 million Euros)	Euro Fixed	1.14	% 2023	680	712
Medium-term note (\$650 million)	USD Fixed	2.26	% 2023	648	647
Medium-term note (\$300 million)	USD Floating	2.91	% 2024	299	—
Medium-term note (\$300 million)	USD Fixed	3.30	% 2024	298	—
Medium-term note (\$550 million)	USD Fixed	3.04	% 2025	547	546
Medium-term note (750 million Euros)	Euro Fixed	1.65	% 2026	844	885
Medium-term note (\$650 million)	USD Fixed	2.37	% 2026	642	641
Medium-term note (\$850 million)	USD Fixed	2.95	% 2027	841	839
30-year debenture (\$220 million)	USD Fixed	6.01	% 2028	226	227

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Medium-term note (\$600 million)	USD Fixed	3.62	%	2028	597	—
Medium-term note (500 million Euros)	Euro Fixed	1.90	%	2030	562	589
Medium-term note (500 million Euros)	Euro Fixed	1.54	%	2031	567	595
30-year bond (\$555 million)	USD Fixed	5.73	%	2037	551	550
	USD					
Floating rate note (\$96 million)	Floating	2.45	%	2041	95	95
Medium-term note (\$325 million)	USD Fixed	4.05	%	2044	314	313
	USD					
Floating rate note (\$55 million)	Floating	2.43	%	2044	53	54
Medium-term note (\$500 million)	USD Fixed	3.37	%	2046	474	473
Medium-term note (\$500 million)	USD Fixed	3.68	%	2047	491	491
Medium-term note (\$650 million)	USD Fixed	4.07	%	2048	637	—
Other borrowings	Various	2.35	%	2019-2040	72	73
Total long-term debt					\$ 14,156	\$ 13,198
Less: current portion of long-term debt					745	1,102
Long-term debt (excluding current portion)					\$ 13,411	\$ 12,096

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Post-Swap Borrowing (Long-Term Debt, Including Current Portion)

(Millions)	2018		2017	
	Carrying Value	Effective Interest Rate	Carrying Value	Effective Interest Rate
Fixed-rate debt	\$ 11,249	2.67 %	\$ 9,681	2.45 %
Floating-rate debt	2,907	1.44 %	3,517	0.76 %
Total long-term debt, including current portion	\$ 14,156		\$ 13,198	

Short-Term Borrowings and Current Portion of Long-Term Debt

(Millions)	Effective Interest Rate	Carrying Value	
		2018	2017
Current portion of long-term debt	1.85 %	\$ 745	\$ 1,102
U.S. dollar commercial paper	2.33 %	435	745
Other borrowings	5.95 %	31	6
Total short-term borrowings and current portion of long-term debt		\$ 1,211	\$ 1,853

Other short-term borrowings primarily consisted of bank borrowings by international subsidiaries.

Future Maturities of Long-term Debt

Maturities of long-term debt in the table below are net of the unaccreted debt issue costs such that total maturities equal the carrying value of long-term debt as of December 31, 2018. The maturities of long-term debt for the periods subsequent to December 31, 2018 are as follows (in millions):

2019	2020	2021	2022	2023	After 2023	Total
\$ 745	\$ 1,330	\$ 1,698	\$ 1,165	\$ 1,328	\$ 7,890	\$ 14,156

As a result of put provisions associated with certain debt instruments, long-term debt payments due in 2019 include floating rate notes totaling \$53 million (classified as current portion of long-term debt) and \$71 million (included in other borrowings in the long-term debt table). Long-term debt payments due in 2020 include floating rate notes

totaling \$95 million (included within long term debt).

Credit Facilities

In March 2016, 3M amended and restated its existing \$2.25 billion five-year revolving credit facility expiring in August 2019 to a \$3.75 billion five-year revolving credit facility expiring in March 2021. This credit agreement includes a provision under which 3M may request an increase of up to \$1.25 billion (at lender's discretion), bringing the total facility up to \$5.0 billion. This revolving credit facility was undrawn at December 31, 2018. Under the \$3.75 billion credit agreement, the Company is required to maintain its EBITDA to Interest Ratio as of the end of each fiscal quarter at not less than 3.0 to 1. This is calculated (as defined in the agreement) as the ratio of consolidated total EBITDA for the four consecutive quarters then ended to total interest expense on all funded debt for the same period. At December 31, 2018, this ratio was approximately 25 to 1. Debt covenants do not restrict the payment of dividends.

Other Credit Facilities

Apart from the committed revolving facility, an additional \$243 million in stand-alone letters of credit and bank guarantees were also issued and outstanding at December 31, 2018. These instruments are utilized in connection with normal business activities.

Long-Term Debt Issuances

The principal amounts, interest rates and maturity dates of individual long-term debt issuances can be found in the long-term debt table found at the beginning of this note.

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In September 2018, 3M issued \$400 million aggregate principal amount of 3-year fixed rate medium-term notes due 2021 with a coupon rate of 3.00%, \$300 million aggregate principal amount of 5.5-year fixed rate medium-term notes due 2024 with a coupon rate of 3.25%, \$300 million aggregate principal amount of 5.5-year floating rate medium-term notes due 2024 with a rate based on a floating three-month LIBOR index, \$600 million aggregate principal amount of 10-year fixed rate medium-term notes due 2028 with a coupon rate of 3.625%, and \$650 million aggregate principal amount of 30-year fixed rate medium-term notes due 2048 with a coupon rate of 4.00%. Upon debt issuance, the Company entered into a fixed-to-floating interest rate swap on \$200 million aggregate principal amount of the 3-year fixed rate medium-term notes issued with an interest rate based on a three-month LIBOR index.

In October 2017, 3M issued \$650 million aggregate principal amount of 5.5-year fixed rate medium-term notes due 2023 with a coupon rate of 2.25%, \$850 million aggregate principal amount of 10-year fixed rate medium-term notes due 2027 with a coupon rate of 2.875%, and \$500 million aggregate principal amount of 30-year fixed rate medium-term notes due 2047 with a coupon rate of 3.625%.

In May 2016, 3M issued 1 billion Euros aggregate principal amount of medium-term notes. In September 2016, 3M issued \$1.75 billion aggregate principal amount of medium-term notes.

Long-Term Debt Maturities and Extinguishments

In November and August 2018, respectively, 3M repaid 500 million Euros and \$450 million aggregate principal amount of floating rate medium-term notes that matured.

In October 2017, 3M, via cash tender offers, repurchased \$305 million aggregate principal amount of its outstanding notes. This included \$110 million of its \$330 million principal amount of 6.375% notes due 2028 and \$195 million of its \$750 million principal amount of 5.70% notes due 2037. The Company recorded an early debt extinguishment charge of approximately \$96 million in the fourth quarter of 2017 within interest expense, the cash outflow for which is recorded within other financing activities on the statement of cash flows. This charge reflected the differential between the carrying value and the amount paid to acquire the tendered notes and related expenses.

In June 2017, 3M repaid \$650 million aggregate principal amount of fixed rate medium-term notes that matured.

In September 2016, 3M repaid \$1 billion aggregate principal amount of medium-term notes.

Floating Rate Notes

At various times, 3M has issued floating rate notes containing put provisions. 3M would be required to repurchase these securities at various prices ranging from 99 percent to 100 percent of par value according to the reduction schedules for each security. In December 2004, 3M issued a forty-year \$60 million floating rate note, with a rate based on a floating LIBOR index. Under the terms of this floating rate note due in 2044, holders have an annual put feature at 100 percent of par value from 2014 and every anniversary thereafter until final maturity. Under the terms of the floating rate notes due in 2027, 2040 and 2041, holders have put options that commence ten years from the date of issuance and each third anniversary thereafter until final maturity at prices ranging from 99 percent to 100 percent of par value. For the periods presented, 3M was required to repurchase an immaterial amount of principal on the aforementioned floating rate notes.

NOTE 13. Pension and Postretirement Benefit Plans

3M has company-sponsored retirement plans covering substantially all U.S. employees and many employees outside the United States. In total, 3M has over 70 defined benefit plans in 26 countries. Pension benefits associated with these plans generally are based on each participant's years of service, compensation, and age at retirement or termination. The primary U.S. defined-benefit pension plan was closed to new participants effective January 1, 2009. The Company also provides certain postretirement health care and life insurance benefits for its U.S. employees who reach retirement age while employed by the Company and were employed by the Company prior to January 1, 2016. Most international employees and retirees are covered by government health care programs. The cost of company-provided postretirement health care plans for international employees is not material and is combined with U.S. amounts in the tables that follow.

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The Company has made deposits for its defined benefit plans with independent trustees. Trust funds and deposits with insurance companies are maintained to provide pension benefits to plan participants and their beneficiaries. There are no plan assets in the non-qualified plan due to its nature. For its U.S. postretirement health care and life insurance benefit plans, the Company has set aside amounts at least equal to annual benefit payments with an independent trustee.

The Company also sponsors employee savings plans under Section 401(k) of the Internal Revenue Code. These plans are offered to substantially all regular U.S. employees. For eligible employees hired prior to January 1, 2009, employee 401(k) contributions of up to 5% of eligible compensation matched in cash at rates of 45% or 60%, depending on the plan in which the employee participates. Employees hired on or after January 1, 2009, receive a cash match of 100% for employee 401(k) contributions of up to 5% of eligible compensation and receive an employer retirement income account cash contribution of 3% of the participant's total eligible compensation. All contributions are invested in a number of investment funds pursuant to the employees' elections. Employer contributions to the U.S. defined contribution plans were \$173 million, \$159 million and \$139 million for 2018, 2017 and 2016, respectively. 3M subsidiaries in various international countries also participate in defined contribution plans. Employer contributions to the international defined contribution plans were \$99 million, \$88 million and \$87 million for 2018, 2017 and 2016, respectively.

The Company adopted ASU No. 2017-07, Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, effective January 1, 2018 on a retrospective basis. This ASU changed how employers that sponsor defined benefit pension and/or other postretirement benefit plans present the net periodic benefit cost in the income statement. Under the new standard, only the service cost component of net periodic benefit cost is included in operating expenses and only the service cost component is eligible for capitalization into assets such as inventory. All other net periodic benefit costs components (such as interest, expected return on plan assets, prior service cost amortization and actuarial gain/loss amortization) are reported outside of operating income. See Note 1 for additional details.

The following tables include a reconciliation of the beginning and ending balances of the benefit obligation and the fair value of plan assets as well as a summary of the related amounts recognized in the Company's consolidated balance sheet as of December 31 of the respective years. 3M also has certain non-qualified unfunded pension and postretirement benefit plans, inclusive of plans related to supplement/excess benefits for employees impacted by particular relocations and other matters, that individually and in the aggregate are not significant and which are not included in the tables that follow. The obligations for these plans are included within other liabilities in the Company's consolidated balance sheet and aggregated less than \$40 million as of December 31, 2018 and 2017.

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(Millions)	Qualified and Non-qualified Pension Benefits				Postretirement Benefits	
	United States		International		2018	2017
	2018	2017	2018	2017		
Change in benefit obligation						
Benefit obligation at beginning of year	\$ 17,360	\$ 16,202	\$ 7,502	\$ 6,625	\$ 2,410	\$ 2,259
Acquisitions/Transfers	—	—	(11)	3	—	—
Service cost	288	268	143	142	52	52
Interest cost	563	565	157	157	79	80
Participant contributions	—	—	9	8	—	—
Foreign exchange rate changes	—	—	(387)	667	(13)	3
Plan amendments	—	—	7	6	—	(6)
Actuarial (gain) loss	(1,226)	1,263	(144)	170	(244)	127
Benefit payments	(1,034)	(936)	(304)	(276)	(109)	(105)
Settlements, curtailments, special termination benefits and other	(3)	(2)	(7)	—	—	—
Benefit obligation at end of year	\$ 15,948	\$ 17,360	\$ 6,965	\$ 7,502	\$ 2,175	\$ 2,410
Change in plan assets						
Fair value of plan assets at beginning of year	\$ 15,686	\$ 14,081	\$ 6,737	\$ 5,617	\$ 1,397	\$ 1,356
Acquisitions/Transfers	(4)	—	—	2	—	—
Actual return on plan assets	(95)	1,693	(38)	714	(32)	143
Company contributions	254	852	112	112	4	3
Participant contributions	—	—	9	8	—	—
Foreign exchange rate changes	—	—	(346)	560	—	—
Benefit payments	(1,034)	(936)	(304)	(276)	(109)	(105)
Settlements, curtailments, special termination benefits and other	(4)	(4)	—	—	—	—
Fair value of plan assets at end of year	\$ 14,803	\$ 15,686	\$ 6,170	\$ 6,737	\$ 1,260	\$ 1,397
Funded status at end of year	\$ (1,145)	\$ (1,674)	\$ (795)	\$ (765)	\$ (915)	\$ (1,013)

(Millions)	Qualified and Non-qualified Pension Benefits				Postretirement Benefits	
	United States		International		2018	2017
	2018	2017	2018	2017		
Amounts recognized in the Consolidated Balance Sheet as of Dec. 31,						

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Non-current assets	\$ —	\$ 4	\$ 208	\$ 233	\$ —	\$ —
Accrued benefit cost						
Current liabilities	(60)	(53)	(13)	(12)	(3)	(4)
Non-current liabilities	(1,085)	(1,625)	(990)	(986)	(912)	(1,009)
Ending balance	\$ (1,145)	\$ (1,674)	\$ (795)	\$ (765)	\$ (915)	\$ (1,013)

(Millions)	Qualified and Non-qualified Pension Benefits				Postretirement Benefits	
	United States		International		2018	2017
	2018	2017	2018	2017		
Amounts recognized in accumulated other comprehensive income as of Dec. 31,						
Net actuarial loss (gain)	\$ 5,374	\$ 5,921	\$ 1,713	\$ 1,720	\$ 584	\$ 774
Prior service cost (credit)	(152)	(175)	(20)	(40)	(123)	(163)
Ending balance	\$ 5,222	\$ 5,746	\$ 1,693	\$ 1,680	\$ 461	\$ 611

The balance of amounts recognized for international plans in accumulated other comprehensive income as of December 31 in the preceding table are presented based on the foreign currency exchange rate on that date.

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The pension accumulated benefit obligation represents the actuarial present value of benefits based on employee service and compensation as of the measurement date and does not include an assumption about future compensation levels. The accumulated benefit obligation of the U.S. pension plans was \$15.033 billion and \$16.270 billion at December 31, 2018 and 2017, respectively. The accumulated benefit obligation of the international pension plans was \$6.438 billion and \$6.870 billion at December 31, 2018 and 2017, respectively.

The following amounts relate to pension plans with accumulated benefit obligations in excess of plan assets as of December 31:

(Millions)	Qualified and Non-qualified Pension Plans			
	United States		International	
	2018	2017	2018	2017
Projected benefit obligation	\$ 593	\$ 17,350	\$ 2,613	\$ 2,687
Accumulated benefit obligation	521	16,260	2,415	2,449
Fair value of plan assets	9	15,671	1,633	1,731

Components of net periodic cost and other amounts recognized in other comprehensive income

The service cost component of defined benefit net periodic benefit cost is recorded in cost of sales, selling, general and administrative expenses, and research, development and related expenses. As discussed in Note 6, the other components of net periodic benefit cost are reflected in other expense (income), net. Components of net periodic benefit cost and other supplemental information for the years ended December 31 follow:

(Millions)	Qualified and Non-qualified Pension Benefits						Postretirement Benefits		
	United States			International			2018	2017	2016
	2018	2017	2016	2018	2017	2016			
Net periodic benefit cost (benefit)									
Operating expense									
Service cost	\$ 288	\$ 268	\$ 259	\$ 143	\$ 142	\$ 133	\$ 52	\$ 52	\$ 54
Non-operating expense									
Interest cost	563	565	575	157	157	171	79	80	79
	(1,087)	(1,035)	(1,043)	(307)	(292)	(309)	(84)	(86)	(90)

Expected return on plan assets									
Amortization of transition asset	—	—	—	—	—	(1)	—	—	—
Amortization of prior service benefit	(23)	(23)	(24)	(13)	(13)	(13)	(40)	(53)	(55)
Amortization of net actuarial loss	503	388	354	114	126	91	61	56	61
Settlements, curtailments, special termination benefits and other	—	2	4	4	4	4	—	(4)	—
Total non-operating expense (benefit)	(44)	(103)	(134)	(45)	(18)	(57)	16	(7)	(5)
Total net periodic benefit cost (benefit)	\$ 244	\$ 165	\$ 125	\$ 98	\$ 124	\$ 76	\$ 68	\$ 45	\$ 49
Other changes in plan assets and benefit obligations recognized in other comprehensive (income) loss									
Amortization of transition asset	—	—	—	—	—	1	—	—	—
Prior service cost (benefit)	—	—	5	7	6	(5)	—	(1)	—
Amortization of prior service benefit	23	23	24	13	13	13	40	53	55
Net actuarial (gain) loss	(44)	605	692	190	(248)	512	(127)	69	8
Amortization of net actuarial loss	(503)	(388)	(354)	(114)	(126)	(91)	(61)	(56)	(61)
Foreign currency	—	—	—	(83)	167	(93)	(2)	—	—
Total recognized in other comprehensive (income) loss	\$ (524)	\$ 240	\$ 367	\$ 13	\$ (188)	\$ 337	\$ (150)	\$ 65	\$ 2
Total recognized in net periodic benefit cost (benefit) and other comprehensive (income) loss	\$ (280)	\$ 405	\$ 492	\$ 111	\$ (64)	\$ 413	\$ (82)	\$ 110	\$ 51

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Weighted-average assumptions used to determine benefit obligations as of December 31

	Qualified and Non-qualified Pension Benefits						Postretirement Benefits		
	United States			International			2018	2017	2016
	2018	2017	2016	2018	2017	2016			
Discount rate	4.36 %	3.68 %	4.21 %	2.50 %	2.41 %	2.54 %	4.41 %	3.79 %	4.26 %
Compensation rate increase	4.10 %	4.10 %	4.10 %	2.89 %	2.89 %	2.90 %	N/A	N/A	N/A

Weighted-average assumptions used to determine net cost for years ended December 31

	Qualified and Non-qualified Pension Benefits						Postretirement Benefits		
	United States			International			2018	2017	2016
	2018	2017	2016	2018	2017	2016			
Discount rate - service cost	3.78 %	4.42 %	4.70 %	2.27 %	2.32 %	2.84 %	3.86 %	4.50 %	4.70 %
Discount rate - interest cost	3.35 %	3.61 %	3.73 %	2.14 %	2.25 %	2.72 %	3.52 %	3.80 %	3.80 %
Expected return on assets	7.25 %	7.25 %	7.50 %	5.02 %	5.16 %	5.77 %	6.53 %	6.48 %	6.91 %
Compensation rate increase	4.10 %	4.10 %	4.10 %	2.89 %	2.90 %	2.90 %	N/A	N/A	N/A

The Company provides eligible retirees in the U.S. postretirement health care benefit plans to a savings account benefits-based plan. The contributions provided by the Company to the health savings accounts increase 3 percent per year for employees who retired prior to January 1, 2016 and increase 1.5 percent for employees who retire on or after January 1, 2016. Therefore, the Company no longer has material exposure to health care cost inflation.

The Company determines the discount rate used to measure plan liabilities as of the December 31 measurement date for the pension and postretirement benefit plans, which is also the date used for the related annual measurement assumptions. The discount rate reflects the current rate at which the associated liabilities could be effectively settled at the end of the year. The Company sets its rate to reflect the yield of a portfolio of high quality, fixed-income debt instruments that would produce cash flows sufficient in timing and amount to settle projected future benefits. Using this methodology, the Company determined a discount rate of 4.36% for the U.S. pension plans and 4.41% for the postretirement benefit plans as of December 31, 2018, which is an increase of 0.68 percentage points and 0.62 percentage points, respectively, from the rates used as of December 31, 2017. An increase in the discount rate lowers the Projected Benefit Obligation (PBO), the significant increase in the discount rate as of December 31, 2018 resulted

in an approximately \$1.2 billion lower PBO for the U.S. pension plans. For the international pension and postretirement plans the discount rates also reflect the current rate at which the associated liabilities could be effectively settled at the end of the year. If the country has a deep market in corporate bonds the Company matches the expected cash flows from the plan either to a portfolio of bonds that generate sufficient cash flow or a notional yield curve generated from available bond information. In countries that do not have a deep market in corporate bonds, government bonds are considered with a risk premium to approximate corporate bond yields.

The Company measures service cost and interest cost separately using the spot yield curve approach applied to each corresponding obligation. Service costs are determined based on duration-specific spot rates applied to the service cost cash flows. The interest cost calculation is determined by applying duration-specific spot rates to the year-by-year projected benefit payments. The spot yield curve approach does not affect the measurement of the total benefit obligations as the change in service and interest costs offset in the actuarial gains and losses recorded in other comprehensive income.

For the primary U.S. qualified pension plan, the Company's assumption for the expected return on plan assets was 7.25% in 2018. Projected returns are based primarily on broad, publicly traded equity and fixed-income indices and forward-looking estimates of active portfolio and investment management. As of December 31, 2018, the Company's 2019 expected long-term rate of return on U.S. plan assets is 7.00%. The expected return assumption is based on the strategic asset allocation of the plan, long term capital market return expectations and expected performance from active investment management. The 2018 expected long-term rate of return is based on an asset allocation assumption of 23% global equities, 14% private equities, 47% fixed-income securities, and 16% absolute return investments independent of traditional performance benchmarks, along with positive returns from active investment management. The actual net rate of return on plan assets in 2018 was -0.5%. In 2017 the plan earned a rate of return of 12.4% and in 2016 earned a return of 5.8%. The average annual actual return on the plan assets over the past 10 and 25 years has been 8.6% and

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8.7%, respectively. Return on assets assumptions for international pension and other post-retirement benefit plans are calculated on a plan-by-plan basis using plan asset allocations and expected long-term rate of return assumptions.

The Company converted to the “RP 2014 Mortality Tables” and updated the mortality improvement scales annually to the Society of Actuaries Scale MP-2016, Scale MP-2017 and Scale MP-2018. The December 31, 2018 update resulted in a small decrease to the U.S. pension PBO and U.S. accumulated postretirement benefit obligations.

During 2018, the Company contributed \$366 million to its U.S. and international pension plans and \$4 million to its postretirement plans. During 2017, the Company contributed \$964 million to its U.S. and international pension plans and \$3 million to its postretirement plans. In 2019, the Company expects to contribute an amount in the range of \$100 million to \$200 million of cash to its U.S. and international retirement plans. The Company does not have a required minimum cash pension contribution obligation for its U.S. plans in 2019. Future contributions will depend on market conditions, interest rates and other factors.

Future Pension and Postretirement Benefit Payments

The following table provides the estimated pension and postretirement benefit payments that are payable from the plans to participants.

(Millions)	Qualified and Non-qualified Pension Benefits		Postretirement Benefits
	United States	International	
2019 Benefit Payments	\$ 1,094	\$ 240	\$ 122
2020 Benefit Payments	1,097	242	130
2021 Benefit Payments	1,105	258	139
2022 Benefit Payments	1,117	269	147
2023 Benefit Payments	1,130	289	157
Next five years	5,683	1,623	842

Plan Asset Management

3M’s investment strategy for its pension and postretirement plans is to manage the funds on a going-concern basis. The primary goal of the trust funds is to meet the obligations as required. The secondary goal is to earn the highest rate of return possible, without jeopardizing its primary goal, and without subjecting the Company to an undue amount of contribution risk. Fund returns are used to help finance present and future obligations to the extent possible within

actuarially determined funding limits and tax-determined asset limits, thus reducing the potential need for additional contributions from 3M. The investment strategy has used long duration cash bonds and derivative instruments to offset a significant portion of the interest rate sensitivity of U.S. pension liabilities.

Normally, 3M does not buy or sell any of its own securities as a direct investment for its pension and other postretirement benefit funds. However, due to external investment management of the funds, the plans may indirectly buy, sell or hold 3M securities. The aggregate amount of 3M securities are not considered to be material relative to the aggregate fund percentages.

The discussion that follows references the fair value measurements of certain assets in terms of levels 1, 2 and 3. See Note 15 for descriptions of these levels. While the company believes the valuation methods are appropriate and consistent with other market participants, the use of different methodologies or assumptions to determine the fair value of certain financial instruments could result in a different estimate of fair value at the reporting date.

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U.S. Pension Plans and Postretirement Benefit Plan Assets

In order to achieve the investment objectives in the U.S. pension plans and U.S. postretirement benefit plans, the investment policies include a target strategic asset allocation. The investment policies allow some tolerance around the target in recognition that market fluctuations and illiquidity of some investments may cause the allocation to a specific asset class to vary from the target allocation, potentially for long periods of time. Acceptable ranges have been designed to allow for deviation from strategic targets and to allow for the opportunity for tactical over- and under-weights. The portfolios will normally be rebalanced when the quarter-end asset allocation deviates from acceptable ranges. The allocation is reviewed regularly by the named fiduciary of the plans. Approximately 50% of the postretirement benefit plan assets are in a 401(h) account. The 401(h) account assets are in the same trust as the primary U.S. pension plan and invested with the same investment objectives as the primary U.S. pension plan.

The fair values of the assets held by the U.S. pension plans by asset class are as follows:

(Millions) Asset Class	Fair Value Measurements Using Inputs Considered as						Fair Value at	
	Level 1		Level 2		Level 3		Dec. 31,	
	2018	2017	2018	2017	2018	2017	2018	2017
Equities								
U.S. equities	\$ 1,369	\$ 1,568	\$ —	\$ —	\$ —	\$ —	\$ 1,369	\$ 1,568
Non-U.S. equities	1,234	1,527	—	—	—	—	1,234	1,527
Index and long/short equity funds*							372	422
Total Equities	\$ 2,603	\$ 3,095	\$ —	\$ —	\$ —	\$ —	\$ 2,975	\$ 3,517
Fixed Income								
U.S. government securities	\$ 1,889	\$ 2,666	\$ 732	\$ 484	\$ —	\$ —	\$ 2,621	\$ 3,150
Non-U.S. government securities	—	—	44	168	—	—	44	168
Preferred and convertible securities	—	4	44	2	—	—	44	6
U.S. corporate bonds	9	10	2,941	2,904	—	—	2,950	2,914
Non-U.S. corporate bonds	—	—	475	614	—	—	475	614
Derivative instruments	2	—	111	110	—	—	113	110
Other*							9	8
Total Fixed Income	\$ 1,900	\$ 2,680	\$ 4,347	\$ 4,282	\$ —	\$ —	\$ 6,256	\$ 6,970
Private Equity								
Derivative instruments	\$ —	\$ —	\$ —	\$ —	\$ —	\$ (7)	\$ —	\$ (7)
Growth equity	45	34	—	—	—	—	45	34

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Partnership investments*							2,064	2,062
Total Private Equity	\$ 45	\$ 34	\$ —	\$ —	\$ —	\$ (7)	\$ 2,109	\$ 2,089
Absolute Return								
Fixed income and other	\$ 28	\$ 31	\$ 114	\$ 102	\$ —	\$ —	\$ 142	\$ 133
Hedge fund/fund of funds*							1,866	1,871
Partnership investments*							429	335
Total Absolute Return	\$ 28	\$ 31	\$ 114	\$ 102	\$ —	\$ —	\$ 2,437	\$ 2,339
Cash and Cash Equivalents								
Cash and cash equivalents	\$ 412	\$ 109	\$ 4	\$ 14	\$ —	\$ 1	\$ 416	\$ 124
Repurchase agreements and derivative margin activity	—	—	(1)	(502)	—	—	(1)	(502)
Cash and cash equivalents, valued at net asset value*							870	1,402
Total Cash and Cash Equivalents	\$ 412	\$ 109	\$ 3	\$ (488)	\$ —	\$ 1	\$ 1,285	\$ 1,024
Total	\$ 4,988	\$ 5,949	\$ 4,464	\$ 3,896	\$ —	\$ (6)	\$ 15,062	\$ 15,939
Other items to reconcile to fair value of plan assets							\$ (259)	\$ (253)
Fair value of plan assets							\$ 14,803	\$ 15,686

* In accordance with ASC 820-10, certain investments that are measured at fair value using the net asset value (NAV) per share (or its equivalent) as a practical expedient have not been classified in the fair value hierarchy. The NAV is based on the fair value of the underlying assets owned by the fund, minus its liabilities then divided by the number of units outstanding and is determined by the investment manager or custodian of the fund. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the fair value of plan assets.

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The fair values of the assets held by the postretirement benefit plans by asset class are as follows:

(Millions) Asset Class	Fair Value Measurements Using Inputs Considered as						Fair Value at	
	Level 1		Level 2		Level 3		Dec. 31,	
	2018	2017	2018	2017	2018	2017	2018	2017
Equities								
U.S. equities	\$ 356	\$ 465	\$ —	\$ —	\$ —	\$ —	\$ 356	\$ 465
Non-U.S. equities	58	71	—	—	—	—	58	71
Index and long/short equity funds*							34	45
Total Equities	\$ 414	\$ 536	\$ —	\$ —	\$ —	\$ —	\$ 448	\$ 581
Fixed Income								
U.S. government securities	\$ 112	\$ 136	\$ 213	\$ 205	\$ —	\$ —	\$ 325	\$ 341
Non-U.S. government securities	—	—	4	9	—	—	4	9
U.S. corporate bonds	—	—	162	159	—	—	162	159
Non-U.S. corporate bonds	—	—	32	35	—	—	32	35
Derivative instruments	—	—	5	4	—	—	5	4
Total Fixed Income	\$ 112	\$ 136	\$ 416	\$ 412	\$ —	\$ —	\$ 528	\$ 548
Private Equity								
Growth equity	\$ 2	\$ 2	\$ —	\$ —	\$ —	\$ —	\$ 2	\$ 2
Partnership investments*							101	109
Total Private Equity	\$ 2	\$ 2	\$ —	\$ —	\$ —	\$ —	\$ 103	\$ 111
Absolute Return								
Fixed income and other	\$ 1	\$ 1	\$ 5	\$ 4	\$ —	\$ —	\$ 6	\$ 5
Hedge fund/fund of funds*							80	76
Partnership investments*							18	14
Total Absolute Return	\$ 1	\$ 1	\$ 5	\$ 4	\$ —	\$ —	\$ 104	\$ 95
Cash and Cash Equivalents								
Cash and cash equivalents	\$ 47	\$ 34	\$ 5	\$ 1	\$ —	\$ —	\$ 52	\$ 35
Repurchase agreements and derivative margin activity	—	—	—	(20)	—	—	—	(20)
Cash and cash equivalents, valued at net asset value*							37	57
Total Cash and Cash Equivalents	\$ 47	\$ 34	\$ 5	\$ (19)	\$ —	\$ —	\$ 89	\$ 72
Total	\$ 576	\$ 709	\$ 426	\$ 397	\$ —	\$ —	\$ 1,272	\$ 1,407
Other items to reconcile to fair value of plan assets							\$ (12)	\$ (10)
Fair value of plan assets							\$ 1,260	\$ 1,397

*In accordance with ASC 820-10, certain investments that are measured at fair value using the NAV per share (or its equivalent) as a practical expedient have not been classified in the fair value hierarchy. The NAV is based on the fair value of the underlying assets owned by the fund, minus its liabilities then divided by the number of units outstanding and is determined by the investment manager or custodian of the fund. The fair value amounts presented in this table

are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the fair value of plan assets.

Publicly traded equities are valued at the closing price reported in the active market in which the individual securities are traded.

Fixed income includes derivative instruments such as credit default swaps, interest rate swaps and futures contracts. Corporate debt includes bonds and notes, asset backed securities, collateralized mortgage obligations and private placements. Swaps and derivative instruments are valued by the custodian using closing market swap curves and market derived inputs. U.S. government and government agency bonds and notes are valued at the closing price reported in the active market in which the individual security is traded. Corporate bonds and notes, asset backed securities and collateralized mortgage obligations are valued at either the yields currently available on comparable securities of issuers with similar credit ratings or valued under a discounted cash flow approach that utilizes observable inputs, such as current yields of similar instruments, but includes adjustments for certain risks that may not be observable such as credit and liquidity risks. Private placements are valued by the custodian using recognized pricing services and sources.

The private equity portfolio is a diversified mix of derivative instruments, growth equity and partnership interests. Derivative investments are written options that are valued by independent parties using market inputs and valuation models. Growth equity investments are valued at the closing price reported in the active market in which the individual securities are traded.

Absolute return consists primarily of partnership interests in hedge funds, hedge fund of funds or other private fund vehicles. Corporate debt instruments are valued at either the yields currently available on comparable securities of issuers with similar credit

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ratings or valued under a discounted cash flow approach that utilizes observable inputs, such as current yields of similar instruments, but includes adjustments for certain risks that may not be observable such as credit and liquidity risk ratings.

Other items to reconcile to fair value of plan assets include, interest receivables, amounts due for securities sold, amounts payable for securities purchased and interest payable.

The balances of and changes in the fair values of the U.S. pension plans' and postretirement plans' level 3 assets for the periods ended December 31, 2018 and 2017 were not material.

International Pension Plans Assets

Outside the U.S., pension plan assets are typically managed by decentralized fiduciary committees. The disclosure below of asset categories is presented in aggregate for over 65 defined benefit plans in 25 countries; however, there is significant variation in asset allocation policy from country to country. Local regulations, local funding rules, and local financial and tax considerations are part of the funding and investment allocation process in each country. The Company provides standard funding and investment guidance to all international plans with more focused guidance to the larger plans.

Each plan has its own strategic asset allocation. The asset allocations are reviewed periodically and rebalanced when necessary.

The fair values of the assets held by the international pension plans by asset class are as follows:

(Millions) Asset Class	Fair Value Measurements Using Inputs Considered as						Fair Value at	
	Level 1		Level 2		Level 3		Dec. 31,	
	2018	2017	2018	2017	2018	2017	2018	2017
Equities								
Growth equities	\$ 460	\$ 659	\$ 248	\$ 289	\$ —	\$ —	\$ 708	\$ 948
Value equities	446	597	42	43	—	—	488	640
Core equities	55	62	742	790	5	4	802	856
Equities, valued at net asset value*							16	21
Total Equities	\$ 961	\$ 1,318	\$ 1,032	\$ 1,122	\$ 5	\$ 4	\$ 2,014	\$ 2,465

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Fixed Income								
Domestic government	\$ 334	\$ 362	\$ 351	\$ 256	\$ 5	\$ 4	\$ 690	\$ 622
Foreign government	150	168	321	338	—	—	471	506
Corporate debt securities	56	63	993	1,072	9	10	1,058	1,145
Fixed income securities, valued at net asset value*							961	976
Total Fixed Income	\$ 540	\$ 593	\$ 1,665	\$ 1,666	\$ 14	\$ 14	\$ 3,180	\$ 3,249
Private Equity								
Real estate	\$ 5	\$ 36	\$ 75	\$ 74	\$ 4	\$ 3	\$ 84	\$ 113
Real estate, valued at net asset value*							37	36
Partnership investments*							89	68
Total Private Equity	\$ 5	\$ 36	\$ 75	\$ 74	\$ 4	\$ 3	\$ 210	\$ 217
Absolute Return								
Derivatives	\$ 1	\$ —	\$ 1	\$ 2	\$ —	\$ —	\$ 2	\$ 2
Insurance	—	—	—	—	496	519	496	519
Other	—	—	33	—	8	7	41	7
Other, valued at net asset value*							—	1
Hedge funds*							186	194
Total Absolute Return	\$ 1	\$ —	\$ 34	\$ 2	\$ 504	\$ 526	\$ 725	\$ 723
Cash and Cash Equivalents								
Cash and cash equivalents	\$ 71	\$ 67	\$ 22	\$ 34	\$ —	\$ —	\$ 93	\$ 101
Cash and cash equivalents, valued at net asset value*							1	3
Total Cash and Cash Equivalents	\$ 71	\$ 67	\$ 22	\$ 34	\$ —	\$ —	\$ 94	\$ 104
Total	\$ 1,578	\$ 2,014	\$ 2,828	\$ 2,898	\$ 527	\$ 547	\$ 6,223	\$ 6,758
Other items to reconcile to fair value of plan assets							\$ (53)	\$ (21)
Fair value of plan assets							\$ 6,170	\$ 6,737

*In accordance with ASC 820-10, certain investments that are measured at fair value using the NAV per share (or its equivalent) as a practical expedient have not been classified in the fair value hierarchy. The NAV is based on the fair value of the underlying assets owned by the fund, minus its liabilities then divided by the number of units outstanding and is determined by the investment manager or custodian of the fund. The fair value amounts presented in this table are intended to permit reconciliation of the fair value hierarchy to the amounts presented in the fair value of plan assets.

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Equities consist primarily of mandates in public equity securities managed to various public equity indices. Publicly traded equities are valued at the closing price reported in the active market in which the individual securities are traded.

Fixed Income investments include domestic and foreign government, and corporate, (including mortgage backed and other debt) securities. Governments, corporate bonds and notes and mortgage backed securities are valued at the closing price reported if traded on an active market or at yields currently available on comparable securities of issuers with similar credit ratings or valued under a discounted cash flow approach that utilizes observable inputs, such as current yields of similar instruments, but includes adjustments for certain risks that may not be observable such as credit and liquidity risks.

Private equity funds consist of partnership interests in a variety of funds. Real estate consists of property funds and REITS (Real Estate Investment Trusts). REITS are valued at the closing price reported in the active market in which it is traded.

Absolute return consists of private partnership interests in hedge funds, insurance contracts, derivative instruments, hedge fund of funds, and other alternative investments. Insurance consists of insurance contracts, which are valued using cash surrender values which is the amount the plan would receive if the contract was cashed out at year end. Derivative instruments consist of interest rate swaps that are used to help manage risks.

Other items to reconcile to fair value of plan assets include the net of interest receivables, amounts due for securities sold, amounts payable for securities purchased and interest payable.

The balances of and changes in the fair values of the international pension plans' level 3 assets consist primarily of insurance contracts under the absolute return asset class. The aggregate of net purchases and net unrealized gains decreased this balance by \$11million in 2018 and increased this balance by \$48 million in 2017. Foreign currency exchange impacts decreased this balance by \$13 million and increased this balance by \$16 million in 2017.

NOTE 14. Derivatives

The Company uses interest rate swaps, currency swaps, commodity price swaps, and forward and option contracts to manage risks generally associated with foreign exchange rate, interest rate and commodity price fluctuations. The information that follows explains the various types of derivatives and financial instruments used by 3M, how and why

3M uses such instruments, how such instruments are accounted for, and how such instruments impact 3M's financial position and performance.

Additional information with respect to derivatives is included elsewhere as follows:

- Impact on other comprehensive income of nonderivative hedging and derivative instruments is included in Note 8.
- Fair value of derivative instruments is included in Note 15.
- Derivatives and/or hedging instruments associated with the Company's long-term debt are also described in Note 12.

Types of Derivatives/Hedging Instruments and Inclusion in Income/Other Comprehensive Income:

Cash Flow Hedges:

For derivative instruments that are designated and qualify as cash flow hedges, the effective portion of the gain or loss on the derivative is reported as a component of other comprehensive income and reclassified into earnings in the same period during which the hedged transaction affects earnings. Gains and losses on the derivative representing either hedge ineffectiveness or hedge components excluded from the assessment of effectiveness are recognized in current earnings.

Cash Flow Hedging - Foreign Currency Forward and Option Contracts: The Company enters into foreign exchange forward and option contracts to hedge against the effect of exchange rate fluctuations on cash flows denominated in foreign currencies. These transactions are designated as cash flow hedges. The settlement or extension of these derivatives will result in reclassifications (from accumulated other comprehensive income) to earnings in the period during which the hedged transactions affect earnings. 3M may dedesignate these cash flow hedge relationships in advance of the occurrence of the forecasted transaction. The portion of gains or losses on the derivative instrument previously included in accumulated other comprehensive income for dedesignated hedges remains in accumulated other comprehensive income until the forecasted transaction occurs or becomes probable of not occurring. Changes in

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the value of derivative instruments after dedesignation are recorded in earnings and are included in the Derivatives Not Designated as Hedging Instruments section below. The maximum length of time over which 3M hedges its exposure to the variability in future cash flows of the forecasted transactions is 36 months.

Cash Flow Hedging — Interest Rate Contracts: The Company may use forward starting interest rate contracts to hedge exposure to variability in cash flows from interest payments on forecasted debt issuances. The amortization of gains and losses on forward starting interest rate swaps is included in the tables below as part of the gain/(loss) recognized in income on the effective portion of derivatives as a result of reclassification from accumulated other comprehensive income.

In the first six months of 2016, the Company entered into forward starting interest rate swaps that expired in December 2016 with an aggregate notional amount of \$300 million as a hedge against interest rate volatility associated with a forecasted issuance of fixed rate debt. Upon issuance of medium-term notes in September 2016, 3M terminated these interest rate swaps. The termination resulted in an immaterial loss within accumulated other comprehensive income that will be amortized over the respective lives of the debt.

In the fourth quarter of 2016, the Company entered into forward starting interest rate swaps with a notional amount of \$200 million as a hedge against interest rate volatility associated with a forecasted issuance of fixed rate debt. In 2017, the Company entered into additional forward starting interest rate swaps with notional amounts of \$600 million as hedges against interest rate volatility associated with a forecasted issuance of fixed rate debt. Prior to the issuance of medium-term notes in October 2017, 3M terminated these interest rate swaps. The termination resulted in an immaterial loss within accumulated other comprehensive income that will be amortized over the respective lives of the debt.

During 2018, the Company entered into forward starting interest rate swaps with a notional amount of \$1.2 billion as hedges against interest rate volatility associated with forecasted issuances of fixed rate debt. Concurrent with the issuance of the medium-term notes in September 2018, 3M terminated \$500 million of these interest rate swaps. The termination resulted in an immaterial gain within accumulated other comprehensive income that will be amortized over the respective lives of the debt.

As of December 31, 2018, the Company had a balance of \$64 million associated with the after tax net unrealized gain associated with cash flow hedging instruments recorded in accumulated other comprehensive income. This includes a remaining balance of \$7 million (after tax loss) related to forward starting interest rate swaps, which will be amortized over the respective lives of the notes. Based on exchange rates as of December 31, 2018, 3M expects to reclassify approximately \$55 million and \$15 million of the after-tax net unrealized foreign exchange cash flow hedging gains to earnings in 2019 and 2020, respectively, and approximately \$6 million of the after-tax net unrealized foreign exchange cash flow hedging losses to earnings after 2020 (with the impact offset by earnings/losses from underlying hedged items).

The location in the consolidated statements of income and comprehensive income and amounts of gains and losses related to derivative instruments designated as cash flow hedges are provided in the following table. Reclassifications of amounts from accumulated other comprehensive income into income include accumulated gains (losses) on dedesignated hedges at the time earnings are impacted by the forecasted transaction.

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Year ended December 31, 2018 (Millions)	Pretax Gain (Loss) Recognized in				
	Pretax Gain (Loss) Recognized in Other Comprehensive Income on Effective Portion of Derivative	Income on Derivative as a Result of Reclassification from Accumulated Other Comprehensive Income	Effective Portion of Gain (Loss) on Derivative and Amount Excluded from Effectiveness Testing Recognized in Income		
	Amount	Location	Amount	Location	Amount
Foreign currency forward/option contracts	\$ 151	Cost of sales	\$ (95)	Cost of sales	\$ —
Interest rate swap contracts	(18)	Interest expense	(1)	Interest expense	—
Total	\$ 133		\$ (96)		\$ —
Year ended December 31, 2017 (Millions)	Portion of Derivative	Comprehensive Income	Recognized in Income		
	Amount	Location	Amount	Location	Amount
Foreign currency forward/option contracts	\$ (305)	Cost of sales	\$ 8	Cost of sales	\$ —
Interest rate swap contracts	(6)	Interest expense	(1)	Interest expense	—
Total	\$ (311)		\$ 7		\$ —
Year ended December 31, 2016 (Millions)	Portion of Derivative	Comprehensive Income	Recognized in Income		
	Amount	Location	Amount	Location	Amount
Foreign currency forward/option contracts	\$ 58	Cost of sales	\$ 110	Cost of sales	\$ —
Interest rate swap contracts	(1)	Interest expense	(1)	Interest expense	—
Total	\$ 57		\$ 109		\$ —

Fair Value Hedges:

For derivative instruments that are designated and qualify as fair value hedges, the gain or loss on the derivatives as well as the offsetting loss or gain on the hedged item attributable to the hedged risk are recognized in current earnings.

Fair Value Hedging - Interest Rate Swaps: The Company manages interest expense using a mix of fixed and floating rate debt. To help manage borrowing costs, the Company may enter into interest rate swaps. Under these arrangements, the Company agrees to exchange, at specified intervals, the difference between fixed and floating

interest amounts calculated by reference to an agreed-upon notional principal amount. The mark-to-market of these fair value hedges is recorded as gains or losses in interest expense and is offset by the gain or loss of the underlying debt instrument, which also is recorded in interest expense. These fair value hedges are highly effective and, thus, there is no impact on earnings due to hedge ineffectiveness.

In November 2013, 3M issued a Eurobond due in 2021 for a face amount of 600 million Euros. Upon debt issuance, 3M completed a fixed-to-floating interest rate swap on a notional amount of 300 million Euros as a fair value hedge of a portion of the fixed interest rate Eurobond obligation.

In June 2014, 3M issued \$950 million aggregate principal amount of medium-term notes. Upon debt issuance, the Company entered into an interest rate swap to convert \$600 million of a \$625 million note that is due in 2019 included in this issuance to an interest rate based on a floating three-month LIBOR index as a fair value hedge of a portion of the fixed interest rate medium-term note obligation.

In August 2015, 3M issued \$1.5 billion aggregate principal amount of medium-term notes. Upon debt issuance, the Company entered into two interest rate swaps as fair value hedges of a portion of the fixed interest rate medium-term note obligation. The first converted a \$450 million three-year fixed rate note that matured in August 2018, and the second converted \$300 million of a five-year fixed rate note that is due in 2020 included in this issuance to an interest rate based on a floating three-month LIBOR index.

In the fourth quarter of 2017, the Company entered into an interest rate swap with a notional amount of \$200 million that converted the company's fixed-rate medium-term note due 2020 into a floating-rate note as a hedge of its exposure to changes in the fair value that is attributable to interest rate risk.

In September 2018, the Company entered into an interest rate swap with a notional amount of \$200 million that converted a portion of the Company's \$400 million aggregate principal amount of fixed rate medium-term notes due 2021 into a floating rate note with an interest rate based on a three-month LIBOR index as a hedge of its exposure to changes in fair value that are attributable to interest rate risk.

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The location in the consolidated statements of income and amounts of gains and losses related to derivative instruments designated as fair value hedges and similar information relative to the hedged items are as follows:

Year ended December 31, 2018 (Millions)	Gain (Loss) on Derivative Recognized in Income		Gain (Loss) on Hedged Item Recognized in Income	
	Location	Amount	Location	Amount
Interest rate swap contracts	Interest expense	\$ (5)	Interest expense	\$ 5
Total		\$ (5)		\$ 5

Year ended December 31, 2017 (Millions)	Location		Location	
	Location	Amount	Location	Amount
Interest rate swap contracts	Interest expense	\$ (9)	Interest expense	\$ 9
Total		\$ (9)		\$ 9

Year ended December 31, 2016 (Millions)	Location		Location	
	Location	Amount	Location	Amount
Interest rate swap contracts	Interest expense	\$ (2)	Interest expense	\$ 2
Total		\$ (2)		\$ 2

Net Investment Hedges:

The Company may use non-derivative (foreign currency denominated debt) and derivative (foreign exchange forward contracts) instruments to hedge portions of the Company's investment in foreign subsidiaries and manage foreign exchange risk. For instruments that are designated and qualify as hedges of net investments in foreign operations and that meet the effectiveness requirements, the net gains or losses attributable to changes in spot exchange rates are recorded in cumulative translation within other comprehensive income. The remainder of the change in value of such instruments is recorded in earnings. Recognition in earnings of amounts previously recorded in cumulative translation is limited to circumstances such as complete or substantially complete liquidation of the net investment in the hedged foreign operation. To the extent foreign currency denominated debt is not designated in or is dedesignated from a net investment hedge relationship, changes in value of that portion of foreign currency denominated debt due to exchange rate changes are recorded in earnings through their maturity date.

3M's use of foreign exchange forward contracts designated in hedges of the Company's net investment in foreign subsidiaries can vary by time period depending on when foreign currency denominated debt balances designated in such relationships are dedesignated, matured, or are newly issued and designated. Additionally, variation can occur in connection with the extent of the Company's desired foreign exchange risk coverage.

During the first quarter of 2018, the Company dedesignated 300 million Euros of foreign currency denominated debt from a former net investment hedge relationship.

At December 31, 2018, the total notional amount of foreign exchange forward contracts designated in net investment hedges was approximately 150 million Euros and approximately 248 billion South Korean Won, along with a principal amount of long-term debt instruments designated in net investment hedges totaling 4.1 billion Euros. The maturity dates of these derivative and nonderivative instruments designated in net investment hedges range from 2019 to 2031.

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The location in the consolidated statements of income and comprehensive income and amounts of gains and losses related to derivative and nonderivative instruments designated as net investment hedges are as follows. There were no reclassifications of the effective portion of net investment hedges out of accumulated other comprehensive income into income for the periods presented in the table below.

Year ended December 31, 2018 (Millions)	Pretax Gain (Loss) Recognized as Cumulative Translation within Other Comprehensive Income on Effective Portion of Instrument Amount	Ineffective Portion of Gain (Loss) on Instrument and Amount Excluded from Effectiveness Testing Recognized in Income	
		Location	Amount
Foreign currency denominated debt	\$ 222	Cost of sales	\$ (2)
Foreign currency forward contracts	18	Cost of sales	4
Total	\$ 240		\$ 2

Year ended December 31, 2017 (Millions)	Comprehensive Income Amount	Instrument and Amount Excluded	
		Location	Amount
Foreign currency denominated debt	\$ (667)	N/A	\$ —
Foreign currency forward contracts	(58)	Cost of sales	7
Total	\$ (725)		\$ 7

Year ended December 31, 2016 (Millions)	Comprehensive Income Amount	Instrument and Amount Excluded	
		Location	Amount
Foreign currency denominated debt	\$ 215	N/A	\$ —
Foreign currency forward contracts	(9)	Cost of sales	(3)
Total	\$ 206		\$ (3)

Derivatives Not Designated as Hedging Instruments:

Derivatives not designated as hedging instruments include dedesignated foreign currency forward and option contracts that formerly were designated in cash flow hedging relationships (as referenced in the Cash Flow Hedges section above). In addition, 3M enters into foreign currency forward contracts to offset, in part, the impacts of certain intercompany activities (primarily associated with intercompany licensing arrangements) and enters into commodity price swaps to offset, in part, fluctuations in costs associated with the use of certain commodities and precious metals. These derivative instruments are not designated in hedging relationships; therefore, fair value gains and losses on these contracts are recorded in earnings. The Company does not hold or issue derivative financial instruments for trading purposes.

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The location in the consolidated statements of income and amounts of gains and losses related to derivative instruments not designated as hedging instruments are as follows:

(Millions)	Location	Gain (Loss) on Derivative Recognized in Income		
		Year ended December 31,		
		2018	2017	2016
		Amount	Amount	Amount
Foreign currency forward/option contracts	Cost of sales	\$ 13	\$ 11	\$ (14)
Foreign currency forward contracts	Interest expense	(109)	(141)	9
Total		\$ (96)	\$ (130)	\$ (5)

Location and Fair Value Amount of Derivative Instruments:

The following tables summarize the fair value of 3M's derivative instruments, excluding nonderivative instruments used as hedging instruments, and their location in the consolidated balance sheet. Notional amounts below are presented at period end foreign exchange rates, except for certain interest rate swaps, which are presented using the inception date's foreign exchange rate. Additional information with respect to the fair value of derivative instruments is included in Note 15.

December 31, 2018	Gross Notional Amount	Assets Location	Fair Value Amount	Liabilities	
				Location	Fair Value Amount
(Millions)					
Derivatives designated as hedging instruments					
Foreign currency forward/option contracts	\$ 2,277	Other current assets	\$ 74	Other current liabilities	\$ 12
Foreign currency forward/option contracts	1,099	Other assets	39	Other liabilities	4
Interest rate swap contracts	1,000	Other current assets	—	Other current liabilities	14
Interest rate swap contracts	1,403	Other assets	19	Other liabilities	17
Total derivatives designated as hedging instruments			\$ 132		\$ 47
Derivatives not designated as hedging instruments					
Foreign currency forward/option contracts	\$ 2,484	Other current assets	\$ 14	Other current liabilities	\$ 6
Total derivatives not designated as hedging instruments			\$ 14		\$ 6

Total derivative instruments \$ 146 \$ 53

December 31, 2017	Gross Notional	Assets	Fair Value	Liabilities	Fair Value
(Millions)	Amount	Location	Amount	Location	Amount
Derivatives designated as hedging instruments					
Foreign currency forward/option contracts	\$ 2,204	Other current assets	\$ 7	Other current liabilities	\$ 109
Foreign currency forward/option contracts	1,392	Other assets	20	Other liabilities	56
Interest rate swap contracts	450	Other current assets	—	Other current liabilities	1
Interest rate swap contracts	1,503	Other assets	21	Other liabilities	6
Total derivatives designated as hedging instruments			\$ 48		\$ 172
Derivatives not designated as hedging instruments					
Foreign currency forward/option contracts	\$ 4,974	Other current assets	\$ 30	Other current liabilities	\$ 25
Total derivatives not designated as hedging instruments			\$ 30		\$ 25
Total derivative instruments			\$ 78		\$ 197

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Credit Risk and Offsetting of Assets and Liabilities of Derivative Instruments:

The Company is exposed to credit loss in the event of nonperformance by counterparties in interest rate swaps, currency swaps, commodity price swaps, and forward and option contracts. However, the Company's risk is limited to the fair value of the instruments. The Company actively monitors its exposure to credit risk through the use of credit approvals and credit limits, and by selecting major international banks and financial institutions as counterparties. 3M enters into master netting arrangements with counterparties when possible to mitigate credit risk in derivative transactions. A master netting arrangement may allow each counterparty to net settle amounts owed between a 3M entity and the counterparty as a result of multiple, separate derivative transactions. As of December 31, 2018, 3M has International Swaps and Derivatives Association (ISDA) agreements with 17 applicable banks and financial institutions which contain netting provisions. In addition to a master agreement with 3M supported by a primary counterparty's parent guarantee, 3M also has associated credit support agreements in place with 16 of its primary derivative counterparties which, among other things, provide the circumstances under which either party is required to post eligible collateral (when the market value of transactions covered by these agreements exceeds specified thresholds or if a counterparty's credit rating has been downgraded to a predetermined rating). The Company does not anticipate nonperformance by any of these counterparties.

3M has elected to present the fair value of derivative assets and liabilities within the Company's consolidated balance sheet on a gross basis even when derivative transactions are subject to master netting arrangements and may otherwise qualify for net presentation. However, the following tables provide information as if the Company had elected to offset the asset and liability balances of derivative instruments, netted in accordance with various criteria in the event of default or termination as stipulated by the terms of netting arrangements with each of the counterparties. For each counterparty, if netted, the Company would offset the asset and liability balances of all derivatives at the end of the reporting period based on the 3M entity that is a party to the transactions. Derivatives not subject to master netting agreements are not eligible for net presentation. As of the applicable dates presented below, no cash collateral had been received or pledged related to these derivative instruments.

Offsetting of Financial Assets under Master Netting Agreements with Derivative Counterparties

December 31, 2018 (Millions)	Gross Amount of Derivative Assets Presented in the Consolidated Balance Sheet	Gross Amounts not Offset in the Consolidated Balance Sheet that are Subject to Master Netting Agreements		
		Gross Amount of Eligible Offsetting Recognized Derivative Liabilities	Cash Collateral Received	Net Amount of Derivative Assets
Derivatives subject to master netting agreements	\$ 146	\$ 38	\$ —	\$ 108
Derivatives not subject to master netting agreements	—			—

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Total \$ 146 \$ 108

December 31, 2017

(Millions)

Derivatives subject to master netting agreements	\$ 78	\$ 27	\$ —	\$ 51
Derivatives not subject to master netting agreements	—			—
Total	\$ 78			\$ 51

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Offsetting of Financial Liabilities under Master Netting Agreements with Derivative Counterparties

December 31, 2018 (Millions)	Gross Amount of Derivative Liabilities Presented in the Consolidated Balance Sheet	Gross Amounts not Offset in the Consolidated Balance Sheet that are Subject to Master Netting Agreements			Net Amount of Derivative Liabilities
		Gross Amount of Eligible Offsetting Recognized Derivative Assets	Cash Collateral Pledged		
Derivatives subject to master netting agreements	\$ 53	\$ 38	\$ —		\$ 15
Derivatives not subject to master netting agreements	—				—
Total	\$ 53				\$ 15

December 31, 2017
(Millions)

Derivatives subject to master netting agreements	\$ 197	\$ 27	\$ —	\$ 170
Derivatives not subject to master netting agreements	—			—
Total	\$ 197			\$ 170

Foreign Currency Effects

3M estimates that year-on-year foreign currency transaction effects, including hedging impacts, decreased pre-tax income by approximately \$92 million and approximately \$152 million in 2018 and 2017, respectively. These estimates include transaction gains and losses, including derivative instruments designed to reduce foreign currency exchange rate risks.

NOTE 15. Fair Value Measurements

3M follows ASC 820, Fair Value Measurements and Disclosures, with respect to assets and liabilities that are measured at fair value on a recurring basis and nonrecurring basis. Under the standard, fair value is defined as the exit price, or the amount that would be received to sell an asset or paid to transfer a liability in an orderly transaction

between market participants as of the measurement date. The standard also establishes a hierarchy for inputs used in measuring fair value that maximizes the use of observable inputs and minimizes the use of unobservable inputs by requiring that the most observable inputs be used when available. Observable inputs are inputs market participants would use in valuing the asset or liability developed based on market data obtained from sources independent of the Company. Unobservable inputs are inputs that reflect the Company's assumptions about the factors market participants would use in valuing the asset or liability developed based upon the best information available in the circumstances. The hierarchy is broken down into three levels. Level 1 inputs are quoted prices (unadjusted) in active markets for identical assets or liabilities. Level 2 inputs include quoted prices for similar assets or liabilities in active markets, quoted prices for identical or similar assets or liabilities in markets that are not active, and inputs (other than quoted prices) that are observable for the asset or liability, either directly or indirectly. Level 3 inputs are unobservable inputs for the asset or liability. Categorization within the valuation hierarchy is based upon the lowest level of input that is significant to the fair value measurement.

Assets and Liabilities that are Measured at Fair Value on a Recurring Basis:

For 3M, assets and liabilities that are measured at fair value on a recurring basis primarily relate to available-for-sale marketable securities and certain derivative instruments. Derivatives include cash flow hedges, interest rate swaps and net investment hedges. The information in the following paragraphs and tables primarily addresses matters relative to these financial assets and liabilities. Separately, there were no material fair value measurements with respect to nonfinancial assets or liabilities that are recognized or disclosed at fair value in the Company's financial statements on a recurring basis for 2018 and 2017.

3M uses various valuation techniques, which are primarily based upon the market and income approaches, with respect to financial assets and liabilities. Following is a description of the valuation methodologies used for the respective financial assets and liabilities measured at fair value.

Available-for-sale marketable securities — except certain U.S. municipal securities:

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Marketable securities, except certain U.S. municipal securities, are valued utilizing multiple sources. A weighted average price is used for these securities. Market prices are obtained for these securities from a variety of industry standard data providers, security master files from large financial institutions, and other third-party sources. These multiple prices are used as inputs into a distribution-curve-based algorithm to determine the daily fair value to be used. 3M classifies U.S. treasury securities as level 1, while all other marketable securities (excluding certain U.S. municipal securities) are classified as level 2. Marketable securities are discussed further in Note 11.

Available-for-sale marketable securities —certain U.S. municipal securities only:

3M holds municipal securities with certain cities in the United States as of December 31, 2018. Due to the nature of these securities, the valuation method utilized includes referencing the carrying value of the corresponding capital lease obligation as adjusted for additional issuances when 3M sells its assets to the municipality and decreases in the form of bond amortization payments, and as such will be classified as level 3 securities separately. Refer to Note 9 for additional discussion of the non-cash nature of these securities.

Derivative instruments:

The Company's derivative assets and liabilities within the scope of ASC 815, Derivatives and Hedging, are required to be recorded at fair value. The Company's derivatives that are recorded at fair value include foreign currency forward and option contracts, commodity price swaps, interest rate swaps, and net investment hedges where the hedging instrument is recorded at fair value. Net investment hedges that use foreign currency denominated debt to hedge 3M's net investment are not impacted by the fair value measurement standard under ASC 820, as the debt used as the hedging instrument is marked to a value with respect to changes in spot foreign currency exchange rates and not with respect to other factors that may impact fair value.

3M has determined that foreign currency forwards, commodity price swaps, currency swaps, foreign currency options, interest rate swaps and cross-currency swaps will be considered level 2 measurements. 3M uses inputs other than quoted prices that are observable for the asset. These inputs include foreign currency exchange rates, volatilities, and interest rates. Derivative positions are primarily valued using standard calculations/models that use as their basis readily observable market parameters. Industry standard data providers are 3M's primary source for forward and spot rate information for both interest rates and currency rates, with resulting valuations periodically validated through third-party or counterparty quotes and a net present value stream of cash flows model.

The following tables provide information by level for assets and liabilities that are measured at fair value on a recurring basis.

Description (Millions)	Fair Value at December 31, 2018	Fair Value Measurements Using Inputs Considered as		
		Level 1	Level 2	Level 3
Assets:				
Available-for-sale:				
Marketable securities:				
Commercial paper	\$ 366	\$ —	\$ 366	\$ —
Certificates of deposit/time deposits	10	—	10	—
Asset-backed securities:				
Automobile loan related	1	—	1	—
U.S. municipal securities	40	—	—	40
Derivative instruments — assets:				
Foreign currency forward/option contracts	127	—	127	—
Interest rate swap contracts	19	—	19	—
Liabilities:				
Derivative instruments — liabilities:				
Foreign currency forward/option contracts	22	—	22	—
Interest rate swap contracts	31	—	31	—

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Description (Millions)	Fair Value at December 31, 2017	Fair Value Measurements Using Inputs Considered as		
		Level 1	Level 2	Level 3
Assets:				
Available-for-sale:				
Marketable securities:				
Corporate debt securities	\$ 14	\$ —	\$ 14	\$ —
Commercial paper	899	—	899	—
Certificates of deposit/time deposits	76	—	76	—
Asset-backed securities:				
Automobile loan related	16	—	16	—
Credit card related	68	—	68	—
U.S. municipal securities	30	—	—	30
Derivative instruments — assets:				
Foreign currency forward/option contracts	57	—	57	—
Interest rate swap contracts	21	—	21	—
Liabilities:				
Derivative instruments — liabilities:				
Foreign currency forward/option contracts	190	—	190	—
Interest rate swap contracts	7	—	7	—

The following table provides a reconciliation of the beginning and ending balances of items measured at fair value on a recurring basis in the table above that used significant unobservable inputs (level 3).

Marketable securities — certain U.S. municipal securities only (Millions)	2018	2017	2016
Beginning balance	\$ 30	\$ 20	\$ 12
Total gains or losses:			
Included in earnings	—	—	—
Included in other comprehensive income	—	—	—
Purchases and issuances	13	13	12
Sales and settlements	(3)	(3)	(4)
Transfers in and/or out of level 3	—	—	—
Ending balance	40	30	20
Change in unrealized gains or losses for the period included in earnings for securities held at the end of the reporting period	—	—	—

In addition, the plan assets of 3M's pension and postretirement benefit plans are measured at fair value on a recurring basis (at least annually). Refer to Note 13.

Assets and Liabilities that are Measured at Fair Value on a Nonrecurring Basis:

Disclosures are required for certain assets and liabilities that are measured at fair value, but are recognized and disclosed at fair value on a nonrecurring basis in periods subsequent to initial recognition. For 3M, such measurements of fair value relate primarily to long-lived asset impairments and adjustment in carrying value of equity securities for which the measurement alternative of cost less impairment plus or minus observable price changes is used. During 2017, the Company recognized approximately \$61 million in long-lived asset impairments within its Electronics and Energy and Industrial business segments, with the complete carrying amount of such assets written off and included in operating income results. There were no material long-lived asset impairments for 2018 and 2016. There were no material adjustments to equity securities using the measurement alternative for 2018.

Fair Value of Financial Instruments:

The Company's financial instruments include cash and cash equivalents, marketable securities, accounts receivable, certain investments, accounts payable, borrowings, and derivative contracts. The fair values of cash equivalents, accounts receivable,

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accounts payable, and short-term borrowings and current portion of long-term debt approximated carrying values because of the short-term nature of these instruments. Available-for-sale marketable securities, in addition to certain derivative instruments, are recorded at fair values as indicated in the preceding disclosures. To estimate fair values (classified as level 2) for its long-term debt, the Company utilized third-party quotes, which are derived all or in part from model prices, external sources, market prices, or the third-party's internal records. Information with respect to the carrying amounts and estimated fair values of these financial instruments follow:

(Millions)	December 31, 2018		December 31, 2017	
	Carrying Value	Fair Value	Carrying Value	Fair Value
Long-term debt, excluding current portion	\$ 13,411	\$ 13,586	\$ 12,096	\$ 12,535

The fair values reflected above consider the terms of the related debt absent the impacts of derivative/hedging activity. The carrying amount of long-term debt referenced above is impacted by certain fixed-to-floating interest rate swaps that are designated as fair value hedges and by the designation of fixed rate Eurobond securities issued by the Company as hedging instruments of the Company's net investment in its European subsidiaries. Many of 3M's fixed-rate bonds were trading at a premium at December 31, 2018 and 2017 due to the lower interest rates and tighter credit spreads compared to issuance levels.

NOTE 16. Commitments and Contingencies

Capital and Operating Leases:

Rental expense under operating leases was \$393 million in 2018, \$343 million in 2017 and \$318 million in 2016. It is 3M's practice to secure renewal rights for leases, thereby giving 3M the right, but not the obligation, to maintain a presence in a leased facility. 3M has the following primary capital leases:

- In 2003, 3M recorded a capital lease asset and obligation of approximately 34 million British Pound (GBP), or approximately \$43 million at December 31, 2018, exchange rates, for a building in the United Kingdom (with a lease term of 22 years).
- 3M sold and leased-back certain recently constructed machinery and equipment in return for municipal securities, which in aggregate, were recorded as a capital lease asset and obligation of approximately \$13 million in 2018, \$13 million in 2017, and \$12 million in 2016, with an average remaining lease term remaining of 15 years at December 31, 2018.

Minimum lease payments under capital and operating leases with non-cancelable terms in excess of one year as of December 31, 2018, were as follows:

(Millions)	Capital Leases	Operating Leases
2019	\$ 18	\$ 283
2020	16	208
2021	14	153
2022	12	122
2023	12	92
After 2023	32	253
Total	\$ 104	\$ 1,111
Less: Amounts representing interest	12	
Present value of future minimum lease payments	92	
Less: Current obligations under capital leases	17	
Long-term obligations under capital leases	\$ 75	

Unconditional Purchase Obligations:

Unconditional purchase obligations are defined as an agreement to purchase goods or services that is enforceable and legally binding (non-cancelable, or cancelable only in certain circumstances). The Company estimates its total unconditional purchase obligation commitment (for those contracts with terms in excess of one year) as of December 31, 2018, at \$663 million. Payments by year are estimated as follows: 2019 (\$244 million), 2020 (\$216 million), 2021 (\$131 million), 2022 (\$40 million), 2023 (\$15 million) and after 2023 (\$17 million). Many of these commitments relate to take or pay contracts, in which 3M guarantees payment to ensure availability of products or services that are sold to customers. The Company expects to receive consideration (products or services) for these

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unconditional purchase obligations. The purchase obligation amounts do not represent the entire anticipated purchases in the future, but represent only those items for which the Company is contractually obligated. The majority of 3M's products and services are purchased as needed, with no unconditional commitment. For this reason, these amounts will not provide an indication of the Company's expected future cash outflows related to purchases.

Warranties/Guarantees:

3M's accrued product warranty liabilities, recorded on the Consolidated Balance Sheet as part of current and long-term liabilities, are estimated at approximately \$48 million at December 31, 2018, and \$50 million at December 31, 2017. Further information on product warranties are not disclosed, as the Company considers the balance immaterial to its consolidated results of operations and financial condition. The fair value of 3M guarantees of loans with third parties and other guarantee arrangements are not material.

Related Party Activity:

3M does not have any material related party activity.

Legal Proceedings:

The Company and some of its subsidiaries are involved in numerous claims and lawsuits, principally in the United States, and regulatory proceedings worldwide. These include various products liability (involving products that the Company now or formerly manufactured and sold), intellectual property, and commercial claims and lawsuits, including those brought under the antitrust laws, and environmental proceedings. Unless otherwise stated, the Company is vigorously defending all such litigation.

Process for Disclosure and Recording of Liabilities and Insurance Receivables Related to Legal Proceedings

Many lawsuits and claims involve highly complex issues relating to causation, scientific evidence, and whether there are actual damages and are otherwise subject to substantial uncertainties. Assessments of lawsuits and claims can involve a series of complex judgments about future events and can rely heavily on estimates and assumptions. The Company complies with the requirements of ASC 450, Contingencies, and related guidance, and records liabilities for legal proceedings in those instances where it can reasonably estimate the amount of the loss and where liability is probable. Where the reasonable estimate of the probable loss is a range, the Company records the most likely estimate

of the loss, or the low end of the range if there is no one best estimate. The Company either discloses the amount of a possible loss or range of loss in excess of established accruals if estimable, or states that such an estimate cannot be made. The Company discloses significant legal proceedings even where liability is not probable or the amount of the liability is not estimable, or both, if the Company believes there is at least a reasonable possibility that a loss may be incurred.

The Company estimates insurance receivables based on an analysis of its numerous policies, including their exclusions, pertinent case law interpreting comparable policies, its experience with similar claims, and assessment of the nature of the claim and remaining coverage, and records an amount it has concluded is likely to be recovered. For those insured matters where the Company has taken an accrual, the Company also records receivables for the amount of insurance that it expects to recover under the Company's insurance program. For those insured matters where the Company has not taken an accrual because the liability is not probable or the amount of the liability is not estimable, or both, but where the Company has incurred an expense in defending itself, the Company records receivables for the amount of insurance that it expects to recover for the expense incurred.

Because litigation is subject to inherent uncertainties, and unfavorable rulings or developments could occur, there can be no certainty that the Company may not ultimately incur charges in excess of presently recorded liabilities. A future adverse ruling, settlement, unfavorable development, or increase in accruals for one or more of these matters could result in future charges that could have a material adverse effect on the Company's results of operations or cash flows in the period in which they are recorded. Although the Company cannot estimate its exposure to all legal proceedings, the Company currently believes that the ultimate outcome of legal proceedings or future charges, if any, would not have a material adverse effect on the consolidated financial position of the Company. Based on experience and developments, the Company reexamines its estimates of probable liabilities and associated expenses and receivables each period, and whether it is able to estimate a liability previously determined to be not estimable and/or not probable. Where appropriate, the Company makes additions to or adjustments of its estimated liabilities. As a result, the current estimates of the potential impact on the Company's consolidated financial position, results of operations and cash flows for the legal proceedings and claims pending against the Company could change in the future.

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The following sections first describe the significant legal proceedings in which the Company is involved, and then describe the liabilities and associated insurance receivables the Company has accrued relating to its significant legal proceedings.

Respirator Mask/Asbestos Litigation

As of December 31, 2018, the Company is a named defendant, with multiple co-defendants, in numerous lawsuits in various courts that purport to represent approximately 2,320 individual claimants, compared to approximately 2,230 individual claimants with actions pending at December 31, 2017.

The vast majority of the lawsuits and claims resolved by and currently pending against the Company allege use of some of the Company's mask and respirator products and seek damages from the Company and other defendants for alleged personal injury from workplace exposures to asbestos, silica, coal mine dust or other occupational dusts found in products manufactured by other defendants or generally in the workplace. A minority of the lawsuits and claims resolved by and currently pending against the Company generally allege personal injury from occupational exposure to asbestos from products previously manufactured by the Company, which are often unspecified, as well as products manufactured by other defendants, or occasionally at Company premises.

The Company's current volume of new and pending matters is substantially lower than it experienced at the peak of filings in 2003. The Company expects that filing of claims by unimpaired claimants in the future will continue to be at much lower levels than in the past. Accordingly, the number of claims alleging more serious injuries, including mesothelioma, other malignancies, and black lung disease, will represent a greater percentage of total claims than in the past. Over the past twenty years, the Company has prevailed in fourteen of the fifteen cases tried to a jury (including the lawsuits in 2018 described below). In 2018, 3M received a jury verdict in its favor in two lawsuits – one in California state court in February and the other in Massachusetts state court in December – both involving allegations that 3M respirators were defective and failed to protect the plaintiffs against asbestos fibers. In April 2018, a jury in state court in Kentucky found 3M's 8710 respirators failed to protect two coal miners from coal mine dust and awarded compensatory damages of approximately \$2 million and punitive damages totaling \$63 million. In August 2018, the trial court entered judgment and the Company has appealed. The Company believes liability in this case is not probable and estimable. In June 2018, the Company also settled a number of coal mine dust lawsuits for an amount that was not material to the Company.

The Company has demonstrated in these past trial proceedings that its respiratory protection products are effective as claimed when used in the intended manner and in the intended circumstances. Consequently, the Company believes that claimants are unable to establish that their medical conditions, even if significant, are attributable to the Company's respiratory protection products. Nonetheless the Company's litigation experience indicates that claims of persons alleging more serious injuries, including mesothelioma, other malignancies, and black lung disease, are

costlier to resolve than the claims of unimpaired persons, and it therefore believes the average cost of resolving pending and future claims on a per-claim basis will continue to be higher than it experienced in prior periods when the vast majority of claims were asserted by medically unimpaired claimants.

As previously reported, the State of West Virginia, through its Attorney General, filed a complaint in 2003 against the Company and two other manufacturers of respiratory protection products in the Circuit Court of Lincoln County, West Virginia, and amended its complaint in 2005. The amended complaint seeks substantial, but unspecified, compensatory damages primarily for reimbursement of the costs allegedly incurred by the State for worker's compensation and healthcare benefits provided to all workers with occupational pneumoconiosis and unspecified punitive damages. The case was inactive from the fourth quarter of 2007 until late 2013, other than a case management conference in March 2011. In November 2013, the State filed a motion to bifurcate the lawsuit into separate liability and damages proceedings. At the hearing on the motion, the court declined to bifurcate the lawsuit. No liability has been recorded for this matter because the Company believes that liability is not probable and estimable at this time. In addition, the Company is not able to estimate a possible loss or range of loss given the lack of any meaningful discovery responses by the State of West Virginia, the otherwise minimal activity in this case and the fact that the complaint asserts claims against two other manufacturers where a defendant's share of liability may turn on the law of joint and several liability and by the amount of fault, if any, a jury might allocate to each defendant if the case is ultimately tried.

Respirator Mask/Asbestos Liabilities and Insurance Receivables

The Company regularly conducts a comprehensive legal review of its respirator mask/asbestos liabilities. The Company reviews recent and historical claims data, including without limitation, (i) the number of pending claims filed against the Company, (ii) the

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nature and mix of those claims (i.e., the proportion of claims asserting usage of the Company's mask or respirator products and alleging exposure to each of asbestos, silica, coal or other occupational dusts, and claims pleading use of asbestos-containing products allegedly manufactured by the Company), (iii) the costs to defend and resolve pending claims, and (iv) trends in filing rates and in costs to defend and resolve claims, (collectively, the "Claims Data"). As part of its comprehensive legal review, the Company regularly provides the Claims Data to a third party with expertise in determining the impact of Claims Data on future filing trends and costs. The third party assists the Company in estimating the costs to defend and resolve pending and future claims. The Company uses these estimates to develop its best estimate of probable liability.

Developments may occur that could affect the Company's estimate of its liabilities. These developments include, but are not limited to, significant changes in (i) the key assumptions underlying the Company's accrual, including, the number of future claims, the nature and mix of those claims, the average cost of defending and resolving claims, and in maintaining trial readiness (ii) trial and appellate outcomes, (iii) the law and procedure applicable to these claims, and (iv) the financial viability of other co-defendants and insurers.

As a result of the Company's review of its respirator mask/asbestos liabilities and as a result of the cost of resolving claims of persons who claim more serious injuries, including mesothelioma, other malignancies, and black lung disease, the Company increased its accruals in 2018 for respirator mask/asbestos liabilities by \$141 million. In 2018, the Company made payments for legal fees and settlements of \$76 million related to the respirator mask/asbestos litigation. As of December 31, 2018, the Company had an accrual for respirator mask/asbestos liabilities (excluding Aearo accruals) of \$673 million, up \$65 million from the accrual at December 31, 2017. This accrual represents the Company's best estimate of probable loss and reflects an estimation period for future claims that may be filed against the Company approaching the year 2050. The Company cannot estimate the amount or upper end of the range of amounts by which the liability may exceed the accrual the Company has established because of the (i) inherent difficulty in projecting the number of claims that have not yet been asserted or the time period in which future claims may be asserted, (ii) the complaints nearly always assert claims against multiple defendants where the damages alleged are typically not attributed to individual defendants so that a defendant's share of liability may turn on the law of joint and several liability, which can vary by state, (iii) the multiple factors described above that the Company considers in estimating its liabilities, and (iv) the several possible developments described above that may occur that could affect the Company's estimate of liabilities.

As of December 31, 2018, the Company's receivable for insurance recoveries related to the respirator mask/asbestos litigation was \$4 million. The Company continues to seek coverage under the policies of certain insolvent and other insurers. Once those claims for coverage are resolved, the Company will have collected substantially all of its remaining insurance coverage for respirator mask/asbestos claims.

Respirator Mask/Asbestos Litigation — Aearo Technologies

On April 1, 2008, a subsidiary of the Company purchased the stock of Aearo Holding Corp., the parent of Aearo Technologies (“Aearo”). Aearo manufactured and sold various products, including personal protection equipment, such as eye, ear, head, face, fall and certain respiratory protection products.

As of December 31, 2018, Aearo and/or other companies that previously owned and operated Aearo’s respirator business (American Optical Corporation, Warner-Lambert LLC, AO Corp. and Cabot Corporation (“Cabot”)) are named defendants, with multiple co-defendants, including the Company, in numerous lawsuits in various courts in which plaintiffs allege use of mask and respirator products and seek damages from Aearo and other defendants for alleged personal injury from workplace exposures to asbestos, silica-related, coal mine dust, or other occupational dusts found in products manufactured by other defendants or generally in the workplace.

As of December 31, 2018, the Company, through its Aearo subsidiary, had accruals of \$28 million for product liabilities and defense costs related to current and future Aearo-related asbestos and silica-related claims. This accrual represents the Company’s best estimate of Aearo’s probable loss and reflects an estimation period for future claims that may be filed against Aearo approaching the year 2050. Responsibility for legal costs, as well as for settlements and judgments, is currently shared in an informal arrangement among Aearo, Cabot, American Optical Corporation and a subsidiary of Warner Lambert and their respective insurers (the “Payor Group”). Liability is allocated among the parties based on the number of years each company sold respiratory products under the “AO Safety” brand and/or owned the AO Safety Division of American Optical Corporation and the alleged years of exposure of the individual plaintiff. Aearo’s share of the contingent liability is further limited by an agreement entered into between Aearo and Cabot on July 11, 1995. This agreement provides that, so long as Aearo pays to Cabot a quarterly fee of \$100,000, Cabot will retain responsibility and liability for, and indemnify Aearo against, any product liability claims involving exposure to asbestos, silica, or

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silica products for respirators sold prior to July 11, 1995. Because of the difficulty in determining how long a particular respirator remains in the stream of commerce after being sold, Aearo and Cabot have applied the agreement to claims arising out of the alleged use of respirators involving exposure to asbestos, silica or silica products prior to January 1, 1997. With these arrangements in place, Aearo's potential liability is limited to exposures alleged to have arisen from the use of respirators involving exposure to asbestos, silica, or silica products on or after January 1, 1997. To date, Aearo has elected to pay the quarterly fee. Aearo could potentially be exposed to additional claims for some part of the pre-July 11, 1995 period covered by its agreement with Cabot if Aearo elects to discontinue its participation in this arrangement, or if Cabot is no longer able to meet its obligations in these matters.

Developments may occur that could affect the estimate of Aearo's liabilities. These developments include, but are not limited to: (i) significant changes in the number of future claims, (ii) significant changes in the average cost of resolving claims, (iii) significant changes in the legal costs of defending these claims, (iv) significant changes in the mix and nature of claims received, (v) trial and appellate outcomes, (vi) significant changes in the law and procedure applicable to these claims, (vii) significant changes in the liability allocation among the co-defendants, (viii) the financial viability of members of the Payor Group including exhaustion of available insurance coverage limits, and/or (ix) a determination that the interpretation of the contractual obligations on which Aearo has estimated its share of liability is inaccurate. The Company cannot determine the impact of these potential developments on its current estimate of Aearo's share of liability for these existing and future claims. If any of the developments described above were to occur, the actual amount of these liabilities for existing and future claims could be significantly larger than the amount accrued.

Because of the inherent difficulty in projecting the number of claims that have not yet been asserted, the complexity of allocating responsibility for future claims among the Payor Group, and the several possible developments that may occur that could affect the estimate of Aearo's liabilities, the Company cannot estimate the amount or range of amounts by which Aearo's liability may exceed the accrual the Company has established.

Environmental Matters and Litigation

The Company's operations are subject to environmental laws and regulations including those pertaining to air emissions, wastewater discharges, toxic substances, and the handling and disposal of solid and hazardous wastes enforceable by national, state, and local authorities around the world, and private parties in the United States and abroad. These laws and regulations provide, under certain circumstances, a basis for the remediation of contamination, for restoration of or compensation for damages to natural resources, and for personal injury and property damage claims. The Company has incurred, and will continue to incur, costs and capital expenditures in complying with these laws and regulations, defending personal injury and property damage claims, and modifying its business operations in light of its environmental responsibilities. In its effort to satisfy its environmental responsibilities and comply with environmental laws and regulations, the Company has established, and periodically updates, policies relating to environmental standards of performance for its operations worldwide.

Under certain environmental laws, including the United States Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and similar state laws, the Company may be jointly and severally liable, typically with other companies, for the costs of remediation of environmental contamination at current or former facilities and at off-site locations. The Company has identified numerous locations, most of which are in the United States, at which it may have some liability. Please refer to the section entitled “Environmental Liabilities and Insurance Receivables” that follows for information on the amount of the accrual.

Environmental Matters

As previously reported, the Company has been voluntarily cooperating with ongoing reviews by local, state, federal (primarily the U.S. Environmental Protection Agency (EPA)), and international agencies of possible environmental and health effects of various perfluorinated compounds, including perfluorooctanoate (“PFOA”), perfluorooctane sulfonate (“PFOS”), perfluorohexane sulfonate (“PFHxS”), or other per- and polyfluoroalkyl substances (collectively “PFAS”). As a result of its phase-out decision in May 2000, the Company no longer manufactures certain PFAS compounds including PFOA, PFOS, PFHxS, and their pre-cursor compounds. The company ceased manufacturing and using the vast majority of these compounds within approximately two years of the phase-out announcement and ceased all manufacturing and the last significant use of this chemistry by the end of 2008. The Company continues to manufacture a variety of shorter chain length PFAS compounds, including, but not limited to, pre-cursor compounds to perfluorobutane sulfonate (PFBS). These compounds are used as input materials to a variety of products, including engineered fluorinated fluids, fluoropolymers and fluorelastomers, as well as surfactants, additives, and coatings. Through its ongoing life cycle management and its raw material composition identification processes associated with the Company’s policies covering the use of all

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persistent and bio-accumulative materials, the Company continues to review, control or eliminate the presence of certain PFAS in purchased materials or as byproducts in some of 3M's current fluorochemical manufacturing processes, products, and waste streams.

Regulatory activities concerning PFOA and/or PFOS continue in the United States, Europe and elsewhere, and before certain international bodies. These activities include gathering of exposure and use information, risk assessment, and consideration of regulatory approaches. As the database of studies of both PFOA and PFOS has expanded, the EPA has developed human health effects documents summarizing the available data from these studies. In February 2014, the EPA initiated external peer review of its draft human health effects documents for PFOA and PFOS. The peer review panel met in August 2014. In May 2016, the EPA announced lifetime health advisory levels for PFOA and PFOS at 70 parts per trillion (ppt) (superseding the provisional levels established by the EPA in 2009 of 400 ppt for PFOA and 200 ppt for PFOS). Where PFOA and PFOS are found together, EPA recommends that the concentrations be added together, and the lifetime health advisory for PFOA and PFOS combined is also 70 ppt. Lifetime health advisories, which are non-enforceable and non-regulatory, provide information about concentrations of drinking water contaminants at which adverse health effects are not expected to occur over the specified exposure duration. To collect exposure information under the Safe Drinking Water Act, the EPA published on May 2, 2012 a list of unregulated substances, including six PFAS, required to be monitored during the period 2013-2015 by public water system suppliers to determine the extent of their occurrence. Through January 2017, the EPA reported results for 4,920 public water supplies nationwide. Based on the 2016 lifetime health advisory, 13 public water supplies exceed the level for PFOA and 46 exceed the level for PFOS (unchanged from the July 2016 EPA summary). A technical advisory issued by EPA in September 2016 on laboratory analysis of drinking water samples stated that 65 public water supplies had exceeded the combined level for PFOA and PFOS. These results are based on one or more samples collected during the period 2012-2015 and do not necessarily reflect current conditions of these public water supplies. EPA reporting does not identify the sources of the PFOA and PFOS in the public water supplies. EPA has announced a forthcoming management plan.

The Company is continuing to make progress in its work, under the supervision of state regulators, to address its historic disposal of PFAS-containing waste associated with manufacturing operations at the Decatur, Alabama, Cottage Grove, Minnesota, and Cordova, Illinois plants. As previously reported, the Company entered into a voluntary remedial action agreement with the Alabama Department of Environmental Management (ADEM) to address the presence of PFAS in the soil at the Company's manufacturing facility in Decatur, Alabama. Pursuant to a permit issued by ADEM, for approximately twenty years, the Company incorporated its wastewater treatment plant sludge containing PFAS in fields at its Decatur facility. After a review of the available options to address the presence of PFAS in the soil, ADEM agreed that the preferred remediation option is to use a multilayer cap over the former sludge incorporation areas on the manufacturing site with subsequent groundwater migration controls and treatment. Implementation of that plan continues, and construction of the cap was substantially completed in 2018.

The Company continues to work with the Minnesota Pollution Control Agency (MPCA) pursuant to the terms of the previously disclosed May 2007 Settlement Agreement and Consent Order to address the presence of certain PFAS in the soil and groundwater at former disposal sites in Washington County, Minnesota (Oakdale and Woodbury) and at the Company's manufacturing facility at Cottage Grove, Minnesota. Under this agreement, the Company's principal obligations include (i) evaluating releases of certain PFAS from these sites and proposing response actions; (ii) providing treatment or alternative drinking water upon identifying any level exceeding a Health Based Value

(“HBV”) or Health Risk Limit (“HRL”) (i.e., the amount of a chemical in drinking water determined by the Minnesota Department of Health (MDH) to be safe for human consumption over a lifetime) for certain PFAS for which a HBV and/or HRL exists as a result of contamination from these sites; (iii) remediating identified sources of other PFAS at these sites that are not controlled by actions to remediate PFOA and PFOS; and (iv) sharing information with the MPCA about certain perfluorinated compounds. During 2008, the MPCA issued formal decisions adopting remedial options for the former disposal sites in Washington County, Minnesota (Oakdale and Woodbury). In August 2009, the MPCA issued a formal decision adopting remedial options for the Company’s Cottage Grove manufacturing facility. During the spring and summer of 2010, 3M began implementing the agreed upon remedial options at the Cottage Grove and Woodbury sites. 3M commenced the remedial option at the Oakdale site in late 2010. At each location the remedial options were recommended by the Company and approved by the MPCA. Remediation work has been completed at the Oakdale and Woodbury sites, and they are in an operational maintenance mode. Remediation will continue at the Cottage Grove site during 2019.

In August 2014, the Illinois EPA approved a request by the Company to establish a groundwater management zone at its manufacturing facility in Cordova, Illinois, which includes ongoing pumping of impacted site groundwater, groundwater monitoring and routine reporting of results.

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In May 2017, the MDH issued new HBVs for PFOS and PFOA. The new HBVs are 35 ppt for PFOA and 27 ppt for PFOS. In connection with its announcement the MDH stated that “Drinking water with PFOA and PFOS, even at the levels above the updated values, does not represent an immediate health risk. These values are designed to reduce long-term health risks across the population and are based on multiple safety factors to protect the most vulnerable citizens, which makes them overprotective for most of the residents in our state.” In December 2017, the MDH issued a new HBV for perfluorobutane sulfonate (PFBS) of 2 ppb. In February 2018, the MDH published reports finding no unusual rates of certain cancers or adverse birth outcomes (low birth rates or premature births) among residents of Washington and Dakota counties in Minnesota.

The EPA announced a four-step action plan in May 2018 regarding PFAS, which includes evaluating the need to set Safe Drinking Water Act maximum contaminant levels (MCLs) for PFOA and PFOS and beginning the steps necessary to designate PFOA and PFOS as “hazardous substances” under CERCLA. In November 2018, EPA asked for public comment on draft toxicity assessments for two PFAS compounds, including PFBS.

The U.S. Agency for Toxic Substances and Disease Registry (ATSDR) within the Department of Health and Human Services released a draft Toxicological Profile for PFAS for public review and comment in June 2018. In the draft report, ATSDR proposed draft Minimal Risk Levels (MRLs) for PFOS, PFOA and several other PFAS. An MRL is an estimate of the daily human exposure to a hazardous substance that is likely to be without appreciable risk of adverse non-cancer health effects over a specified duration of exposure. MRLs are not intended to define cleanup or action levels for ATSDR or other agencies. In August 2018, 3M submitted comments on the ATSDR proposal, noting that there are major shortcomings with the current draft, especially with the MRLs, and that the ATSDR’s profile must reflect the best science and full weight of evidence known about these chemicals.

In several states, the state legislature or the state environmental agency have been evaluating or have taken actions related to cleanup standards, groundwater values or drinking water values for PFOS, PFOA, and other PFAS.

The Company cannot predict what additional regulatory actions arising from the foregoing proceedings and activities, if any, may be taken regarding such compounds or the consequences of any such actions.

Litigation Related to Historical PFAS Manufacturing Operations in Alabama

As previously reported, a former employee filed a putative class action lawsuit in 2002 in the Circuit Court of Morgan County, Alabama (the “St. John case”), seeking unstated damages and alleging that the plaintiffs suffered fear, increased risk, subclinical injuries, and property damage from exposure to certain perfluorochemicals at or near the Company’s Decatur, Alabama, manufacturing facility. The court in 2005 granted the Company’s motion to dismiss the named plaintiff’s personal injury-related claims on the basis that such claims are barred by the exclusivity provisions of the state’s Workers Compensation Act. The plaintiffs’ counsel filed an amended complaint in November 2006, limiting the

case to property damage claims on behalf of a putative class of residents and property owners in the vicinity of the Decatur plant. In June 2015, the plaintiffs filed an amended complaint adding additional defendants, including BFI Waste Management Systems of Alabama, LLC; BFI Waste Management of North America, LLC; the City of Decatur, Alabama; Morgan County, Alabama; Municipal Utilities Board of Decatur; and Morgan County, Alabama, d/b/a Decatur Utilities.

In 2005, the judge – in a second putative class action lawsuit filed by three residents of Morgan County, Alabama, seeking unstated compensatory and punitive damages involving alleged damage to their property from emissions of certain perfluorochemical compounds from the Company’s Decatur, Alabama, manufacturing facility that formerly manufactured those compounds (the “Chandler case”) – granted the Company’s motion to abate the case, effectively putting the case on hold pending the resolution of class certification issues in the St. John case. Despite the stay, plaintiffs filed an amended complaint seeking damages for alleged personal injuries and property damage on behalf of the named plaintiffs and the members of a putative class. No further action in the case is expected unless and until the stay is lifted.

In February 2009, a resident of Franklin County, Alabama, filed a putative class action lawsuit in the Circuit Court of Franklin County (the “Stover case”) seeking compensatory damages and injunctive relief based on the application by the Decatur utility’s wastewater treatment plant of wastewater treatment sludge to farmland and grasslands in the state that allegedly contain PFOA, PFOS and other perfluorochemicals. The named plaintiff seeks to represent a class of all persons within the State of Alabama who have had PFOA, PFOS, and other perfluorochemicals released or deposited on their property. In March 2010, the Alabama Supreme Court ordered the

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case transferred from Franklin County to Morgan County. In May 2010, consistent with its handling of the other matters, the Morgan County Circuit Court abated this case, putting it on hold pending the resolution of the class certification issues in the St. John case.

In October 2015, West Morgan-East Lawrence Water & Sewer Authority (Water Authority) filed an individual complaint against 3M Company, Dyneon, L.L.C, and Daikin America, Inc., in the U.S. District Court for the Northern District of Alabama. The complaint also includes representative plaintiffs who brought the complaint on behalf of themselves, and a class of all owners and possessors of property who use water provided by the Water Authority and five local water works to which the Water Authority supplies water (collectively, the “Water Utilities”). The complaint seeks compensatory and punitive damages and injunctive relief based on allegations that the defendants’ chemicals, including PFOA and PFOS from their manufacturing processes in Decatur, have contaminated the water in the Tennessee River at the water intake, and that the chemicals cannot be removed by the water treatment processes utilized by the Water Authority. In September 2016, the court granted 3M’s motion to dismiss plaintiffs’ trespass claims with prejudice, negligence claims for personal injuries, and private nuisance claims, and denied the motion to dismiss the plaintiffs’ negligence claims for property damage, public nuisance, abatement of nuisance, battery and wantonness.

In June 2016, the Tennessee Riverkeeper, Inc. (Riverkeeper), a non-profit corporation, filed a lawsuit in the U.S. District Court for the Northern District of Alabama against 3M; BFI Waste Systems of Alabama; the City of Decatur, Alabama; and the Municipal Utilities Board of Decatur, Morgan County, Alabama. The complaint alleges that the defendants violated the Resource Conservation and Recovery Act in connection with the disposal of certain PFAS through their ownership and operation of their respective sites. The complaint further alleges such practices may present an imminent and substantial endangerment to health and/or the environment and that Riverkeeper has suffered and will continue to suffer irreparable harm caused by defendants’ failure to abate the endangerment unless the court grants the requested relief, including declaratory and injunctive relief.

In August 2016, a group of over 200 plaintiffs filed a putative class action against West Morgan-East Lawrence Water and Sewer Authority (Water Authority), 3M, Dyneon, Daikin, BFI, and the City of Decatur in state court in Lawrence County, Alabama. Plaintiffs are residents of Lawrence, Morgan and other counties who are or have been customers of the Water Authority. They contend defendants have released PFAS that contaminate the Tennessee River and, in turn, their drinking water, causing damage to their health and properties. In January 2017, the court in the St. John case, discussed above, stayed this litigation pending resolution of the St. John case.

In January 2017, several hundred plaintiffs sued 3M, its subsidiary Dyneon, and Daikin America in Lawrence and Morgan Counties, Alabama. The plaintiffs are owners of property, residents, and holders of property interests who receive their water from the West Morgan-East Lawrence Water and Sewer Authority (Water Authority). They assert common law claims for negligence, nuisance, trespass, wantonness, and battery, and they seek injunctive relief and punitive damages. The plaintiffs contend that the defendants own and operate manufacturing and disposal facilities in Decatur that have released and continue to release PFOA, PFOS and related chemicals into the groundwater and surface water of their sites, resulting in discharge into the Tennessee River. The plaintiffs also contend that the defendants have discharged into Bakers Creek and the Decatur Utilities Dry Creek Wastewater Treatment Plant, which, in turn, discharges wastewater containing these chemicals into the Tennessee River. The plaintiffs contend

that, as a result of the alleged discharges, the water supplied by the Water Authority to the plaintiffs was, and is, contaminated with PFOA, PFOS, and related chemicals at a level dangerous to humans.

In November 2017, a putative class action (the “King” case) was filed against 3M, its subsidiary Dyneon, Daikin America, and the West Morgan-East Lawrence Water and Sewer Authority (Water Authority) in the U.S. District Court for the Northern District of Alabama. The plaintiffs are residents of Lawrence and Morgan County, Alabama who receive their water from the Water Authority. They assert various common law claims, including negligence, nuisance, wantonness, and fraudulent concealment, and they seek injunctive relief, attorneys’ fees, compensatory and punitive damages for their alleged personal injuries. The plaintiffs contend that the defendants own and operate manufacturing and disposal facilities in Decatur that have released and continue to release PFOA, PFOS and related chemicals into the groundwater and surface water of their sites, resulting in discharge into the Tennessee River. The plaintiffs also contend that the defendants have discharged chemicals into the Decatur Utilities Dry Creek Wastewater Treatment Plant, which, in turn, discharged wastewater containing these chemicals into the Tennessee River. The plaintiffs contend that, as a result of the alleged discharges, the water supplied by the Water Authority to the plaintiffs was, and is, contaminated with PFOA, PFOS, and related chemicals at a level dangerous to humans.

In January 2018, certain property owners in Trinity, Alabama filed a lawsuit against 3M, Dyneon, and three unnamed defendants in the U.S. District Court for the Northern District of Alabama. The plaintiffs assert claims for negligence, strict liability, trespass,

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nuisance, wanton and reckless conduct, and citizen suit claims for violation of the Resource Conservation and Recovery Act. They allege these claims arise from the defendants' contamination of their property by disposal of PFAS in a landfill located on their property. The plaintiffs seek compensatory and punitive damages and a court order directing the defendants to remediate all PFAS contamination on their property. In September 2018, the case was dismissed by stipulation of the parties.

In September 2018, an individual plaintiff filed a lawsuit in the U.S. District Court for the Northern District of Alabama raising allegations and claims substantially similar to those asserted by plaintiffs in the King case.

Litigation Related to Historical PFAS Manufacturing Operations in Minnesota

In July 2016, the City of Lake Elmo filed a lawsuit in the U.S. District Court for the District of Minnesota against 3M alleging that the City suffered damages from drinking water supplies contaminated with PFAS, including costs to construct alternative sources of drinking water. The parties mediated in August 2018 and again in December 2018. Although the parties did not reach a resolution, discussions continue. Trial is scheduled to begin in September 2019.

State Attorneys General Litigation related to PFAS

In December 2010, the State of Minnesota, by its Attorney General, filed a lawsuit in Hennepin County District Court against 3M to recover damages (including unspecified assessment costs and reasonable attorney's fees) for alleged injury to, destruction of, and loss of use of certain of the State's natural resources under the Minnesota Environmental Response and Liability Act (MERLA) and the Minnesota Water Pollution Control Act (MWPCA), as well as statutory nuisance and common law claims of trespass, nuisance, and negligence with respect to the presence of PFAS in the groundwater, surface water, fish or other aquatic life, and sediments (the "NRD Lawsuit"). The State also sought declarations under MERLA that 3M is responsible for all damages the State may suffer in the future for injuries to natural resources from releases of PFAS into the environment, and that 3M is responsible for compensation for future loss or destruction of fish, aquatic life, and other damages under the MWPCA. In September 2017, the State's damages expert submitted a report that contended the State incurred \$5 billion in damages. In November 2017, the State of Minnesota filed a motion for leave to amend its complaint to seek punitive damages from 3M, and 3M filed a motion for summary judgment contending, among other things, that the State's claims were barred by the applicable statute of limitations. In December 2017, the court urged the parties to attempt to resolve the litigation before trial, and in January 2018, the court appointed a mediator to facilitate that process. In February 2018, 3M and the State of Minnesota reached a resolution of the NRD Lawsuit. Under the terms of the settlement, 3M agreed to provide an \$850 million grant to the State for a special "3M Water Quality and Sustainability Fund." This Fund will enable projects that support water sustainability in the Twin Cities East Metro region, such as continued delivery of water to residents and enhancing groundwater recharge to support sustainable growth. The projects will also result in habitat and recreation improvements, such as fishing piers, trails, and open space preservation. 3M recorded a pre-tax charge of \$897 million, inclusive of legal fees and other related obligations, in the first quarter of 2018 associated with the resolution of this matter.

In June 2018, the State of New York, by its Attorney General, filed a lawsuit in Albany County Supreme Court against 3M, Tyco Fire Products LP, Chemguard, Inc., Buckeye Fire Equipment Co., National Foam, Inc., and Kidde-Fenwal, Inc., seeking to recover the costs incurred in responding to the contamination caused by Aqueous Film Forming Foam (AFFF) manufactured by 3M and others; damages for injury to, destruction of, and loss of the State's natural resources and related recreational series; and property damage.

In July 2018, the now former governor of Michigan requested that the now former Michigan Attorney General file a lawsuit against 3M and others related to PFAS in a public letter. The new Michigan Attorney General has not yet announced whether she will do so.

In December 2018, the State of Ohio, through its Attorney General, filed a lawsuit in the Common Pleas Court of Lucas County, Ohio against 3M, Tyco Fire Products LP, Chemguard, Inc., Buckeye Fire Equipment Co., National Foam, Inc., and Angus Fire Armour Corp., seeking injunctive relief and compensatory and punitive damages for remediation costs and alleged injury to Ohio natural resources from AFFF manufacturers.

Aqueous Film Forming Foam (AFFF) Environmental Litigation

3M manufactured and marketed AFFF for use in firefighting at airports and military bases from approximately 1963 to 2000. As of December 31, 2018, 85 putative class action and other lawsuits have been filed against 3M and other defendants in various state and federal courts in Arizona, Colorado, Delaware, Florida, Massachusetts, New Jersey, New York, Ohio, Pennsylvania, and Washington

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where current or former airports, military bases, or fire training facilities are or were located. In these cases, plaintiffs typically allege that certain PFAS used in AFFF contaminated the soil and groundwater where AFFF was used and seek damages for loss of use and enjoyment of properties, diminished property values, investigation costs, remediation costs, and in some cases, personal injury and funds for medical monitoring. Several companies have been sued along with 3M, including Ansul Co. (acquired by Tyco, Inc.), Angus Fire, Buckeye Fire Protection Co., Chemguard, National Foam, Inc., and United Technologies Corp.

In December 2018, the U.S. Judicial Panel on Multidistrict Litigation granted motions to transfer and consolidate all AFFF cases pending in federal courts to the U.S. District Court for the District of South Carolina to be managed in a multi-district litigation (MDL) proceeding to centralize pre-trial proceedings. As of December 31, 2018, there were 85 cases in the MDL.

Other PFAS-related Environmental Litigation

3M manufactured and sold products containing various perfluorooctanyl compounds (PFOA and PFOS), including Scotchgard, for several decades. Starting in 2017, 3M has been served with individual and putative class action complaints in various state and federal courts alleging, among other things, that 3M's customers' improper disposal of PFOA and PFOS resulted in the contamination of groundwater or surface water. The plaintiffs in these cases generally allege that 3M failed to warn its customers about the hazards of improper disposal of the product. They also generally allege that contaminated groundwater has caused various injuries, including personal injury, loss of use and enjoyment of their properties, diminished property values, investigation costs, and remediation costs. Several companies have been sued along with 3M, including Saint-Gobain Performance Plastics Corp., Honeywell International Inc. f/k/a Allied-Signal Inc. and/or AlliedSignal Laminate Systems, Inc., E.I. DuPont De Nemours and Co., and various carpet manufacturers.

In New York, 3M is defending 22 individual cases and one putative class action filed in the U.S. District Court for the Northern District of New York against 3M, Saint-Gobain Performance Plastics Corp. ("Saint-Gobain"), Honeywell International Inc. ("Honeywell") and E.I. DuPont De Nemours and Company. Plaintiffs allege that 3M manufactured and sold PFOA that was used for manufacturing purposes at Saint-Gobain's and Honeywell's facilities located in the Village of Hoosick Falls and the Town of Hoosick. Plaintiffs claim that the drinking water around Hoosick Falls became contaminated with unsafe levels of PFOA due to the activities of the defendants and allege that they suffered bodily injury due to the ingestion and inhalation of PFOA. Plaintiffs seek unstated compensatory, consequential, and punitive damages, as well as attorneys' fees and costs.

In Michigan, two putative class actions are pending in the U.S. District Court for the Western District of Michigan against 3M and Wolverine World Wide (Wolverine) and other defendants. The complaints include some or all of the following claims: negligence, trespass, intentional and negligent infliction of emotional distress, battery, products liability, public and private nuisance, fraudulent concealment, and unjust enrichment. The actions arise from Wolverine's allegedly improper disposal of materials and wastes related to their shoe manufacturing operations.

Plaintiffs allege Wolverine used 3M Scotchgard in its manufacturing process and that chemicals from 3M's product have contaminated the environment after being disposed of near drinking water sources. In addition to the two federal court class actions, as of December 31, 2018, 3M has been named as defendant in 214 private individual actions in Michigan state court based on similar allegations. Wolverine also filed a third-party complaint against 3M in a suit by the State of Michigan against Wolverine seeking to compel Wolverine to investigate and address contamination associated with its historic disposal activity.

In Alabama, 3M is defending two lawsuits filed in state court by local public water suppliers relating to 3M's sale of PFAS-containing products to carpet manufacturers in Georgia. The plaintiffs in these cases allege that the carpet manufacturers improperly discharged PFOA and PFOS into the surface water and groundwater, contaminating drinking water supplies of cities located downstream along the Coosa River.

In Delaware, 3M is defending one putative class action filed in federal court relating to alleged contamination allegedly caused by waste from Wolverine World Wide, which used Scotchgard in its manufacture of leather products. 3M allegedly supplied Scotchgard to Wolverine.

In Maine, 3M is defending one individual action in federal court relating to contamination of drinking water and dairy farm operations by PFAS from wastewater sludge. Plaintiffs contend that PFAS entered the wastewater via discharge from another company's facility in Kennebunk, Maine.

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In New Jersey, 3M is defending one putative class action in federal court that relates to the DuPont “Chambers Works” plant. Plaintiffs allege that PFAS compounds from the plant have contaminated private wells for drinking water.

In October 2018, 3M and other defendants, including DuPont and Chemours, were named in a putative class action in the U.S. District Court for the Southern District of Ohio. The named plaintiff, a firefighter allegedly exposed to PFAS chemicals through his use of firefighting foam, purports to represent a class of “all individuals residing within the United States who, at the time a class is certified in this case, have detectable levels of PFAS materials in their blood serum.” The plaintiff brings claims for negligence, battery, and conspiracy, but does not seek damages for personal injury, medical monitoring, or property damage. Instead, the plaintiff seeks an order finding the defendants “are liable and responsible for the PFAS in Plaintiff’s and the class members’ blood and/or bodies” and an order “establishing an independent panel of scientists” to be “tasked with independently studying, evaluating, reviewing, identifying, publishing, and notifying/informing the Class” of research results.

Other Environmental Litigation

In July 2018, the Company, along with more than 120 other companies, was served with a complaint seeking cost recovery and contribution towards the cleaning up of approximately eight miles of the Lower Passaic River in New Jersey. The plaintiff, Occidental Chemical Corporation, alleges that it agreed to design and pay the estimated \$165 million cost to remove and cap sediment containing eight chemicals of concern, including PCBs and dioxins. The complaint seeks to spread those costs among the defendants, including the Company. The Company’s involvement in the case relates to its past use of two commercial drum conditioning facilities in New Jersey. Whether, and to what extent, the Company may be required to contribute to the costs at issue in the case remains to be determined.

For environmental litigation matters described above, no liability has been recorded as the Company believes liability in those matters is not probable and estimable and the Company is not able to estimate a possible loss or range of loss at this time.

Environmental Liabilities and Insurance Receivables

As of December 31, 2018, the Company had recorded liabilities of \$25 million for estimated “environmental remediation” costs based upon an evaluation of currently available facts with respect to each individual site and also recorded related insurance receivables of \$8 million. The Company records liabilities for remediation costs on an undiscounted basis when they are probable and reasonably estimable, generally no later than the completion of feasibility studies or the Company’s commitment to a plan of action. Liabilities for estimated costs of environmental remediation, depending on the site, are based primarily upon internal or third-party environmental studies, and estimates as to the number, participation level and financial viability of any other potentially responsible parties, the extent of the contamination and the nature of required remedial actions. The Company adjusts recorded liabilities as

further information develops or circumstances change. The Company expects that it will pay the amounts recorded over the periods of remediation for the applicable sites, currently ranging up to 20 years.

As of December 31, 2018, the Company had recorded liabilities of \$59 million for “other environmental liabilities” based upon an evaluation of currently available facts to implement the Settlement Agreement and Consent Order with the MPCA (including the best estimate of the probable liability under the settlement of the NRD Lawsuit for interim treatment of municipal and private wells), the remedial action agreement with ADEM, as well as presence in the soil and groundwater at the Company’s manufacturing facilities in Decatur, Alabama, and Cottage Grove, Minnesota, and at two former disposal sites in Washington County, Minnesota (Oakdale and Woodbury). The Company expects that most of the spending will occur over the next four years.

It is difficult to estimate the cost of environmental compliance and remediation given the uncertainties regarding the interpretation and enforcement of applicable environmental laws and regulations, the extent of environmental contamination and the existence of alternative cleanup methods. Developments may occur that could affect the Company’s current assessment, including, but not limited to: (i) changes in the information available regarding the environmental impact of the Company’s operations and products; (ii) changes in environmental regulations, changes in permissible levels of specific compounds in drinking water sources, or changes in enforcement theories and policies, including efforts to recover natural resource damages; (iii) new and evolving analytical and remediation techniques; (iv) success in allocating liability to other potentially responsible parties; and (v) the financial viability of other potentially responsible parties and third-party indemnitors. For sites included in both “environmental remediation liabilities” and “other environmental liabilities,” at which remediation activity is largely complete and remaining activity relates primarily to operation and maintenance of the remedy, including required post-remediation monitoring, the Company believes the exposure to loss

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in excess of the amount accrued would not be material to the Company's consolidated results of operations or financial condition. However, for locations at which remediation activity is largely ongoing, the Company cannot estimate a possible loss or range of loss in excess of the associated established accruals for the reasons described above.

Other Matters

Department of Labor Investigation

The U.S. Department of Labor (DOL) notified 3M in April 2015 that it had commenced an investigation of 3M's pension plan pursuant to the federal Employee Retirement Income Security Act of 1974, as amended (ERISA). The DOL has stated its investigation relates to certain private equity investments, plan expenses, securities lending, and distributions of plan benefits. In response to certain DOL requests, 3M produced documents and made employees available for interviews. In December 2016, the DOL issued certain subpoenas to 3M and 3M Investment Management Corp. relating to this investigation. 3M has produced additional responsive documents and is cooperating with the DOL in its investigation. In June 2018, the DOL issued a letter indicating that it did not intend to take further action.

Product Liability Litigation

As of December 31, 2018, the Company is a named defendant in lawsuits involving approximately 5,015 plaintiffs (compared to approximately 4,270 plaintiffs at December 31, 2017) who allege the Bair Hugger™ patient warming system caused a surgical site infection. Nearly all of the lawsuits are pending in federal court in Minnesota. The plaintiffs claim they underwent various joint arthroplasty, cardiovascular, and other surgeries and later developed surgical site infections due to the use of the Bair Hugger™ patient warming system (the Bair Hugger™ product line was acquired by 3M as part of the 2010 acquisition of Arizant, Inc., a leading manufacturer of patient warming solutions designed to prevent hypothermia and maintain normal body temperature in surgical settings). The complaints seek damages and other relief based on theories of strict liability, negligence, breach of express and implied warranties, failure to warn, design and manufacturing defect, fraudulent and/or negligent misrepresentation/concealment, unjust enrichment, and violations of various state consumer fraud, deceptive or unlawful trade practices and/or false advertising acts. One case, from the U.S. District Court for the Western District of Tennessee is a putative nationwide class action. The U.S. Judicial Panel on Multidistrict Litigation (MDL) granted the plaintiffs' motion to transfer and consolidate all cases pending in federal courts to the U.S. District Court for the District of Minnesota to be managed in a multi-district proceeding during the pre-trial phase of the litigation. In 2017, the U.S. District Court and the Minnesota state courts denied the plaintiffs' motions to amend their complaints to add claims for punitive damages. At a joint hearing before the U.S. District Court and the Minnesota State court, on the parties' motion to exclude each other's experts, and 3M's motion for summary judgment with respect to general causation, the federal court did not exclude the plaintiffs' experts and denied 3M's motion for summary judgment on general causation. In January 2018, the state court, in hearing the same arguments, excluded plaintiffs' experts and granted 3M's motion for summary judgment on general causation, dismissing all 61 cases pending before the state court in Minnesota. Plaintiffs appealed

that ruling and the state court's punitive damages ruling. In January 2019, the Minnesota Court of Appeals affirmed the Minnesota state court orders in their entirety. The plaintiffs have indicated that they intend to seek review by the Minnesota Supreme Court.

In April 2018, the federal court partially granted 3M's motion for summary judgment in the first bellwether case, leaving for trial a claim for strict liability based upon design defect. The court dismissed the plaintiff's claims for negligence, failure to warn, and common law and statutory fraud. In the trial of the first bellwether case in May 2018, the jury returned a unanimous verdict in 3M's favor finding that the Bair Hugger™ patient warming system was not defective and was not the cause of the plaintiff's injury. The plaintiff appealed the verdict to the U.S. Court of Appeals for the Eighth Circuit. The plaintiffs dismissed the two bellwether cases set for trial in December 2018. Of the other six bellwether cases designated for trial, the plaintiffs have so far dismissed four and agreed to dismiss the fifth, leaving only one. The second bellwether trial is set for May 2019.

3M is also defending two other state court actions. One case is pending in Hidalgo County, Texas and combines Bair Hugger product liability claims with medical malpractice claims. The other state court case is pending in Ramsey County, Minnesota, and was filed after the Minnesota state court's summary judgment ruling.

An additional state court case was filed in late 2018 in Jackson County, Missouri, combining Bair Hugger product liability claims with medical malpractice claims against Missouri defendants. 3M removed the case to the U.S. District Court for the Western District of Missouri. 3M contemporaneously filed a motion to stay any proceedings in this case pending transfer of the case to the MDL.

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In June 2016, the Company was served with a putative class action filed in the Ontario Superior Court of Justice for all Canadian residents who underwent various joint arthroplasty, cardiovascular, and other surgeries and later developed surgical site infections due to the use of the Bair Hugger™ patient warming system. The representative plaintiff seeks relief (including punitive damages) under Canadian law based on theories similar to those asserted in the MDL. No liability has been recorded for the Bair Hugger™ litigation because the Company believes that any such liability is not probable and estimable at this time.

In September 2011, 3M Oral Care launched Lava Ultimate CAD/CAM dental restorative material. The product was originally indicated for inlay, onlay, veneer, and crown applications. In June 2015, 3M Oral Care voluntarily removed crown applications from the product's instructions for use, following reports from dentists of patients' crowns debonding, requiring additional treatment. The product remains on the market for other applications. 3M communicated with the U.S. Food and Drug Administration, as well as regulators outside the United States. 3M also informed customers and distributors of its action, offered to accept return of unused materials and provide refunds. In May 2018, 3M reached a preliminary settlement for an amount that did not have a material impact to the Company of the lawsuit pending in the U.S. District Court for the District of Minnesota that sought certification of a class of dentists in the United States and its territories. The settlement is subject to the court's approval and certification of the settlement class, with a right of class members to opt-out of the settlement and bring individual claims against the Company.

In December 2018, a military veteran filed an individual lawsuit against 3M in the San Bernardino Superior Court in California alleging that he sustained personal injuries while serving in the military caused by 3M's Dual-Ended Combat Arms earplugs – Version 2, a product no longer sold by the Company or its subsidiary Aearo Technologies. The plaintiff asserts claims of product liability and fraudulent misrepresentation and concealment. The plaintiff seeks various damages, including medical and related expenses, loss of income, and punitive damages. In 2019, approximately 26 other lawsuits have been filed against 3M by former or current military personnel in various state and federal courts in California, Oklahoma, Minnesota, Louisiana, Missouri, Texas, Florida, and the District of Columbia making similar allegations.

For product liability litigation matters described in this section for which a liability has been recorded, the Company believes the amount recorded is not material to the Company's consolidated results of operations or financial condition. In addition, the Company is not able to estimate a possible loss or range of loss in excess of the established accruals at this time.

NOTE 17. Stock-Based Compensation

The 3M 2016 Long-Term Incentive Plan provides for the issuance or delivery of up to 123,965,000 shares of 3M common stock pursuant to awards granted under the plan. Awards may be issued in the form of incentive stock

options, nonqualified stock options, progressive stock options, stock appreciation rights, restricted stock, restricted stock units, other stock awards, and performance units and performance shares. As of December 31, 2018, the remaining shares available for grant under the LTIP Program are 26.3 million and there were approximately 7,700 participants with outstanding options, restricted stock, or restricted stock units.

The Company's annual stock option and restricted stock unit grant is made in February to provide a strong and immediate link between the performance of individuals during the preceding year and the size of their annual stock compensation grants. The grant to eligible employees uses the closing stock price on the grant date. Accounting rules require recognition of expense under a non-substantive vesting period approach, requiring compensation expense recognition when an employee is eligible to retire. Employees are considered eligible to retire at age 55 and after having completed ten years of service. This retiree-eligible population represents 38 percent of the annual stock-based compensation award expense dollars; therefore, higher stock-based compensation expense is recognized in the first quarter.

In addition to the annual grants, the Company makes other minor grants of stock options, restricted stock units and other stock-based grants. The Company issues cash settled restricted stock units and stock appreciation rights in certain countries. These grants do not result in the issuance of common stock and are considered immaterial by the Company.

Beginning in 2016, as a result of the Company's application of ASU No. 2016-09, Improvements to Employee Share-Based Payment Accounting, certain excess tax benefits at the time of exercise (for an option) or upon vesting (for restricted stock units) are recognized as income tax benefits in the statement of income. These amounts totaled \$100 million, \$228 million, and \$184 million for 2018, 2017 and 2016, respectively, and are reflected in the "income tax benefits" line within the stock-based compensation table below.

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Amounts recognized in the financial statements with respect to stock-based compensation programs, which include stock options, restricted stock, restricted stock units, performance shares and the General Employees' Stock Purchase Plan (GESPP), are provided in the following table. Capitalized stock-based compensation amounts were not material.

Stock-Based Compensation Expense

(Millions)	Years ended December 31		
	2018	2017	2016
Cost of sales	\$ 48	\$ 49	\$ 47
Selling, general and administrative expenses	207	229	206
Research, development and related expenses	47	46	45
Stock-based compensation expenses	\$ 302	\$ 324	\$ 298
Income tax benefits	\$ (154)	\$ (327)	\$ (272)
Stock-based compensation expenses (benefits), net of tax	\$ 148	\$ (3)	\$ 26

Stock Option Program

The following table summarizes stock option activity for the years ended December 31:

	2018		2017		2016	
	Number of	Weighted	Number of	Weighted	Number of	Weighted
(Options in thousands)	Options	Average	Options	Average	Options	Average
Under option —		Exercise Price		Exercise Price		Exercise Price
January 1	34,965	\$ 125.73	36,196	\$ 112.07	38,552	\$ 102.01
Granted:						
Annual	3,211	233.19	5,410	175.93	5,592	147.99
Exercised	(3,482)	91.01	(6,474)	90.37	(7,716)	86.76
Forfeited	(125)	188.00	(167)	162.36	(232)	148.43
December 31	34,569	\$ 138.98	34,965	\$ 125.73	36,196	\$ 112.07
Options exercisable						
December 31	26,117	\$ 121.98	24,281	\$ 108.50	25,241	\$ 95.65

Stock options vest over a period from one to three years with the expiration date at 10 years from date of grant. As of December 31, 2018, there was \$66 million of compensation expense that has yet to be recognized related to non-vested stock option based awards. This expense is expected to be recognized over the remaining

weighted-average vesting period of 20 months. For options outstanding at December 31, 2018, the weighted-average remaining contractual life was 66 months and the aggregate intrinsic value was \$1.918 billion. For options exercisable at December 31, 2018, the weighted-average remaining contractual life was 55 months and the aggregate intrinsic value was \$1.791 billion.

The total intrinsic values of stock options exercised during 2018, 2017 and 2016 was \$469 million, \$703 million and \$608 million, respectively. Cash received from options exercised during 2018, 2017 and 2016 was \$316 million, \$585 million and \$665 million, respectively. The Company's actual tax benefits realized for the tax deductions related to the exercise of employee stock options for 2018, 2017 and 2016 was \$99 million, \$238 million and \$224 million, respectively.

For the primary annual stock option grant, the weighted average fair value at the date of grant was calculated using the Black-Scholes option-pricing model and the assumptions that follow.

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Stock Option Assumptions

	Annual					
	2018		2017		2016	
Exercise price	\$ 233.63		\$ 175.76		\$ 147.87	
Risk-free interest rate	2.7	%	2.1	%	1.5	%
Dividend yield	2.4	%	2.5	%	2.5	%
Expected volatility	21.0	%	17.3	%	20.8	%
Expected life (months)	78		78		77	
Black-Scholes fair value	\$ 41.59		\$ 23.51		\$ 22.47	

Expected volatility is a statistical measure of the amount by which a stock price is expected to fluctuate during a period. For the 2018 annual grant date, the Company estimated the expected volatility based upon the following three volatilities of 3M stock: the median of the term of the expected life rolling volatility; the median of the most recent term of the expected life volatility; and the implied volatility on the grant date. The expected term assumption is based on the weighted average of historical grants.

Restricted Stock and Restricted Stock Units

The following table summarizes restricted stock and restricted stock unit activity for the years ended December 31:

	2018		2017		2016	
	Number of Shares	Weighted Average Grant Date Fair Value	Number of Shares	Weighted Average Grant Date Fair Value	Number of Shares	Weighted Average Grant Date Fair Value
(Shares in thousands)						
Nonvested balance —						
As of January 1	1,994	\$ 162.60	2,185	\$ 145.64	2,441	\$ 127.47
Granted						
Annual	467	233.61	604	176.10	749	148.20
Other	8	207.76	21	233.77	8	169.00
Vested	(640)	164.83	(769)	127.21	(960)	101.64
Forfeited	(40)	186.48	(47)	158.25	(53)	145.95
As of December 31	1,789	\$ 180.02	1,994	\$ 162.60	2,185	\$ 145.64

As of December 31, 2018, there was \$74 million of compensation expense that has yet to be recognized related to non-vested restricted stock and restricted stock units. This expense is expected to be recognized over the remaining

weighted-average vesting period of 21 months. The total fair value of restricted stock and restricted stock units that vested during 2018, 2017 and 2016 was \$155 million, \$136 million and \$149 million, respectively. The Company's actual tax benefits realized for the tax deductions related to the vesting of restricted stock and restricted stock units for 2018, 2017 and 2016 was \$29 million, \$45 million and \$56 million, respectively.

Restricted stock units granted generally vest three years following the grant date assuming continued employment. Dividend equivalents equal to the dividends payable on the same number of shares of 3M common stock accrue on these restricted stock units during the vesting period, although no dividend equivalents are paid on any of these restricted stock units that are forfeited prior to the vesting date. Dividends are paid out in cash at the vest date on restricted stock units. Since the rights to dividends are forfeitable, there is no impact on basic earnings per share calculations. Weighted average restricted stock unit shares outstanding are included in the computation of diluted earnings per share.

Performance Shares

Instead of restricted stock units, the Company makes annual grants of performance shares to members of its executive management. The 2018 performance criteria for these performance shares (organic volume growth, return on invested capital, free cash flow conversion, and earnings per share growth) were selected because the Company believes that they are important drivers of long-term stockholder value. The number of shares of 3M common stock that could actually be delivered at the end of the three-year performance period may be anywhere from 0% to 200% of each performance share granted, depending on the performance of the

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Company during such performance period. When granted, these performance shares are awarded at 100% of the estimated number of shares at the end of the three-year performance period and are reflected under “Granted” in the table below. Non-substantive vesting requires that expense for the performance shares be recognized over one or three years depending on when each individual became a 3M executive. The performance share grants accrue dividends, therefore the grant date fair value is equal to the closing stock price on the date of grant. Since the rights to dividends are forfeitable, there is no impact on basic earnings per share calculations. Weighted average performance shares whose performance period is complete are included in computation of diluted earnings per share.

The following table summarizes performance share activity for the years ended December 31:

	2018		2017		2016	
	Number of	Weighted	Number of	Weighted	Number of	Weighted
(Shares in thousands)	Shares	Average	Shares	Average	Shares	Average
		Grant Date		Grant Date		Grant Date
		Fair Value		Fair Value		Fair Value
Undistributed balance —						
As of January 1	686	\$ 171.90	656	\$ 142.98	871	\$ 120.89
Granted	166	229.13	201	191.28	219	160.17
Distributed	(206)	159.82	(314)	124.88	(367)	99.06
Performance change	(56)	198.39	155	173.91	(38)	155.98
Forfeited	(28)	204.09	(12)	171.36	(29)	149.08
As of December 31	562	\$ 188.96	686	\$ 171.90	656	\$ 142.98

As of December 31, 2018, there was \$18 million of compensation expense that has yet to be recognized related to performance shares. This expense is expected to be recognized over the remaining weighted-average earnings period of 10 months. The total fair value of performance shares that were distributed were \$48 million, \$55 million, and \$54 million for 2018, 2017 and 2016, respectively. The Company’s actual tax benefits realized for the tax deductions related to the distribution of performance shares was \$11 million per year for 2018 and \$15 million per year for both 2017 and 2016.

General Employees’ Stock Purchase Plan (GESPP):

As of December 31, 2018, shareholders have approved 60 million shares for issuance under the Company’s GESPP. Substantially all employees are eligible to participate in the plan. Participants are granted options at 85% of market value at the date of grant. There are no GESPP shares under option at the beginning or end of each year because options are granted on the first business day and exercised on the last business day of the same month.

The weighted-average fair value per option granted during 2018, 2017 and 2016 was \$31.91, \$30.07 and \$24.72, respectively. The fair value of GESPP options was based on the 15% purchase price discount. The Company recognized compensation expense for GESPP options of \$30 million in 2018, \$26 million in 2017 and \$24 million in 2016.

NOTE 18. Business Segments

3M's businesses are organized, managed and internally grouped into segments based on differences in markets, products, technologies and services. 3M manages its operations in five business segments: Industrial; Safety and Graphics; Health Care; Electronics and Energy; and Consumer. 3M's five business segments bring together common or related 3M technologies, enhancing the development of innovative products and services and providing for efficient sharing of business resources. Transactions among reportable segments are recorded at cost. 3M is an integrated enterprise characterized by substantial intersegment cooperation, cost allocations and inventory transfers. Therefore, management does not represent that these segments, if operated independently, would report the operating income information shown. The difference between operating income and pre-tax income relates to interest income and interest expense, which are not allocated to business segments, along with non-service cost components of pension and postretirement net periodic benefit costs.

As part of 3M's continuing effort to improve the alignment of its businesses around markets and customers, the Company made the following changes, effective in the first quarter of 2018, and other revisions impacting business segment reporting:

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Consolidation of customer account activity within international countries – expanding dual credit reporting

- The Company consolidated its customer account activity in each country into centralized sales districts for certain countries that make up approximately 70 percent of 3M’s 2017 international net sales. Expansion of these initiatives, which previously had been deployed only in the U.S., reduces the complexity for customers when interacting with multiple 3M businesses. 3M business segment reporting measures include dual credit to business segments for certain sales and related operating income. This dual credit is based on which business segment provides customer account activity with respect to a particular product sold in a specific country. The expansion of alignment of customer accounts within additional countries increased the attribution of dual credit across 3M’s business segments. Additionally, certain sales and operating income results for electronic bonding product lines that were previously equally divided between the Electronics and Energy business segment and the Industrial business segment are now reported similarly to dual credit. As a result, previously reported aggregate business segment net sales and operating income for total year 2017 increased \$1.568 billion and \$402 million, respectively, offset by similar increases in the elimination of dual credit net sales and operating income amounts.

Centralization of manufacturing and supply technology platforms

- Certain shared film manufacturing and supply technology platform resources formerly reflected within the Electronics and Energy business segment were combined with other shared and centrally managed material resource centers of expertise within Corporate and Unallocated. This change resulted in a decrease in previously reported net sales and an increase in operating income for total year 2017 of \$1 million and \$42 million, respectively, in the Electronics and Energy segment, offset by a corresponding increase in net sales and decrease in operating income within Corporate and Unallocated.

In addition, as discussed in Note 1, 3M adopted ASU N0. 2017-07, Improving the Presentation of Net Periodic Pension Cost and Net Periodic Postretirement Benefit Cost, effective January 1, 2018 on a retrospective basis. As a result, operating income for 3M’s business segments has been revised to reflect non-service cost related pension and postretirement net periodic benefit costs within other expense (income), net

The financial information presented herein reflects the impact of the preceding business segment reporting changes for all periods presented.

Business Segment Products

Business Segment	Major Products
Industrial	Tapes, coated, nonwoven and bonded abrasives, adhesives, advanced ceramics, sealants, specialty materials, filtration products, closure systems for personal hygiene products, acoustic systems products, automotive components, abrasion-resistant films, structural

adhesives and paint finishing and detailing products

Safety and Graphics	Personal protection products, transportation safety products, commercial graphics systems, commercial cleaning and protection products, floor matting, roofing granules for asphalt shingles, fall protection products, self-contained breathing apparatus systems, and gas and flame detection instruments
Health Care	Medical and surgical supplies, skin health and infection prevention products, drug delivery systems, dental and orthodontic products, health information systems and food safety products
Electronics and Energy	Optical films solutions for electronic displays, packaging and interconnection devices, insulating and splicing solutions for the electronics and electrical industries, touch screens and touch monitors, renewable energy component solutions, and infrastructure protection products
Consumer	Consumer and office tapes and adhesives, repositionable notes, indexing systems, home improvement products, furnace filters, painter tapes, mounting products, home care products, sponges, scouring pads, high-performance clothes, protective material products, and adhesive bandages and braces

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Business Segment Information

(Millions)	Net Sales			Operating Income		
	2018	2017	2016	2018	2017	2016
Industrial	\$ 12,267	\$ 11,866	\$ 11,217	\$ 2,737	\$ 2,490	\$ 2,528
Safety and Graphics	6,827	6,235	5,948	1,720	2,066	1,403
Health Care	6,021	5,853	5,606	1,799	1,764	1,731
Electronics and Energy	5,472	5,501	4,926	2,055	1,377	1,145
Consumer	4,796	4,731	4,578	1,027	1,004	1,054
Corporate and Unallocated	50	3	6	(1,465)	(395)	(321)
Elimination of Dual Credit	(2,668)	(2,532)	(2,172)	(666)	(614)	(513)
Total Company	\$ 32,765	\$ 31,657	\$ 30,109	\$ 7,207	\$ 7,692	\$ 7,027

(Millions)	Assets			Depreciation & Amortization			Capital Expenditures		
	2018	2017	2016	2018	2017	2016	2018	2017	2016
Industrial	\$ 9,855	\$ 9,895	\$ 9,140	\$ 376	\$ 432	\$ 407	\$ 454	\$ 381	\$ 360
Safety and Graphics	9,657	9,874	7,626	300	275	277	210	184	228
Health Care	4,687	4,757	4,293	162	175	175	180	137	136
Electronics and Energy	3,993	4,291	4,335	134	240	223	115	152	187
Consumer	2,757	2,706	2,497	91	112	114	115	109	109
Corporate and Unallocated	5,551	6,464	5,015	425	310	278	503	410	400
Total Company	\$ 36,500	\$ 37,987	\$ 32,906	\$ 1,488	\$ 1,544	\$ 1,474	\$ 1,577	\$ 1,373	\$ 1,420

Corporate and unallocated operating income includes a variety of miscellaneous items, such as corporate investment gains and losses, certain derivative gains and losses, certain insurance-related gains and losses, certain litigation and environmental expenses, corporate restructuring charges and certain under- or over-absorbed costs (e.g. pension, stock-based compensation) that the Company may choose not to allocate directly to its business segments. Corporate and Unallocated also includes sales, costs, and income from contract manufacturing, transition services and other arrangements with the acquirer of all of the Communication Markets Division following its divestiture in 2018. Because this category includes a variety of miscellaneous items, it is subject to fluctuation on a quarterly and annual basis.

3M business segment reporting measures include dual credit to business segments for certain sales and related operating income. Management evaluates each of its five business segments based on net sales and operating income

performance, including dual credit reporting to further incentivize sales growth. As a result, 3M reflects additional (“dual”) credit to another business segment when the customer account activity (“sales district”) with respect to the particular product sold to the external customer is provided by a different business segment. This additional dual credit is largely reflected at the division level. For example, certain respirators are primarily sold by the Personal Safety Division within the Safety and Graphics business segment; however, a sales district within the Industrial business segment provides the contact for sales of the product to particular customers. In this example, the non-primary selling segment (Industrial) would also receive credit for the associated net sales initiated through its sales district and the related approximate operating income. The assigned operating income related to dual credit activity may differ from operating income that would result from actual costs associated with such sales. The offset to the dual credit business segment reporting is reflected as a reconciling item entitled “Elimination of Dual Credit,” such that sales and operating income in total are unchanged.

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NOTE 19. Geographic Areas

Geographic area information is used by the Company as a secondary performance measure to manage its businesses. Export sales and certain income and expense items are generally reported within the geographic area where the final sales to 3M customers are made.

(Millions)	Net Sales			Property, Plant and Equipment - net	
	2018	2017	2016	2018	2017
United States	\$ 12,840	\$ 12,372	\$ 12,188	\$ 4,915	\$ 4,891
Asia Pacific	10,254	9,809	8,847	1,624	1,672
Europe, Middle East and Africa	6,654	6,456	6,163	1,751	1,798
Latin America and Canada	3,024	3,033	2,901	448	505
Other Unallocated	(7)	(13)	10	—	—
Total Company	\$ 32,765	\$ 31,657	\$ 30,109	\$ 8,738	\$ 8,866

Asia Pacific included China/Hong Kong net sales to customers of \$3.574 billion, \$3.255 billion and \$2.799 billion in 2018, 2017, and 2016, respectively. China/Hong Kong net property, plant and equipment (PP&E) was \$542 million and \$541 million at December 31, 2018 and 2017, respectively.

NOTE 20. Quarterly Data (Unaudited)

(Millions, except per-share amounts)	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year 2018
2018					
Net sales	\$ 8,278	\$ 8,390	\$ 8,152	\$ 7,945	\$ 32,765
Cost of sales	4,236	4,227	4,159	4,060	16,682
Net income including noncontrolling interest	606	1,862	1,546	1,349	5,363
Net income attributable to 3M	602	1,857	1,543	1,347	5,349
Earnings per share attributable to 3M common shareholders - basic	1.01	3.14	2.64	2.32	9.09
Earnings per share attributable to 3M common shareholders - diluted	0.98	3.07	2.58	2.27	8.89

(Millions, except per-share amounts) 2017	First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Year 2017
Net sales	\$ 7,685	\$ 7,810	\$ 8,172	\$ 7,990	\$ 31,657
Cost of sales	3,882	4,020	4,059	4,094	16,055
Net income including noncontrolling interest	1,326	1,585	1,433	525	4,869
Net income attributable to 3M	1,323	1,583	1,429	523	4,858
Earnings per share attributable to 3M common shareholders - basic	2.21	2.65	2.39	0.88	8.13
Earnings per share attributable to 3M common shareholders - diluted	2.16	2.58	2.33	0.85	7.93

Gross profit is calculated as net sales minus cost of sales.

In the first quarter of 2018, the resolution of the State of Minnesota Natural Resource Damages (NRD) lawsuit reduced net income by \$710 million, or \$1.16 per diluted share. Refer to Note 16 for additional details. Additionally, the first quarter of 2018 was impacted by a measurement period adjustment related to the enactment of the Tax Cuts and Jobs Act (TCJA), which reduced net income by \$217 million, or \$0.36 per diluted share. Refer to Note 10 for additional details.

In the fourth quarter of 2018, the Company's ongoing IRS examination under the Compliance Assurance Process (CAP) and new guidance released under the Tax Cuts and Jobs Act resulted in a charge that reduced net income by \$60 million, or \$0.11 per diluted share. Additionally, in the fourth quarter of 2018, the Company finalized the tax impact related to TCJA with a reversal of previously recorded tax expense that increased net income by \$41 million, or \$0.07 per diluted share. On a combined basis, these items, including the impacts detailed above for the first quarter of 2018, reduced net income by \$946 million, or \$1.57 per diluted share in 2018.

Fourth quarter and year 2017 were impacted by the enactment of the Tax Cuts and Jobs Act in December 2017, which reduced net income by \$762 million and reduced diluted earnings per share by \$1.25 in the fourth quarter and \$1.24 for year 2017. Refer to Note 10 for additional details.

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Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure.

None.

Item 9A. Controls and Procedures.

a. The Company carried out an evaluation, under the supervision and with the participation of its management, including the Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of the Company's "disclosure controls and procedures" (as defined in the Exchange Act Rule 13a-15(e)) as of the end of the period covered by this report. Based upon that evaluation, the Chief Executive Officer and Chief Financial Officer concluded that the Company's disclosure controls and procedures are effective.

b. The Company's management is responsible for establishing and maintaining an adequate system of internal control over financial reporting, as defined in the Exchange Act Rule 13a-15(f). Management conducted an assessment of the Company's internal control over financial reporting based on the framework established by the Committee of Sponsoring Organizations of the Treadway Commission in Internal Control — Integrated Framework (2013). Based on the assessment, management concluded that, as of December 31, 2018, the Company's internal control over financial reporting is effective. The Company's internal control over financial reporting as of December 31, 2018 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which is included herein, which expresses an unqualified opinion on the effectiveness of the Company's internal control over financial reporting as of December 31, 2018.

c. There was no change in the Company's internal control over financial reporting that occurred during the Company's most recently completed fiscal quarter that has materially affected, or is reasonably likely to materially affect, the Company's internal control over financial reporting.

The Company is implementing an enterprise resource planning ("ERP") system on a worldwide basis, which is expected to improve the efficiency of certain financial and related transaction processes. The gradual implementation is expected to occur in phases over the next several years. The implementation of a worldwide ERP system will likely affect the processes that constitute our internal control over financial reporting and will require testing for effectiveness.

The Company completed implementation with respect to various processes/sub-processes in certain subsidiaries/locations, including aspects relative to the United States, and will continue to roll out the ERP system over the next several years. As with any new information technology application we implement, this application,

along with the internal controls over financial reporting included in this process, was appropriately considered within the testing for effectiveness with respect to the implementation in these instances. We concluded, as part of its evaluation described in the above paragraphs, that the implementation of the ERP system in these circumstances has not materially affected our internal control over financial reporting.

Item 9B. Other Information.

None.

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PART III

Documents Incorporated by Reference

In response to Part III, Items 10, 11, 12, 13 and 14, parts of the Company's definitive proxy statement (to be filed pursuant to Regulation 14A within 120 days after Registrant's fiscal year-end of December 31, 2018) for its annual meeting to be held on May 14, 2019, are incorporated by reference in this Form 10-K.

Item 10. Directors, Executive Officers and Corporate Governance.

The information relating to directors and nominees of 3M is set forth under the caption "Proposal No. 1" in 3M's proxy statement for its annual meeting of stockholders to be held on May 14, 2019 ("3M Proxy Statement") and is incorporated by reference herein. Information about executive officers is included in Item 1 of this Annual Report on Form 10-K. The information required by Items 405, 407(c)(3), (d)(4) and (d)(5) of Regulation S-K is contained under the captions "Section 16(a) Beneficial Ownership Reporting Compliance," "Corporate Governance At 3M — Board Membership Criteria — Identification, Evaluation, and Selection of Nominees,," "—Nominees Proposed By Stockholders," "—Stockholder Nominations", "—Proxy Access Nominations" and "—Role of the Nominating and Governance Committee" and "Corporate Governance At 3M -- Board Committees – Audit Committee" of the 3M Proxy Statement and such information is incorporated by reference herein.

Code of Ethics. All of our employees, including our Chief Executive Officer, Chief Financial Officer and Chief Accounting Officer and Controller, are required to abide by 3M's long-standing business conduct policies to ensure that our business is conducted in a consistently legal and ethical manner. 3M has posted the text of such code of ethics on its website (<http://www.3M.com/businessconduct>). At the same website, any future amendments to the code of ethics will also be posted. Any person may request a copy of the code of ethics, at no cost, by writing to us at the following address:

3M Company
3M Center, Building 220-11W-09
St. Paul, MN 55144-1000
Attention: Vice President, 3M Ethics & Compliance

Item 11. Executive Compensation.

The information required by Item 402 of Regulation S-K is contained under the captions “Executive Compensation” (excluding the information under the caption “— Compensation Committee Report”) and “Director Compensation and Stock Ownership Guidelines” of the 3M Proxy Statement. Such information is incorporated by reference.

The information required by Items 407(e)(4) and (e)(5) of Regulation S-K is contained in the “Executive Compensation” section under the captions “Compensation Committee Report” and “Compensation Committee Interlocks and Insider Participation” of the 3M Proxy Statement. Such information (other than the Compensation Committee Report, which shall not be deemed to be “filed”) is incorporated by reference.

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Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.

The information relating to security ownership of certain beneficial owners and management is set forth under the designation “Security Ownership of Management” and “Security Ownership of Certain Beneficial Owners” in the 3M Proxy Statement and such information is incorporated by reference herein.

Equity compensation plans information as of December 31, 2018 follows:

Equity Compensation Plans Information (1)

Plan Category (options and shares in thousands)	A Number of securities to be issued upon exercise of outstanding options, warrants and rights	B Weighted-average exercise price of outstanding options, warrants and rights	C Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (A))
Equity compensation plans approved by security holders			
Stock options	34,569	\$ 138.98	—
Restricted stock units	1,789		—
Performance shares	562		—
Non-employee director deferred stock units	235		—
Total	37,155		26,340
Employee stock purchase plan	—		25,306
Subtotal	37,155		51,646
Total	37,155		51,646

(1) In column B, the weighted-average exercise price is only applicable to stock options. In column C, the number of securities remaining available for future issuance for stock options, restricted stock units, and stock awards for non-employee directors is approved in total and not individually with respect to these items.

Item 13. Certain Relationships and Related Transactions, and Director Independence.

With respect to certain relationships and related transactions as set forth in Item 404 of Regulation S-K, no matters require disclosure with respect to transactions with related persons. The information required by Item 404(b) and Item 407(a) of Regulation S-K is contained under the section “Corporate Governance at 3M” under the captions “Director Independence” and “Related Person Transaction Policy and Procedures” of the 3M Proxy Statement and such information is incorporated by reference herein.

Item 14. Principal Accounting Fees and Services.

The information relating to principal accounting fees and services is set forth in the section entitled “Audit Committee Matters” under the designation “Audit Committee Policy on Pre-Approval of Audit and Permissible Non-Audit Services of the Independent Accounting Firm” and “Fees of the Independent Accounting Firm” in the 3M Proxy Statement and such information is incorporated by reference herein.

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PART IV

Item 15. Exhibits, Financial Statement Schedules.

(a) (1) Financial Statements. The consolidated financial statements filed as part of this report are listed in the index to financial statements at the beginning of this document.

(a) (2) Financial Statement Schedules. Financial statement schedules are omitted because of the absence of the conditions under which they are required or because the required information is included in the Consolidated Financial Statements or the notes thereto. The financial statements of unconsolidated subsidiaries are omitted because, considered in the aggregate, they would not constitute a significant subsidiary.

(a) (3) Exhibits. The exhibits are either filed with this report or incorporated by reference into this report. Exhibit numbers 10.1 through 10.29 are management contracts or compensatory plans or arrangements. See

(b) Exhibits, which follow.

(b) Exhibits.

(3) Articles of Incorporation and bylaws

(3.1) Certificate of incorporation, as amended as of December 4, 2017, is incorporated by reference from our Form 8-K dated December 7, 2017.

(3.2) Amended and Restated Bylaws, as adopted as of November 10, 2015, are incorporated by reference from our Form 8-K dated November 10, 2015.

(4) Instruments defining the rights of security holders, including indentures:

(4.1) Indenture, dated as of November 17, 2000, between 3M and The Bank of New York Mellon Trust Company, N.A., as successor trustee, with respect to 3M's senior debt securities, is incorporated by reference from our Form 8-K dated December 7, 2000.

- (4.2) First Supplemental Indenture, dated as of July 29, 2011, to Indenture dated as of November 17, 2000, between 3M and The Bank of New York Mellon Trust Company, N.A., as successor trustee, with respect to 3M's senior debt securities, is incorporated by reference from our Form 10-Q for the quarter ended June 30, 2011.
- (10) Material contracts and management compensation plans and arrangements:
- (10.1) 3M Company 2016 Long-Term Incentive Plan is incorporated by reference from our Form 8-K dated May 12, 2016.
- (10.2) Form of Stock Option Award Agreement under the 3M Company 2016 Long-Term Incentive Plan is incorporated by reference from our Form 8-K dated May 12, 2016.
- (10.3) Form of Stock Appreciation Right Award Agreement under the 3M Company 2016 Long-Term Incentive Plan is incorporated by reference from our Form 8-K dated May 12, 2016.
- (10.4) Form of Restricted Stock Unit Award Agreement under the 3M Company 2016 Long-Term Incentive Plan is incorporated by reference from our Form 8-K dated May 12, 2016.
- (10.5) Form of Performance Share Award Agreement for performance share awards granted under the 3M Company 2016 Long-Term Incentive Plan prior to February 5, 2018, is incorporated by reference from our Form 8-K dated May 12, 2016.
- (10.6) Form of Performance Share Award Agreement for performance share awards granted under the 3M Company 2016 Long-Term Incentive Plan on or after February 5, 2018 is incorporated by reference from our Form 10-K for the year ended December 31, 2017.
- (10.7) Form of Stock Issuance Award Agreement for stock issuances on or after January 1, 2019 to Non-Employee Directors under the 3M Company 2016 Long-Term Incentive Plan is filed herewith.
- (10.8) Form of Deferred Stock Unit Award Agreement for deferred stock units granted on or after January 1, 2019 to Non-Employee Directors under the 3M Company 2016 Long-Term Incentive Plan is filed herewith.
- (10.9) 3M 2008 Long-Term Incentive Plan (including amendments through February 2, 2016) is incorporated by reference from our Form 10-K for the year ended December 31, 2015.
- (10.10) Form of Agreement for Stock Option Grants to Executive Officers under 3M 2008 Long-Term Incentive Plan is incorporated by reference from our Form 8-K dated May 13, 2008.

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- (10.11) Form of Stock Option Agreement for options granted to Executive Officers under the 3M 2008 Long-Term Incentive Plan, commencing February 9, 2010, is incorporated by reference from our Form 10-K for the year ended December 31, 2009.
- (10.12) Form of Restricted Stock Unit Agreement for restricted stock units granted to Executive Officers under the 3M Long-Term Incentive Plan, effective February 9, 2010, is incorporated by reference from our Form 10-K for the year ended December 31, 2009.
- (10.13) Form of Online Grant Agreement for performance share awards granted under the 3M 2008 Long-Term Incentive Plan with a performance period ending on or after December 31, 2017 is incorporated by reference from our Form 10-K for the year ended December 31, 2017.
- (10.14) Form of Stock Option Agreement for U.S. Employees under 3M 2008 Long-Term Incentive Plan is incorporated by reference from our Form 10-K for the year ended December 31, 2008.
- (10.15) Form of Restricted Stock Unit Agreement for U.S. Employees under 3M 2008 Long-Term Incentive Plan is incorporated by reference from our Form 10-K for the year ended December 31, 2008.
- (10.16) Amended and Restated 3M VIP Excess Plan is incorporated by reference from our Form 10-K for the year ended December 31, 2016.
- (10.17) Amended and Restated 3M VIP (Voluntary Investment Plan) Plus Plan is incorporated by reference from our Form 10-K for the year ended December 31, 2016.
- (10.18) 3M Deferred Compensation Excess Plan is incorporated by reference from our Form 10-K for the year ended December 31, 2009.
- (10.19) 3M Performance Awards Deferred Compensation Plan is incorporated by reference from our Form 10-K for the year ended December 31, 2009.
- (10.20) 3M Executive Annual Incentive Plan is incorporated by reference from our Form 8-K dated May 14, 2007.
- (10.21) 3M Compensation Plan for Non-Employee Directors, as amended, through November 8, 2004, is incorporated by reference from our Form 10-K for the year ended December 31, 2004.
- (10.22) Amendment of 3M Compensation Plan for Non-Employee Directors is incorporated by reference from our Form 8-K dated November 14, 2008.
- (10.23) Amendment of 3M Compensation Plan for Non-Employee Directors as of August 12, 2013, is incorporated by reference from our Form 10-Q for the quarter ended September 30, 2013.
- (10.24) Amendment and Restatement of 3M Compensation Plan for Non-Employee Directors as of January 1, 2019, is filed herewith.
- (10.25) 3M Executive Life Insurance Plan, as amended, is incorporated by reference from our Form 10-K for the year ended December 31, 2017.
- (10.26) Policy on Reimbursement of Incentive Payments (effective May 11, 2010) is incorporated by reference from our Form 10-Q for the quarter ended June 30, 2018.
- (10.27) Amended and Restated 3M Nonqualified Pension Plan I is incorporated by reference from our Form 10-K for the year ended December 31, 2016.
- (10.28) Amended and Restated 3M Nonqualified Pension Plan II is incorporated by reference from our Form 10-K for the year ended December 31, 2016.
- (10.29) Amended and Restated 3M Nonqualified Pension Plan III is incorporated by reference from our Form 10-K for the year ended December 31, 2016.
- 3 Policy on Reimbursement of Incentive Compensation (effective May 11, 2010) is incorporated by reference from our Form 10-Q dated August 4, 2010.
- (10.30) Amended and restated five-year credit agreement as of March 9, 2016, is incorporated by reference from our Form 8-K dated March 11, 2016.
- (10.31) Registration Rights Agreement as of August 4, 2009, between 3M Company and State Street Bank and Trust Company as Independent Fiduciary of the 3M Employee Retirement Income Plan, is incorporated by reference from our Form 8-K dated August 5, 2009.

Filed herewith, in addition to items, if any, specifically identified above:

- (21) Subsidiaries of the Registrant.
- (23) Consent of independent registered public accounting firm.
- (24) Power of attorney.
- (31.1) Certification of the Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350.
- (31.2) Certification of the Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350.

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- (32.1) Certification of the Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350.
- (32.2) Certification of the Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C. Section 1350.
- (95) Mine Safety Disclosures.
- (101.INS) XBRL Instance Document.
- (101.SCH) XBRL Taxonomy Extension Schema Document.
- (101.CAL) XBRL Taxonomy Extension Calculation Linkbase Document.
- (101.DEF) XBRL Taxonomy Extension Definition Linkbase Document.
- (101.LAB) XBRL Taxonomy Extension Label Linkbase Document.
- (101.PRE) XBRL Taxonomy Extension Presentation Linkbase Document.

Item 16. Form 10-K Summary.

A Form 10-K summary is provided at the beginning of this document, with hyperlinked cross-references. This allows users to easily locate the corresponding items in Form 10-K, where the disclosure is fully presented. The summary does not include certain Part III information that is incorporated by reference from a future proxy statement filing.

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SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

3M COMPANY

By /s/ Nicholas C. Gangestad
Nicholas C. Gangestad,
Senior Vice President and Chief
Financial Officer
(Principal Financial Officer)
February 7, 2019

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities indicated on February 7, 2019.

Signature	Title
Inge G. Thulin	Executive Chairman of the Board
Michael F. Roman	Chief Executive Officer, Director (Principal Executive Officer)
Ippocratis Vrohidis	Vice President, Corporate Controller and Chief Accounting Officer (Principal Accounting Officer)
Sondra L. Barbour	Director
Thomas K. Brown	Director
David B. Dillon	Director
Michael L. Eskew	Director
Herbert L. Henkel	Director
Amy E. Hood	Director
Muhtar Kent	Director
Edward M. Liddy	Director
Dambisa F. Moyo	Director
Gregory R. Page	Director
Patricia A. Woertz	Director

Nicholas C. Gangestad, by signing his name hereto, does hereby sign this document pursuant to powers of attorney duly executed by the other persons named, filed with the Securities and Exchange Commission on behalf of such other

persons, all in the capacities and on the date stated, such persons constituting a majority of the directors of the Company.

By /s/ Nicholas C. Gangestad
Nicholas C. Gangestad,
Attorney-in-Fact

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