CABOT CORP
Form 10-K
November 22, 2017
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 September 30, 2017

or

TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934
For the transition period fromto

Commission File Number 1-5667

Cabot Corporation

(Exact name of Registrant as specified in its Charter)

Delaware	04-2271897
(State or other jurisdiction of	(I.R.S. Employer
incorporation or organization)	Identification No.)
Two Seaport Lane, Suite 1300	
Boston, Massachusetts	02210
(Address of Principal Executive Offices)	(Zip Code)

Registrant's telephone number, including area code: (617) 345-0100

Securities registered pursuant to Section 12(b) of the Securities Exchange Act of 1934: Common Stock, Par Value $1.00 per share, traded on the New York Stock Exchange.

Securities registered pursuant to Section 12(g) of the Securities Exchange Act of 1934: 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 and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files).Yes No

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405) is not contained herein, and will not be contained, to the best of the 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, a smaller reporting company, or an emerging growth company. See 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	(Do not check if a smaller reporting company)	Smaller reporting company
Emerging growth company		

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

Indicate by check mark whether the Registrant is a shell company (as defined in Rule 12b-2 of the Exchange Act).

Yes No

As of the last business day of the Registrant's most recently completed second fiscal quarter (March 31, 2017), the aggregate market value of the Registrant's common stock held by non-affiliates was $3,706,582,334. As of November 17, 2017, there were 61,949,646 shares of the Registrant's common stock outstanding.

Portions of the Registrant's definitive proxy statement for its 2018 Annual Meeting of Shareholders are incorporated by reference into Part III of this report.

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Information Relating to Forward-Looking Statements

This annual report on Form 10-K contains "forward-looking statements" under the Federal securities laws. These forward-looking statements address expectations or projections about the future, including our expectations regarding our future business performance and overall prospects; future cash flow and cash return to shareholders; segment growth; demand for our products; when we expect construction of our new fumed silica plants in Wuhai, China and Carrollton, Kentucky and our infrastructure improvement and mining project at our mine in Manitoba, Canada to be completed; the sufficiency of our cash on hand, cash provided from operations and cash available under our credit and commercial paper facilities to fund our cash requirements; anticipated capital spending, including environmental-related capital expenditures; cash requirements and uses of available cash, including future cash outlays associated with long-term contractual obligations, restructurings, contributions to employee benefit plans, environmental remediation costs and future respirator liabilities; exposure to interest rate and foreign exchange risk; future benefit plan payments we expect to make; future amortization expenses; our expected tax rate for fiscal 2018; our ability to recover deferred tax assets; and the possible outcome of legal and environmental proceedings. From time to time, we also provide forward-looking statements in other materials we release to the public and in oral statements made by authorized officers.

Forward-looking statements are not guarantees of future performance and are subject to risks, uncertainties, potentially inaccurate assumptions, and other factors, some of which are beyond our control or difficult to predict. If known or unknown risks materialize, our actual results could differ materially from past results and from those expressed in the forward-looking statements. Important factors that could cause our actual results to differ materially from those expressed in our forward-looking statements are described in Item 1A in this report.

We undertake no obligation to publicly update forward-looking statements, whether as a result of new information, future events or otherwise, except as required by law. Investors are advised, however, to consult any further disclosures we make on related subjects in our 10-Q and 8-K reports filed with the Securities and Exchange Commission (the "SEC").

PART I

Item 1. Business

General

Cabot is a global specialty chemicals and performance materials company headquartered in Boston, Massachusetts. Our principal products are rubber and specialty grade carbon blacks, specialty compounds, fumed metal oxides, activated carbons, inkjet colorants, aerogel, cesium formate drilling fluids, and fine cesium chemicals. Cabot and its affiliates have manufacturing facilities and operations in the United States ("U.S.") and over 20 other countries. Cabot's business was founded in 1882 and incorporated in the State of Delaware in 1960. The terms "Cabot", "Company", "we", and "our" as used in this report refer to Cabot Corporation and its consolidated subsidiaries.

Our vision is to be the most innovative, respected and responsible leader in our markets – delivering performance that makes a difference. Our strategy is to extend our leadership in performance materials by investing for growth in our core businesses, driving application innovation with our customers, and generating strong cash flows through efficiency and optimization. Our products are generally based on technical expertise and innovation in one or more of our four core competencies: making and handling very fine particles; modifying the surfaces of very fine particles to alter their functionality; designing particles to impart specific properties to a formulation; and combining particles with other ingredients to deliver a formulated performance intermediate or composite. We focus on creating particles,

and formulations of those particles, with the composition, morphology, and surface functionalities to deliver the requisite performance to support our customers' existing and emerging applications.

Our four business segments are: Reinforcement Materials; Performance Chemicals; Purification Solutions; and Specialty Fluids. The business segments are discussed in more detail later in this section. Financial information about our business segments appears in "Management's Discussion and Analysis of Financial Condition and Results of Operations" in Item 7 below ("MD&A") and in Note S of our Notes to the Consolidated Financial Statements in Item 8 below ("Note S").

Our internet address is www.cabotcorp.com. We make available free of charge on or through our website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934 as soon as reasonably practicable after electronically filing such material with, or furnishing it to, the SEC. Information appearing on our website is not a part of, and is not incorporated in, this Annual Report on Form 10-K.

Reinforcement Materials

Products

Carbon black is a form of elemental carbon that is manufactured in a highly controlled process to produce particles and aggregates of varied structure and surface chemistry, resulting in many different performance characteristics for a wide variety of applications. Rubber grade carbon blacks are used to enhance the physical properties of the systems and applications in which they are incorporated.

Our rubber blacks products are used in tires and industrial products. Rubber blacks have traditionally been used in the tire industry as a rubber reinforcing agent to increase tread durability and are also used as a performance additive to reduce rolling resistance and improve traction. In industrial products such as hoses, belts, extruded profiles and molded goods, rubber blacks are used to improve the physical performance of the product, including the product’s physical strength, fluid resistance, conductivity and resistivity.

In addition to our rubber blacks products, we manufacture compounds of carbon black and rubber using our patented elastomer composites manufacturing process. These compounds improve abrasion/wear resistance, reduce fatigue of rubber parts and reduce rolling resistance compared to carbon black/rubber compounds made by conventional dry mix methods.

Sales and Customers

Sales of rubber blacks products are made by Cabot employees and through distributors and sales representatives. Sales to three major tire customers represent a material portion of Reinforcement Materials’ total net sales and operating revenues. The loss of any of these customers, or a significant reduction in volumes sold to them, could have a material adverse effect on the segment.

Under appropriate circumstances, we have entered into supply contracts with certain customers, the typical duration of which is one year. Many of these contracts provide for sales price adjustments to account for changes in relevant feedstock indices and, in some cases, changes in other relevant costs (such as the cost of natural gas). In fiscal 2017, approximately half of our rubber blacks volume was sold under these supply agreements. The majority of the volumes sold under these agreements are sold to customers in the Americas and Europe.

We have licensed our patented elastomer composites manufacturing process to Manufacture Francaise des Pneumatiques Michelin for their exclusive use in tire applications through fiscal 2017, and for a period of limited exclusivity in tire applications through fiscal 2019. As consideration, we receive quarterly royalty payments extending through calendar year 2022.

Much of the rubber blacks we sell is used in tires and automotive products and, therefore, our financial results may be affected by the cyclical nature of the automotive industry. However, a large portion of the market for our products is in replacement tires that historically have been less subject to automotive industry cycles.

Competition

We are one of the leading manufacturers of carbon black in the world. We compete in the manufacture of carbon black with two companies that operate globally and numerous other companies that operate regionally, a number of which export product outside their region. Competition for our Reinforcement Materials products is based on product performance, quality, reliability, price, service, technical innovation, and logistics. We believe our product differentiation, technological leadership, global manufacturing presence, operations and logistics excellence and customer service provide us with a competitive advantage.

Raw Materials

The principal raw material used in the manufacture of carbon black is a portion of the residual heavy oils derived from petroleum refining operations, the distillation of coal tars, and the production of ethylene throughout the world. Natural gas is also used in the production of carbon black. Raw materials are, in general, readily available and in adequate supply. Raw material costs generally are influenced by the availability of various types of carbon black feedstock and natural gas, supply and demand of such raw materials, and related transportation costs. Importantly, movements in the market price for crude oil typically affect carbon black feedstock costs.

Operations

We own, or have a controlling interest in, and operate plants that produce rubber blacks in Argentina, Brazil, Canada, China, Colombia, the Czech Republic, France, Indonesia, Italy, Japan, Mexico, the Netherlands and the U.S. An equity affiliate operates a carbon black plant in Venezuela.

The following table shows our ownership interest as of September 30, 2017 in rubber blacks operations in which we own less than 100%:

Location	Percentage Interest
Shanghai, China	70% (consolidated subsidiary)
Tianjin, China	70% (consolidated subsidiary)
Xingtai City, China	60% (consolidated subsidiary)
Valasske Mezirici (Valmez), Czech Republic	52% (consolidated subsidiary)
Cilegon, Indonesia	98% (consolidated subsidiary)
Valencia, Venezuela	49% (equity affiliate)

Performance Chemicals

Performance Chemicals is composed of two businesses: (i) our Specialty Carbons and Formulations business, which manufactures and sells specialty grades of carbon black, specialty compounds and inkjet colorants, and (ii) our Metal Oxides business, which manufactures and sells fumed silica, fumed alumina and dispersions thereof and aerogel. In Performance Chemicals, we design, manufacture and sell materials that deliver performance in a broad range of customer applications across the automotive, construction, infrastructure, energy, inkjet printing, electronics, and consumer products sectors.

Products

Specialty Carbons and Formulations Business

Carbon black is a form of elemental carbon that is manufactured in a highly controlled process to produce particles and aggregates of varied structure and surface chemistry, resulting in many different performance characteristics for a wide variety of applications.

Our specialty grades of carbon black are used to impart color, provide rheology control, enhance conductivity and static charge control, provide UV protection, enhance mechanical properties, and provide formulation flexibility through surface treatment. These specialty carbon products are used in a wide variety of applications, such as inks, coatings, plastics, adhesives, toners, batteries, and displays.

Our masterbatch and conductive compound products, which we refer to as "specialty compounds", are formulations derived from specialty grades of carbon black mixed with polymers and other additives. These products are generally used by plastic resin producers and converters in applications for the automotive, industrial, packaging, consumer products, and electronics industries. As an alternative to directly mixing specialty carbon blacks, these formulations offer greater ease of handling and help customers achieve their desired levels of dispersion and color and manage the addition of small doses of additives. In addition, our electrically conductive compound products generally are used to reduce risks associated with electrostatic discharge in plastics applications.

Our inkjet colorants are high-quality pigment-based black and color dispersions based on our patented carbon black surface modification technology. The dispersions are used in aqueous inkjet inks to impart color, sharp print characteristics and durability, while maintaining high printhead reliability. These products are used in various inkjet printing applications, including commercial printing, small office/home office and corporate office, and niche applications that require a high level of dispersibility and colloidal stability. Our inkjet inks, which utilize our pigment-based colorant dispersions, are used in the commercial printing segment for digital print.

Metal Oxides Business

Fumed silica is an ultra-fine, high-purity particle used as a reinforcing, thickening, abrasive, thixotropic, suspending or anti-caking agent in a wide variety of products for the automotive, construction, microelectronics, batteries, and consumer products industries. These products include adhesives, sealants, cosmetics, batteries, inks, toners, silicone elastomers, coatings, polishing slurries and pharmaceuticals. Fumed alumina, also an ultra-fine, high-purity particle, is used as an abrasive, absorbent or barrier agent in a variety of products, such as inkjet media, lighting, coatings, cosmetics and polishing slurries.

Aerogel is a hydrophobic, silica-based particle with a high surface area that is used in a variety of thermal insulation and specialty chemical applications. In the building and construction industry, the product is used in insulative sprayable plasters and composite building products, as well as translucent skylight, window, wall and roof systems for insulating eco-daylighting applications. In the specialty chemicals industry, the product is used to provide matte finishing, insulating and thickening properties for use in a variety of applications.

Sales and Customers

Sales of these products are made by Cabot employees and through distributors and sales representatives. In our Specialty Carbons and Formulations business, sales are generally to a broad number of customers. In our Metal Oxides business, sales under long-term contracts with two customers have accounted for a substantial portion of the revenue.

Competition

We are a leading producer of the products we sell in this segment. We compete in the manufacture of carbon black with two companies that operate globally and numerous other companies that operate regionally, a number of which export product outside their region. We compete with several companies that produce specialty compounds. Our inkjet colorants and inks are designed to replace traditional pigment dispersions and dyes used in inkjet printing applications. Competitive products for inkjet colorants are organic dyes and other dispersed pigments manufactured and marketed by large chemical companies and small independent producers. For fumed silica, we compete primarily with two companies with a global presence and several other companies which have a regional presence. For aerogel, we compete principally with one other company that produces aerogel products. We also compete with non-aerogel insulation products manufactured by regional companies throughout the world.

Competition for our Performance Chemicals products is based on product performance, quality, reliability, service, technical innovation, and price. We believe our product differentiation, technological leadership, operations excellence and customer service provide us with a competitive advantage.

Raw Materials

Raw materials for our products are, in general, readily available and in adequate supply. The principal raw material used in the manufacture of carbon black is a portion of the residual heavy oils derived from petroleum refining operations, the distillation of coal tars, and the production of ethylene throughout the world. Natural gas is also used in the production of carbon black. These raw material costs generally are influenced by the availability of various types of carbon black feedstock and natural gas, supply and demand of such raw materials, and related transportation costs. Importantly, movements in the market price for crude oil typically affect carbon black feedstock costs. The primary raw materials used for our specialty compounds include carbon black, primarily sourced from our carbon black plants, thermoplastic resins and mineral fillers supplied from various sources. Raw materials for inkjet colorants include carbon black sourced from our carbon black plants, organic pigments and other treating agents available from various sources. Raw materials for inkjet inks include pigment dispersions, solvents and other additives.

Raw materials for the production of fumed silica are various chlorosilane feedstocks. We purchase feedstocks and for some customers convert their feedstock to product on a fee-basis (so called “toll conversion”). We also purchase aluminum chloride as feedstock for the production of fumed alumina. We have long-term procurement contracts or arrangements in place for the purchase of fumed silica feedstock, which we believe will enable us to meet our raw material requirements for the foreseeable future. In addition, we buy some raw materials in the spot market to help ensure flexibility and minimize costs. The principal raw materials for the production of aerogel are silica sol and/or sodium silicate.

Operations

We own, or have a controlling interest in, and operate plants that produce specialty grades of carbon black primarily in China, the Netherlands and the U.S. Our specialty compounds are produced in facilities that we own, or have a controlling interest in, located in Belgium, Canada, China and the United Arab Emirates. Our inkjet colorants and inks are manufactured at our facility in Haverhill, Massachusetts. We also own, or have a controlling interest in, manufacturing plants that produce fumed metal oxides in China, Germany, the United Kingdom, and the U.S. and a manufacturing plant that produces aerogel in Frankfurt, Germany. An equity affiliate operates a fumed metal oxides plant in India.

The following table shows our ownership interest as of September 30, 2017 in these segment operations in which we own less than 100%:

Location	Percentage Interest
Tianjin, China (Specialty Carbons and Formulations business)	90% (consolidated subsidiary)
Jiangxi Province, China (Metal Oxides business)	90% (consolidated subsidiary)
Mettur Dam, India (Metal Oxides business)	50% (equity affiliate)

In November 2017, we purchased Tech Blend, a leading North American producer of black masterbatches, extending our geographic footprint in black masterbatch and compounds. Tech Blend produces black masterbatches at its manufacturing facility in Saint-Jean-sur-Richelieu, Québec, Canada.

We also continue to expand our fumed silica manufacturing capacity. During fiscal 2016, we entered into an agreement with Inner Mongolia Hengyecheng Silicone Co., Ltd ("HYC") to build a fumed silica manufacturing facility in Wuhai, China in which we will hold an 80% interest and HYC will hold the remaining 20% interest. Construction of the plant began in June 2017, and we expect the plant to be completed in calendar year 2019. In addition, in fiscal 2017, we entered into an agreement with DowDuPont ("Dow") to build a fumed silica manufacturing facility in Carrollton, Kentucky adjacent to the existing Dow silicone monomer plant. Construction of the plant began in September 2017, and we expect the plant to be completed in calendar year 2019.

Purification Solutions

Products

Activated carbon is a porous material consisting mainly of elemental carbon treated with heat, steam and/or chemicals to create high internal porosity, resulting in a large internal surface area that resembles a sponge. It is generally produced in two forms, powdered and granular, and is manufactured in different sizes, shapes and levels of purity and using a variety of raw materials for a wide variety of applications. Activated carbon is used to remove contaminants from liquids and gases using a process called adsorption, whereby the interconnected pores of activated carbon trap contaminants.

Our activated carbon products are used for the purification of water, air, food and beverages, pharmaceuticals and other liquids and gases, as either a colorant or a decolorizing agent in the manufacture of products for food and beverage applications and as a chemical carrier in slow release applications. In gas and air applications, one of the uses of activated carbon is for the removal of mercury in flue gas streams. In certain applications, used activated carbon can be reactivated for further use by removing the contaminants from the pores of the activated carbon product. The most common applications for our reactivated carbon are water treatment and food and beverage purification. In addition to our activated carbon production and reactivation, we also provide activated carbon solutions through on-site equipment and services, including delivery systems for activated carbon injection in coal-fired utilities, mobile water filter units and carbon reactivation services.

Sales and Customers

Sales of activated carbon are made by Cabot employees and through distributors and sales representatives to a broad range of customers, including coal-fired utilities, food and beverage processors, water treatment plants, pharmaceutical companies and catalyst producers. Some of our sales of activated carbon are made under annual contracts or longer-term agreements, particularly in mercury removal applications.

Competition

We are one of the leading manufacturers of activated carbon in the world. We compete in the manufacture of activated carbon with a number of companies, some of which have a global presence and others that have a regional or local presence, although not all of these companies manufacture activated carbon for the range of applications for which we sell our products.

Competition for activated carbon and activated carbon equipment and services is based on quality, price, performance, and supply-chain stability. We believe our product and application diversity, product differentiation, technological leadership, quality, cost-effective access to raw materials, and scalable manufacturing capabilities provide us with a competitive advantage.

Raw Materials

The principal raw materials we use in the manufacture of activated carbon are various forms of coal, including lignite, wood and other carbonaceous materials, which are, in general, readily available and we believe we have in adequate supply. We also own a lignite mine that is operated by Caddo Creek Resources Company, LLC, a subsidiary of the North American Coal Company, which supplies our Marshall, Texas facility.

Operations

We own, or have a controlling interest in, and operate plants that produce activated carbon in Italy, the Netherlands, the United Kingdom and the U.S. Our affiliates operate activated carbon plants in Canada and Mexico. The following

table shows our ownership interest as of September 30, 2017 in activated carbon operations in which we own less than 100%:

Location	Percentage Interest
Estevan, Saskatchewan, Canada	50% (contractual joint venture)
Atitalaquia, Hidalgo, Mexico	49% (equity affiliate)

Specialty Fluids

Products

Our Specialty Fluids segment produces and markets a range of cesium products that include cesium formate brines and other fine cesium chemicals.

Cesium formate brines are used as a drilling and completion fluid for use primarily in high pressure and high temperature oil and gas well construction. Cesium formate products are solids-free, high-density fluids that have a low viscosity, enabling safe and efficient well construction and workover operations. The fluid is resistant to high temperatures, minimizes damage to producing reservoirs and is readily biodegradable in accordance with the testing guidelines set by the Organization for Economic Cooperation and Development. In a majority of applications, cesium formate is blended with other formates or products.

Fine cesium chemicals are used across a wide range of industries and applications that include catalysts, doping agents and brazing fluxes. Fine cesium chemicals enable process performance benefits and yield improvements, and help prevent or mitigate pollution in the applications they serve.

Sales, Rental and Customers

Sales of our cesium formate products are made to oil and gas operating companies directly by Cabot employees and sales representatives and indirectly through oil field service companies. We generally rent cesium formate to our customers for use in drilling operations on a short-term basis and on occasion make direct sales of cesium formate outside of the rental process. After completion of a job under our rental process, the customer returns the remaining fluid to Cabot and it is reprocessed for use in subsequent well operations. Any fluid that is lost during use and not returned to Cabot is paid for by the customer.

A large portion of our fluids has been used for drilling and completion of wells in the North Sea with a limited number of customers, where we have supplied cesium formate-based fluids for both reservoir drilling and completion activities on large gas and condensate field projects in the Norwegian Continental Shelf. We continue to expand the use of our fluids to drilling operations outside of the North Sea, particularly in Asia and the Middle East.

Sales of our fine cesium chemicals are made by Cabot employees and through distributors and sales representatives.

Competition

Formate fluids compete mainly with traditional drilling fluid technologies. Competition in the well fluids business is based on product performance, quality, reliability, service, technical innovation, price, and proximity of inventory to customers' drilling operations. We believe our commercial strengths include our unique product offerings and their performance, and our customer service.

We are one of the leading manufacturers of fine cesium chemicals in the world and compete in the manufacture of fine cesium chemicals with multiple companies. We also compete with other technical solutions, which differ by application.

Raw Materials

The principal raw material used in this business is pollucite (cesium ore), of which we own, at our mine in Manitoba, Canada, a substantial portion of the world's known reserves. In November 2015, we completed a development project at the mine, and in September 2017, we commenced work on an infrastructure improvement and mining project that we expect to complete in late fiscal year 2018. We believe we have sufficient raw material to enable us to continue to supply cesium products for the foreseeable future, based on our anticipated consumption. We are assessing options to access additional reserves in the mine, various technologies to augment our cesium supply and alternative sources of ore as demand for our cesium products warrants.

Most oil and gas well construction jobs for which cesium formate is used require a large volume of the product. Accordingly, the Specialty Fluids business maintains a large supply of fluid.

Operations

Our mine and cesium formate and fine cesium chemical manufacturing facility are located in Manitoba, Canada, and we have fluid blending and reclamation facilities in Aberdeen, Scotland and in Bergen, Norway. In addition, we warehouse fluid and fine cesium chemical products at various locations around the world to support existing and potential operations.

Patents and Trademarks

We own and are a licensee of various patents, which expire at different times, covering many of our products as well as processes and product uses. Although the products made and sold under these patents and licenses are important to Cabot, the loss of any particular patent or license would not materially affect our business, taken as a whole. We sell our products under a variety of trademarks we own and take reasonable measures to protect them. While our trademarks are important to Cabot, the loss of any one of our trademarks would not materially affect our business, taken as a whole.

Seasonality

Our businesses are generally not seasonal in nature, although we may experience some regional seasonal declines during holiday periods and some weather-related seasonality in Purification Solutions.

Backlog

We do not consider backlog to be a significant indicator of the level of future sales activity. In general, we do not manufacture our products against a backlog of orders. Production and inventory levels are based on the level of incoming orders as well as projections of future demand. Therefore, we believe that backlog information is not material to understanding our overall business and is not a reliable indicator of our ability to achieve any particular level of revenue or financial performance.

Employees

As of September 30, 2017, we had approximately 4,500 employees. Some of our employees in the U.S. and abroad are covered by collective bargaining or similar agreements. We believe that our relations with our employees are generally satisfactory.

Research and Development

Cabot develops new and improved products and higher efficiency processes through Company-sponsored research and technical service activities, including those initiated in response to customer requests. In fiscal 2017, we opened a new Asia Technology Center in Shanghai, China to support our applications development and customer collaboration efforts in the region. Our expenditures for research and technical service activities generally are spread among our businesses and are shown in the Consolidated Statements of Operations. Further discussion of our research and technical expenses incurred in each of our last three fiscal years appears in MD&A in Item 7 below.

Safety, Health and Environment ("SH&E")

Cabot has been named as a potentially responsible party under the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (the "Superfund law") and comparable state statutes with respect to several sites primarily associated with our divested businesses. (See "Legal Proceedings" below.) During the next several years, as remediation of various environmental sites is carried out, we expect to spend against our $12 million environmental reserve for costs associated with such remediation. Adjustments are made to the reserve based on our continuing analysis of our share of costs likely to be incurred at each site. Inherent uncertainties exist in these estimates due to unknown conditions at the various sites, changing governmental regulations and legal standards regarding liability, and changing technologies for handling site investigation and remediation. While the reserve represents our best estimate of the costs we expect to incur, the actual costs to investigate and remediate these sites may exceed the amounts accrued in the environmental reserve. While it is always possible that an unusual event may occur with respect to a given site and have a material adverse effect on our results of operations in a particular period, we do not believe that the costs relating to these sites, in the aggregate, are likely to have a material adverse effect on our consolidated financial position. Furthermore, it is possible that we may also incur future costs relating to environmental liabilities not currently known to us or as to which it is currently not possible to make an estimate.

Our ongoing operations are subject to extensive federal, state, local, and foreign laws, regulations, rules, and ordinances relating to safety, health, and environmental matters ("SH&E Requirements"). These SH&E Requirements include requirements to obtain and comply with various environmental-related permits for constructing any new facilities and operating all of our existing facilities and for product registrations. We have expended and will continue to expend considerable sums to construct, maintain, operate, and improve facilities for safety, health and environmental protection and to comply with SH&E Requirements. We spent approximately $41 million in environmental-related capital expenditures at existing facilities in fiscal 2017. We anticipate spending approximately $54 million for such matters in fiscal 2018, a significant portion of which will be for the installation of technology controls for sulfur dioxide and nitrogen oxide emissions at certain of our carbon black plants.

In recognition of the importance of compliance with SH&E Requirements to Cabot, our Board of Directors has a Safety, Health, and Environmental Affairs Committee. The Committee, which is comprised of a majority of independent directors, meets four times a year and provides oversight and guidance to Cabot's safety, health and environmental management programs. In particular, the Committee reviews Cabot's environmental reserve, safety, health and environmental risk assessment and management processes, environmental and safety audit reports, performance metrics, performance as benchmarked against industry peer groups, assessed fines or penalties, site security and safety issues, health and environmental training initiatives, and the SH&E budget. The Committee also consults with our external and internal advisors regarding management of Cabot's safety, health and environmental programs.

The International Agency for Research on Cancer ("IARC") classifies carbon black as a Group 2B substance (known animal carcinogen, possible human carcinogen). We have communicated IARC's classification of carbon black to our customers and employees and have included that information in our safety data sheets and elsewhere, as appropriate. We continue to believe that the available evidence, taken as a whole, indicates that carbon black is not carcinogenic to humans, and does not present a health hazard when handled in accordance with good housekeeping and safe workplace practices as described in our safety data sheets.

REACH (Registration, Evaluation and Authorization of Chemicals), the European Union ("EU") regulatory framework for chemicals developed by the European Commission ("EC"), applies to all chemical substances produced or imported into the EU in quantities greater than one metric ton a year. Manufacturers or importers of these chemical substances are required to submit specified health, safety, risk and use information about the substance to the European Chemical Agency. We have completed all required registrations under REACH to date and will continue to complete the registrations under REACH for our products in accordance with future registration deadlines. We will also continue to work with the manufacturers and importers of our raw materials, including our feedstocks, to ensure their registration prior to the applicable deadlines. In addition, the EC recommended definition of nanomaterial is under review and an updated definition may be included in existing and future regulations. This definition, which may be used in the EU to identify materials for which special provisions such as risk assessment and ingredient labeling may be required, could apply to many of our existing products including carbon black, fumed silica, inkjet pigments and fumed alumina. Country-specific nanomaterial reporting programs have been implemented in some countries and are being developed by others. We will continue to monitor and address these requirements.

Environmental agencies worldwide are increasingly implementing regulations and other requirements resulting in more restrictive air emission limits globally, particularly as they relate to nitrogen oxide, sulphur dioxide and particulate matter emissions. In addition, global efforts to reduce greenhouse gas emissions impact the carbon black and activated carbon industries as carbon dioxide is emitted from those manufacturing processes. The EU Emission Trading Scheme applies to our carbon black facilities and one activated carbon facility in Europe. In China, two of our carbon black facilities are participating in regional pilot greenhouse gas emissions trading programs associated with the development of a national trading program, which we anticipate will be more fully defined in fiscal 2018. In Canada, our carbon black manufacturing facility is subject to the greenhouse gas emissions trading program that began in calendar year 2017. In other regions where we operate, some of our facilities are required to report their greenhouse gas emissions, but are not currently subject to programs requiring trading or emission controls. We generally expect to purchase emission credits where necessary to respond to allocation shortfalls. In addition, air emission regulations may be adopted in the future in other regions and countries where we operate, which could have an impact on our operations.

A number of organizations and regulatory agencies have become increasingly focused on the issue of water scarcity and water quality, particularly in certain geographic regions. We are engaged in various activities to promote water conservation and wastewater recycling. The costs associated with these activities are not expected to have a material adverse effect on our operations.

Various U.S. agencies and international bodies have adopted security requirements applicable to certain manufacturing and industrial facilities and marine port locations. These security-related requirements involve the preparation of security assessments and security plans in some cases, and in other cases the registration of certain facilities with specified governmental authorities. We closely monitor all security-related regulatory developments and believe we are in compliance with all existing requirements. Compliance with such requirements is not expected to have a material adverse effect on our operations.

Foreign and Domestic Operations

A significant portion of our revenues and operating profits is derived from overseas operations. The profitability of our segments is affected by fluctuations in the value of the U.S. dollar relative to foreign currencies. (See MD&A and the Geographic Information portion of Note S for further information relating to sales and long-lived assets by geographic area.) Further, currency fluctuations, nationalization and expropriation of assets are risks inherent in international operations. We have taken steps we deem prudent in our international operations to diversify and otherwise to protect against these risks, including the use of foreign currency financial instruments to reduce the risk associated with changes in the value of certain foreign currencies compared to the U.S. dollar. (See the risk management discussion contained in "Quantitative and Qualitative Disclosures About Market Risk" in Item 7A below and Note J of our Notes to the Consolidated Financial Statements).

Item 1A. Risk Factors

In addition to factors described elsewhere in this report, the following are important factors that could adversely affect our business. The risks described below are not the only risks we face. Additional risks not presently known to us or that we currently deem immaterial may also impair our business operations and financial results.

Negative or uncertain worldwide or regional economic conditions may adversely impact our business.

Our operations and performance are affected by worldwide and regional economic conditions. Uncertainty or a deterioration in the economic conditions affecting the businesses to which, or geographic areas in which, we sell products could reduce demand for our products. We may also experience pricing pressure on products and services, which could decrease our revenues and have an adverse effect on our financial condition and cash flows. In addition, during periods of economic uncertainty, our customers may temporarily pursue inventory reduction measures that exceed declines in the actual underlying demand. Our businesses are sensitive to industry capacity utilization, particularly Reinforcement Materials and Purification Solutions. As a result, pricing tends to fluctuate when capacity utilization changes occur, which could affect our financial performance.

As a chemical manufacturing company, our operations are subject to operational risks and have the potential to cause environmental or other damage as well as personal injury, which could adversely affect our business, results of operations and cash flows.

The operation of a chemical manufacturing business as well as the sale and distribution of chemical products are subject to operational as well as safety, health and environmental risks. For example, the production and/or processing of carbon black, specialty compounds, fumed metal oxides, aerogel, activated carbon and other chemicals involve the handling, transportation, manufacture or use of certain substances or components that may be considered toxic or hazardous. Our manufacturing processes and the transportation of our chemical products and/or the raw materials used to manufacture our products are subject to risks inherent in chemical manufacturing, including leaks, fires, explosions, toxic releases, mechanical failures or unscheduled downtime. If operational risks materialize, they could result in injury or loss of life, damage to the environment, or damage to property. In addition, the occurrence of material operating problems at our facilities or a disruption in our supply chain or distribution operations may result in loss of production, which, in turn, may make it difficult for us to meet customer needs. Accordingly, these events and their consequences could negatively impact the Company's results of operations and cash flows, both during and after the period of operational difficulties, and could harm our reputation.

A significant adverse change in a customer relationship or the failure of a customer to perform its obligations under agreements with us could harm our business or cash flows.

Our success in strengthening relationships and growing business with our largest customers and retaining their business over extended time periods is important to our future results. We have a group of key customers across our businesses that together represent a significant portion of our total net sales and operating revenues. The loss of any of our important customers, or a significant reduction in volumes sold to them, could adversely affect our results of operations until such business is replaced or any temporary disruption ends. Further in Reinforcement Materials we enter into supply agreements with a number of key customers, that have a duration of at least one year, which account for approximately half of our total rubber blacks volumes. Our success in negotiating the price and volume terms under these agreements could have a material effect on our results. In addition, any deterioration in the financial condition of any of our customers that impairs our customers' ability to make payments to us also could increase our uncollectible receivables and could affect our future results and financial condition.

Volatility in the price and availability of raw materials and energy could impact our margins and working capital.

Our manufacturing processes consume significant amounts of energy and raw materials, the costs of which are subject to worldwide supply and demand as well as other factors beyond our control. Dramatic increases in such costs could have an adverse effect on our results of operations. For example, movements in the market price for crude oil typically affect carbon black feedstock costs. Significant movements in the market price for crude oil tend to create volatility in our carbon black feedstock costs, which can affect our working capital and results of operations. Certain of our carbon black supply contracts contain provisions that adjust prices to account for changes in a relevant feedstock price index. We also attempt to offset the effects of increases in raw material and energy costs through selling price increases in our non-contract sales, productivity improvements and cost reduction efforts. Success in offsetting increased raw material and energy costs with price increases is largely influenced by competitive and economic conditions and could vary significantly depending on the segment served. Such increases may not be accepted by our customers, may not be sufficient to compensate for increased raw material and energy costs or may decrease demand for our products and our volume of sales. If we are not able to fully offset the effects of increased raw material or energy costs, it could have a significant impact on our financial results. Rapid declines in energy and raw material costs can also negatively impact our financial results, as such changes can negatively affect the returns we receive on our energy centers and yield improvement investments, and may negatively impact our contract pricing adjustments. In addition, we use a variety of feedstock indices in our supply contracts to adjust our prices for changes in raw materials costs. Depending on feedstock markets and our choice of feedstocks, the indices we use in our supply contracts may not precisely track our actual costs. This could result in an incongruity between our contract pricing adjustments and changes in our

actual feedstock costs, which can affect our margins.

In addition, we obtain certain of our raw materials from selected key suppliers. Although we maintain raw material inventory, if any of these suppliers is unable to meet its obligations under supply agreements with us on a timely basis or at all, we may be forced to incur higher costs to obtain the necessary raw materials elsewhere or, in certain limited cases, may not be able to obtain the required raw materials.

We may not be successful achieving our growth expectations from new products, new applications and technology developments, and money we spend on these efforts may not result in a proportional increase in our revenues or profits.

We may not be successful achieving our growth expectations from developing new products or product applications. Moreover, we cannot be certain that the costs we incur investing in new product and technology development will result in a proportional increase in our revenues or profits. In addition, the timely commercialization of products that we are developing may be disrupted or delayed by manufacturing or other technical difficulties, market acceptance or insufficient market size to support a new product, competitors' new products, and difficulties in moving from the experimental stage to the production stage. These disruptions or delays could affect our future business results.

We face operational risks inherent in mining operations and our mining operations have the potential to cause safety issues, including those that could result in significant personal injury.

We own two mines, a cesium mine in Manitoba, Canada, a portion of which is located under Bernic Lake, and an above-ground lignite mine, which is located close to our Marshall, Texas facility and operated by a subsidiary of The North American Coal Company. Mining operations by their nature are activities that involve a high level of uncertainty and are often affected by risks and hazards outside of our control. At our lignite mine, the risks are primarily operational risks associated with the maintenance and operation of the heavy equipment required to dig and haul the lignite, and risks relating to lower than expected lignite quality or recovery rates. Our underground mine in Manitoba is subject to a number of risks, including industrial accidents, unexpected geological conditions, fall of ground accidents or structural collapses, which, in the case of our cesium mine, could lead to flooding. Following a fall of ground incident in 2013, we implemented additional safety measures and several types of monitoring devices in the mine that have indicated good structural stability in the mine since that time. However, the structural stability may change at any time and there remains a possibility of deterioration and flooding of this mine. The failure to adequately manage these risks could result in significant personal injury, loss of life, damage to mineral properties, production facilities or mining equipment, damage to the environment, delays in or reduced production, and potential legal liabilities.

Any failure to realize benefits from acquisitions, alliances or joint ventures could adversely affect future financial results.

In achieving our strategic plan objectives, we may pursue acquisitions, alliances or joint ventures intended to complement or expand our existing businesses globally or add product technology, or both. The success of acquisitions of businesses, new technologies and products, or arrangements with third parties is not always predictable and we may not be successful in realizing our objectives as anticipated. We may not be able to integrate any acquired businesses successfully into our existing businesses, make such businesses profitable, or realize anticipated cost savings or synergies, if any, from these acquisitions, which could adversely affect our business results.

Plant capacity expansions and site development projects may impact existing plant operations, be delayed and/or not achieve the expected benefits.

Our ability to complete capacity expansions and other site development projects as planned may be delayed or interrupted by the need to obtain environmental and other regulatory approvals, unexpected cost increases, availability of labor and materials, unforeseen hazards such as weather conditions, and other risks customarily associated with construction projects. These risks include the risk that existing plant operations are disrupted, which could make it difficult for us to meet our customer needs. Moreover, the cost of these activities could have a negative impact on the financial performance of the relevant business until capacity utilization at the particular facility is sufficient to absorb the incremental costs associated with the expansion, in the case of capacity expansion projects. In addition, our ability to expand capacity in emerging regions depends in part on economic and political conditions in these regions and, in some cases, on our ability to establish operations, construct additional manufacturing capacity or form strategic

business alliances.

An interruption in our operations as a result of fence-line arrangements could disrupt our manufacturing operations and adversely affect our financial results.

At certain of our facilities we have fence-line arrangements with adjacent third party manufacturing operations (“fence-line partners”), who provide raw materials for our manufacturing operations and/or take by-products generated from our operations. Accordingly, any unplanned disruptions or curtailments in a fence-line partner’s production facilities that impacts their ability to supply us with raw materials or to take our manufacturing by-products could disrupt our manufacturing operations or cause us to incur increased operating costs to mitigate such disruption.

If our assumptions about future sales and profitability of the Purification Solutions segment are incorrect and we do not achieve our growth expectations for this business, we may be required to impair certain assets.

We performed our annual goodwill impairment test of Purification Solutions as of May 31, 2017 and determined that the fair value of the reporting unit exceeded its carrying amount by 13% at that time. Our strategic plan underlying this analysis relies on certain growth assumptions that are primarily dependent on (i) growth in demand for our existing portfolio of activated carbon products and new products developed for environmental and specialty applications, and (ii) stable demand in the mercury removal related portion of the business, which is largely dependent on the amount of coal-based power generation used in the U.S. and the continued regulation of utilities under the Mercury and Air Toxics Standards (“MATS”). In April 2017, the U.S. Environmental Protection Agency (“EPA”) indicated that it intends to review the cost benefit analysis prepared by the EPA in support of MATS to determine if the EPA should reconsider MATS or some part of it. This continues to be under review by the EPA. Any action that the EPA takes related to MATS that decreases demand for our products for mercury removal, and/or our failure to achieve our growth expectations for our other products could have a negative effect on the financial results and the fair value of the Purification Solutions business, and lead to an impairment of certain assets.

We are exposed to political or country risk inherent in doing business in some countries.

Sales outside of the U.S. constituted a majority of our revenues in fiscal 2017. We conduct business in several countries that have less stable legal systems and financial markets, and potentially more corrupt business environments than the U.S. Our operations in some countries are subject to the following risks: changes in the rate of economic growth; unsettled political or economic conditions; non-renewal of operating permits or licenses; possible expropriation or other governmental actions; corruption by government officials and other third parties; social unrest, war, terrorist activities or other armed conflict; confiscatory taxation or other adverse tax policies; deprivation of contract rights; trade regulations affecting production, pricing and marketing of products; reduced protection of intellectual property rights; restrictions on the repatriation of income or capital; exchange controls; inflation; currency fluctuations and devaluation; the effect of global health, safety and environmental matters on economic conditions and market opportunities; and changes in financial policy and availability of credit. In addition, there may be costs associated with repatriating income or capital.

The Chinese government has, from time to time, curtailed manufacturing operations, without notice, in industrial regions out of growing concern over air quality. The timing and length of these curtailments are difficult to predict and, at times, are applied to manufacturing operations without regard to whether the operations being curtailed comply with environmental regulations in the area. Accordingly, although we believe our operations are in compliance with applicable regulations, our manufacturing operations in China may be subject to these curtailments. These events could negatively impact the Company’s results of operations and cash flows both during and after the period of any curtailment affecting the Company’s operations.

We face competition from other specialty chemical companies.

We operate in a highly competitive marketplace. Our ability to compete successfully depends in part upon our ability to maintain a superior technological capability and to continue to identify, develop and commercialize new and innovative, high value-added products for existing and future customers. Increased competition from existing or newly developed products offered by our competitors or companies whose products offer a similar functionality as our products and could be substituted for our products, may negatively affect demand for our products. In addition, actions by our competitors could affect our ability to maintain or raise prices, successfully enter new markets or maintain or grow our market position.

Litigation or legal proceedings could expose us to significant liabilities and thus negatively affect our financial results.

As more fully described in “Legal Proceedings” in Item 3 below, we are a party to or the subject of lawsuits, claims, and proceedings, including, but not limited to, those involving environmental, and health and safety matters as well as product liability and personal injury claims relating to asbestosis, silicosis, and coal worker’s pneumoconiosis. We are also a potentially responsible party in various environmental proceedings and remediation matters wherein substantial amounts are at issue. Adverse rulings, judgments or settlements in pending or future litigation (including liabilities associated with respirator claims) or in connection with environmental remediation activities could adversely affect our financial results or cause our results to differ materially from those expressed or forecasted in any forward-looking statements.

Fluctuations in foreign currency exchange and interest rates affect our financial results.

We earn revenues, pay expenses, own assets and incur liabilities in countries using currencies other than the U.S. dollar. In fiscal 2017, we derived a majority of our revenues from sales outside the U.S. Because our consolidated financial statements are presented in U.S. dollars, we must translate revenues and expenses, as well as assets and liabilities, into U.S. dollars at exchange rates in effect during or at the end of each reporting period. Therefore, increases or decreases in the value of the U.S. dollar against other currencies in countries where we operate will affect our results of operations and the value of balance sheet items denominated in foreign currencies. Due to the geographic diversity of our operations, weaknesses in some currencies might be offset by strengths in others over time. In addition, we are exposed to adverse changes in interest rates. We manage both these risks through normal operating and financing activities and, when deemed appropriate, through the use of derivative instruments as well as foreign currency debt. We cannot be certain, however, that we will be successful in reducing the risks inherent in exposures to foreign currency and interest rate fluctuations.

Further, we have exposure to foreign currency movements because certain foreign currency transactions need to be converted to a different currency for settlement. These conversions can have a direct impact on our cash flows.

Our tax rate is dependent upon a number of factors, a change in any of which could impact our future tax rates and net income.

Our future tax rates may be adversely affected by a number of factors, including: future changes in the jurisdictions in which our profits are determined to be earned and taxed; changes in the estimated realization of our net deferred tax assets; the repatriation of non-U.S. earnings for which we have not previously provided for U.S. income and non-U.S. withholding taxes; adjustments to estimated taxes upon finalization of various tax returns; increases in expenses that are not deductible for tax purposes, including charges from impairment of goodwill in connection with acquisitions; changes in available tax credits; the resolution of issues arising from tax audits with various tax authorities; and changes in tax laws or the interpretation of such tax laws. Losses for which no tax benefits can be recorded could materially impact our tax rate and its volatility from one quarter to another.

Information technology systems failures, data security breaches or network disruptions could compromise our information, disrupt our operations and expose us to liability, which may adversely impact our operations.

In the ordinary course of our business, we store sensitive data, including intellectual property, our proprietary business information and certain information of our customers, suppliers, business partners, and employees in our information technology systems. The secure processing, maintenance and transmission of this data is critical to our operations. Information technology systems failures, including risks associated with upgrading our systems or in successfully integrating information technology and other systems in connection with the integration of businesses we acquire, network disruptions or unauthorized access could disrupt our operations by impeding our processing of transactions and our financial reporting, and our ability to protect our customer or company information, which could have a material adverse effect on our business or results of operations. In addition, as with all enterprise information systems, our information technology systems could be penetrated by outside parties intent on extracting information, corrupting information, or disrupting business processes. Breaches of our security measures or the accidental loss, inadvertent disclosure, or unapproved dissemination of proprietary information or sensitive or confidential information about the Company, our employees, our vendors, or our customers, could result in legal claims or proceedings and potential liability for us, damage to our reputation, and could otherwise harm our business and our results of operations.

Our operations are subject to extensive safety, health and environmental requirements, which could increase our costs and/or reduce our profit.

Our ongoing operations are subject to extensive federal, state, local and foreign laws, regulations, rules and ordinances relating to safety, health and environmental matters, many of which provide for substantial monetary fines and

criminal sanctions for violations. These include requirements to obtain and comply with various environmental-related permits for constructing any new facilities and operating all of our existing facilities. In addition, in certain geographic areas, our carbon black and activated carbon facilities are subject to greenhouse gas emission trading schemes under which we may be required to purchase emission credits if our emission levels exceed our allocations. The enactment of new environmental laws and regulations and/or the more aggressive interpretation of existing requirements could require us to incur significant costs for compliance or capital improvements or limit our current or planned operations, any of which could have a material adverse effect on our earnings or cash flow. We attempt to offset the effects of these compliance costs through price increases, productivity improvements and cost reduction efforts. Success in offsetting any such increased regulatory costs is largely influenced by competitive and economic conditions and could vary significantly depending on the segment served. Such increases may not be accepted by our customers, may not be sufficient to compensate for increased regulatory costs or may decrease demand for our products and our volume of sales. (See “Legal Proceedings” in Item 3 below).

Certain national and international health organizations have classified carbon black as a possible or suspected human carcinogen. To the extent that, in the future, (i) these organizations re-classify carbon black as a known or confirmed carcinogen, (ii) other organizations or government authorities in other jurisdictions classify carbon black or any of our other finished products, raw materials or intermediates as suspected or known carcinogens or otherwise hazardous, or (iii) there is discovery of adverse health effects attributable to production or use of carbon black or any of our other finished products, raw materials or intermediates, we could be required to incur significantly higher costs to comply with environmental, health and safety laws, or to comply with restrictions on sales of our products, be subject to legal claims, and our reputation and business could be adversely affected. In addition, chemicals that are currently classified as non-hazardous may be classified as hazardous in the future, and our products may have characteristics that are not recognized today but may be found in the future to impair human health or to be carcinogenic.

The elimination of tariffs placed on U.S. imports of Chinese activated carbon, or their failure to adequately address the impact of low-priced imports from China, could have a material adverse effect on our Purification Solutions segment.

Purification Solutions faces competition in the U.S. from low-priced imports of activated carbon products. If the amounts of these low-priced imports increase, especially if they are sold at less than fair value, our sales of competing products could decline, which could have an adverse effect on the earnings of Purification Solutions. In addition, sales of these low-priced imports may negatively impact our pricing. To limit these activities, regulators in the U.S. have enacted an antidumping duty order on steam activated carbon products from China. A proceeding that will evaluate whether to extend the order for an additional five years will be initiated in February 2018. The amount of antidumping duties collected on imports of steam activated carbon from China is reviewed annually by the U.S. Department of Commerce. To the extent the antidumping margins do not adequately address the degree to which imports are unfairly traded, the antidumping order may be less effective in reducing the volume of these low-priced activated carbon imports in the U.S., which could negatively affect demand and/or pricing for our products. In addition, if the antidumping order is not extended beyond its current term, the amount of low-priced imports from China may increase, which could have an adverse effect on our Purification Solutions business.

We have entered into a number of derivative contracts with financial counterparties. The effectiveness of these contracts is dependent on the ability of these financial counterparties to perform their obligations and their nonperformance could harm our financial condition.

We have entered into forward foreign currency contracts and cross-currency swaps as part of our financial risk management strategy. The effectiveness of our risk management program using these instruments is dependent, in part, upon the counterparties to these contracts honoring their financial obligations. If any of our counterparties are unable to perform their obligations in the future, we could be exposed to increased earnings and cash flow volatility due to an instrument’s failure to hedge or adequately address a financial risk.

The continued protection of our patents, trade secrets and other proprietary intellectual property rights are important to our success.

Our patents, trade secrets and other intellectual property rights are important to our success and competitive position. We own various patents and other intellectual property rights in the U.S. and other countries covering many of our products, as well as processes and product uses. Where we believe patent protection is not appropriate or obtainable, we rely on trade secret laws and practices to protect our proprietary technology and processes, such as physical security, limited dissemination and access and confidentiality agreements with our employees, customers, consultants, business partners, potential licensees and others to protect our trade secrets and other proprietary information. However, trade secrets can be difficult to protect and the protective measures we have put in place may not prevent disclosure or unauthorized use of our proprietary information or provide an adequate remedy in the event of misappropriation or other violations of our proprietary rights. In addition, we are a licensee of various patents and intellectual property rights belonging to others in the U.S. and other countries. Because the laws and enforcement mechanisms of some countries may not allow us to protect our proprietary rights to the same extent as we are able to

do in the U.S., the strength of our intellectual property rights will vary from country to country.

Irrespective of our proprietary intellectual property rights, we may be subject to claims that our products, processes or product uses infringe the intellectual property rights of others. These claims, even if they are without merit, could be expensive and time consuming to defend and if we were to lose such claims, we could be enjoined from selling our products or using our processes and/or be subject to damages, or be required to enter into licensing agreements requiring royalty payments and/or use restrictions. Licensing agreements may not be available to us, or if available, may not be available on acceptable terms.

Natural disasters could affect our operations and financial results.

We operate facilities in areas of the world that are exposed to natural hazards, such as floods, windstorms, hurricanes, and earthquakes. Such events could disrupt our supply of raw materials or otherwise affect production, transportation and delivery of our products or affect demand for our products.

Item 1B. Unresolved Staff Comments
None.

Item 2. Properties
Cabot’s corporate headquarters are in leased office space in Boston, Massachusetts. We also own or lease office, manufacturing, storage, distribution, marketing and research and development facilities in the U.S. and in foreign countries. The locations of our principal manufacturing and/or administrative facilities are set forth in the table below. Unless otherwise indicated, all the properties are owned.

	Reinforcement	Performance	Purification	
Location by Region	Materials	Chemicals	Solutions	Specialty Fluids
Americas Region				
Alpharetta, Georgia*(1)	X	X	X	X
Tuscola, Illinois		X		
Canal, Louisiana	X	X		
Ville Platte, Louisiana	X			
Billerica, Massachusetts	X	X	X	X
Haverhill, Massachusetts		X		
Midland, Michigan		X		
Pryor, Oklahoma			X	
Marshall, Texas			X	
Pampa, Texas	X	X		
Campana, Argentina	X			
Maua, Brazil	X	X		
Sao Paulo, Brazil*(1)	X	X	X	X
Lac du Bonnet, Manitoba, Canada**				X
Saint-Jean-sur-Richelieu, Québec, Canada		X		
Sarnia, Ontario, Canada	X	X		
Cartagena, Colombia	X			
Altamira, Mexico	X			
Europe, Middle East and Africa Region				
Loncin, Belgium		X		
Pepinster, Belgium		X		
Valasske Mezirici (Valmez), Czech Republic**	X			
Port Jerome, France**	X			
Frankfurt, Germany*		X		
Rheinfelden, Germany		X		
Ravenna, Italy (2 plants)	X		X	
Riga, Latvia*(1)	X	X	X	X
Bergen, Norway*				X
Schaffhausen, Switzerland*	X	X	X	X
Botlek, Netherlands**	X	X		
Amersfoort, Netherlands*			X	
Klazienaveen, Netherlands			X	
Zaandam, Netherlands			X	
Dubai, United Arab Emirates*		X		
Purton, United Kingdom (England)			X	
Aberdeen, United Kingdom (Scotland)*				X

Glasgow, United Kingdom (Scotland)		X
Barry, United Kingdom (Wales)**	X	

Location by Region	Reinforcement Materials	Performance Chemicals	Purification Solutions	Specialty Fluids
Asia Pacific Region				
Jiangxi Province, China**		X		
Tianjin, China**	X	X		
Shanghai, China*(1)	X	X	X	X
Shanghai, China** (plant)	X			
Xingtai City, China**	X			
Mumbai, India*	X	X	X	
Cilegon, Indonesia**	X			
Jakarta, Indonesia*(1)	X	X	X	X
Chiba, Japan	X			
Shimonoseki, Japan**	X			
Tokyo, Japan*(1)	X	X	X	X
Port Dickson, Malaysia**	X			

(1) Business service center
* Leased premises
** Building(s) owned by Cabot on leased land

We conduct research and development for our various businesses primarily at facilities in Billerica, Massachusetts; Amersfoort, Netherlands; Pampa, Texas; Pepinster, Belgium; Frankfurt, Germany; and Shanghai, China.

Our existing manufacturing plants generally have sufficient production capacity to meet current requirements and expected near-term growth. These plants are generally well maintained, in good operating condition and suitable and adequate for their intended use. Our administrative offices and other facilities are suitable and adequate for their intended purposes.

Item 3. Legal Proceedings

Cabot is a party in various lawsuits and environmental proceedings wherein substantial amounts are claimed. The following is a description of the significant proceedings pending on September 30, 2017, unless otherwise specified.

Environmental Proceedings

In November 2013, Cabot entered into a Consent Decree with the EPA and the Louisiana Department of Environmental Quality ("LDEQ") regarding Cabot's three carbon black manufacturing facilities in the U.S. This settlement is related to the EPA's national enforcement initiative focused on the U.S. carbon black manufacturing sector alleging non-compliance with certain regulatory and permitting requirements under The Clean Air Act, including the New Source Review ("NSR") construction permitting requirements. Pursuant to this settlement, Cabot is in the process of installing technology controls for sulfur dioxide and nitrogen oxide. We expect that the total capital costs to install these controls will be between $100 million and $150 million and will be incurred through calendar year 2021. Continental Carbon settled with the EPA on similar terms in 2015. It is expected that other carbon black manufacturers will also settle with the EPA on similar terms.

We continue to perform certain sampling and remediation activities at a former pine tar manufacturing site in Gainesville, Florida that we sold in the 1960s. Those activities are pursuant to a formal Record of Decision and 1991 Consent Decree with the EPA. Cabot installed a groundwater treatment system at the site in the early 1990s, and that system is still in operation. We have also been requested by the EPA and other stakeholders to carry out various other additional work at the site, the scope of which has yet to be fully determined. We continue to work cooperatively with the EPA, the Florida Department of Environmental Protection and the local authorities on this matter.

As of September 30, 2017, we had a $12 million reserve for environmental remediation costs at various sites. The operation and maintenance component of this reserve was $4 million. The $12 million reserve represents our current best estimate of costs likely to be incurred for remediation based on our analysis of the extent of cleanup required, alternative cleanup methods available, the ability of other responsible parties to contribute and our interpretation of laws and regulations applicable to each of our sites.

Other Proceedings

Respirator Liabilities

We have exposure in connection with a safety respiratory products business that a subsidiary acquired from American Optical Corporation ("AO") in an April 1990 asset purchase transaction. The subsidiary manufactured respirators under the AO brand and disposed of that business in July 1995. In connection with its acquisition of the business, the subsidiary agreed, in certain circumstances, to assume a portion of AO's liabilities, including costs of legal fees together with amounts paid in settlements and judgments, allocable to AO respiratory products used prior to the 1990 purchase by the Cabot subsidiary. In exchange for the subsidiary's assumption of certain of AO's respirator liabilities, AO agreed to provide to the subsidiary the benefits of: (i) AO's insurance coverage for the period prior to the 1990 acquisition and (ii) a former owner's indemnity of AO holding it harmless from any liability allocable to AO respiratory products used prior to May 1982.

Generally, these respirator liabilities involve claims for personal injury, including asbestosis, silicosis and coal worker's pneumoconiosis, allegedly resulting from the use of respirators that are alleged to have been negligently designed and/or labeled. Neither Cabot, nor its past or present subsidiaries, at any time manufactured asbestos or asbestos-containing products. At no time did this respiratory product line represent a significant portion of the respirator market.

The subsidiary transferred the business to Aearo Corporation ("Aearo") in July 1995. Cabot agreed to have the subsidiary retain certain liabilities associated with exposure to asbestos and silica while using respirators prior to the

1995 transaction so long as Aearo paid, and continues to pay, Cabot an annual fee of $400,000. Aearo can discontinue payment of the fee at any time, in which case it will assume the responsibility for and indemnify Cabot against those liabilities which Cabot's subsidiary had agreed to retain. We anticipate that we will continue to receive payment of the $400,000 fee from Aearo and thereby retain these liabilities for the foreseeable future. We have no liability in connection with any products manufactured by Aearo after 1995.

In addition to Cabot's subsidiary and as described above, other parties are responsible for significant portions of the costs of respirator liabilities, leaving Cabot's subsidiary with a portion of the liability in only some of the pending cases. These parties include Aearo, AO, AO's insurers, another former owner and its insurers, and a third-party manufacturer of respirators formerly sold under the AO brand and its insurers (collectively, with Cabot's subsidiary, the "Payor Group").

As of September 30, 2017 and 2016, there were approximately 37,000 and 38,000 claimants, respectively, in pending cases asserting claims against AO in connection with respiratory products. Cabot has contributed to the Payor Group's defense and settlement costs with respect to a percentage of pending claims depending on several factors, including the period of alleged product use. In order to quantify our estimated share of liability for pending and future respirator liability claims, we have engaged, through counsel, the assistance of Hamilton, Rabinovitz & Alschuler, Inc. ("HR&A"), a leading consulting firm in the field of tort liability valuation. The methodology used by HR&A addresses the complexities surrounding our potential liability by making assumptions about future claimants with respect to periods of asbestos, silica and coal mine dust exposure and respirator use. Using those and other assumptions, HR&A estimates the number of future asbestos, silica and coal mine dust claims that will be filed and the related costs that would be incurred in resolving both currently pending and future claims. On this basis, HR&A then estimates the value of the share of these liabilities that reflect our period of direct manufacture and our contractual obligations. Based on the HR&A estimates, as of September 30, 2017, we had $18 million reserved for our estimated share of liability for pending and future respirator claims. We made payments related to our respirator liability of $3 million in both fiscal 2017 and fiscal 2016 and $2 million in fiscal 2015.

Our current estimate of the cost of our share of existing and future respirator liability claims is based on facts and circumstances existing at this time. Developments that could affect our estimate include, but are not limited to, (i) significant changes in the number of future claims, (ii) changes in the rate of dismissals without payment of pending claims, (iii) significant changes in the average cost of resolving claims, (iv) significant changes in the legal costs of defending these claims, (v) changes in the nature of claims received, (vi) changes in the law and procedure applicable to these claims, (vii) the financial viability of members of the Payor Group, (viii) a change in the availability of the insurance coverage of the members of the Payor Group or the indemnity provided by AO's former owner, (ix) changes in the allocation of costs among the Payor Group, and (x) a determination that the assumptions that were used to estimate our share of liability are no longer reasonable. We cannot determine the impact of these potential developments on our current estimate of our share of liability for these existing and future claims. Accordingly, the actual amount of these liabilities for existing and future claims could be different than the reserved amount.

Other Matters

We have various other lawsuits, claims and contingent liabilities arising in the ordinary course of our business and with respect to our divested businesses. We do not believe that any of these matters will have a material adverse effect on our financial position; however, litigation is inherently unpredictable. We could incur judgments, enter into settlements or revise our expectations regarding the outcome of certain matters, and such developments could have a material impact on our results of operations in the period in which the amounts are accrued or our cash flows in the period in which the amounts are paid.

Item 4. Mine Safety Disclosures
Not applicable.

Executive Officers of the Registrant

Set forth below is certain information about Cabot's executive officers as of November 22, 2017.

Sean D. Keohane, age 50, is President and Chief Executive Officer and a member of Cabot's Board of Directors, positions he has held since March 2016. Mr. Keohane joined Cabot in August 2002 and was named General Manager of Performance Chemicals in May 2008. From March 2012 until November 2014, he was Senior Vice President and President of Performance Chemicals, and from November 2014 until March 2016 he was Executive Vice President and President of Reinforcement Materials. He was appointed Vice President in March 2005, Senior Vice President in March 2012 and Executive Vice President in November 2014. He was a member of the Interim Office of the Chief Executive Officer (the "CEO Office"), which was in place from December 2015 until March 2016.

Eduardo E. Cordeiro, age 50, is Executive Vice President and Chief Financial Officer and President of the Americas region. Mr. Cordeiro joined Cabot in 1998 and has served in a variety of leadership positions, including Corporate Controller, General Manager of the Fumed Metal Oxides business and General Manager of the Company's former tantalum business. He was responsible for Corporate Strategy from May 2008 until February 2009, when he became Cabot's Chief Financial Officer. Mr. Cordeiro was appointed Vice President in March 2003 and Executive Vice President in March 2009. He was a member of the CEO Office, which was in place from December 2015 until March 2016.

Nicholas S. Cross, age 56, is Executive Vice President and President of Performance Chemicals and the Europe, Middle East and Africa ("EMEA") region. Mr. Cross joined Cabot in September 2009 as President of the EMEA region and was appointed President of Advanced Technologies in January 2013 and President of Performance Chemicals in November 2014. He was appointed Vice President upon joining Cabot in 2009, Senior Vice President in March 2012 and Executive Vice President in November 2014. Prior to joining Cabot, Mr. Cross held a variety of leadership positions in BP plc's Chemicals, Oil and Gas businesses, including Director of Chemicals Strategy and Head of International NGLs. He was a member of the CEO Office, which was in place from December 2015 until March 2016.

Brian A. Berube, age 55, is Senior Vice President and General Counsel. Mr. Berube joined Cabot in 1994 as an attorney in Cabot's law department and became Deputy General Counsel in June 2001, Business General Counsel in March 2002, and General Counsel in March 2003. He was interim Chief Human Resources Officer from July 2016 until March 2017. Mr. Berube was appointed Vice President in March 2002 and Senior Vice President in March 2012. He was a member of the CEO Office, which was in place from December 2015 until March 2016.

Hobart C. Kalkstein, age 47, is Senior Vice President and President of Reinforcement Materials. Mr. Kalkstein joined Cabot in 2005. Since joining the Company, he has held several key management positions. Prior to assuming his current role in April 2016, he was Vice President of Corporate Strategy and Development from December 2015 to April 2016. From October 2013 to December 2015, he served as Vice President of Global Business Operations for Purification Solutions and from November 2012 to December 2015 as General Manager of Global Emission Control Solutions for Purification Solutions, and from January 2012 to November 2012 he served as Vice President of Business Operations and Executive Director of Marketing and Business Strategy for Performance Chemicals. Prior to that, he served as General Manager of the Aerogel business from October 2007 to February 2010. He was appointed Senior Vice President in April 2016.

Friedrich von Gottberg, age 49, is Senior Vice President and President of Purification Solutions and interim Chief Technology Officer. Mr. von Gottberg joined Cabot in 1997. Since joining the Company, he has held a variety of leadership positions in Research and Development and Finance. Prior to assuming his current role in January 2013, he was Vice President of the New Business Group from March 2008 until March 2012, and Senior Vice President and President of Advanced Technologies from March 2012 until January 2013. He was appointed interim Chief Technology Officer in May 2017. Mr. von Gottberg was appointed Vice President in March 2005 and Senior Vice President in March 2012.

PART II

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

Cabot's common stock is listed for trading (symbol CBT) on the New York Stock Exchange. As of November 17, 2017, there were 697 holders of record of Cabot's common stock. The tables below show the high and low sales price for Cabot's common stock for each of the fiscal quarters ended December 31, March 31, June 30, and September 30 and the quarterly cash dividend paid on Cabot's common stock for the past two fiscal years.

Stock Price and Dividend Data

	Quarters Ended			
	December 31	March 31	June 30	September 30
Fiscal 2017				
Cash dividends per share	$0.30	$0.30	$0.315	$ 0.315
Price range of common stock:				
High	$54.24	$60.72	$61.34	$ 56.45
Low	$47.99	$50.67	$50.21	$ 50.56
Fiscal 2016				
Cash dividends per share	$0.22	$0.22	$0.30	$ 0.30
Price range of common stock:				
High	$44.23	$49.62	$50.68	$ 53.48
Low	$31.03	$36.12	$42.27	$ 43.95

Issuer Purchases of Equity Securities

The table below sets forth information regarding Cabot's purchases of its equity securities during the quarter ended September 30, 2017:

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[(1)]	Maximum Number (or Approximate Dollar Value) of Shares that May Yet Be Purchased Under the Plans or Programs[(1)]
July 1, 2017 — July 31, 2017	—	$ —	—	2,065,824
August 1, 2017 — August 31, 2017	205,000	$ 52.09	205,000	1,860,824
September 1, 2017 — September 30, 2017	145,000	$ 53.04	145,000	1,715,824
Total	350,000		350,000	

(1) On January 13, 2015, Cabot publicly announced that the Board of Directors authorized the Company to repurchase up to five million shares of its common stock on the open market or in privately negotiated transactions. The prior repurchase authorization was terminated at that time. The current authorization does not have a set expiration date.

Item 6. Selected Financial Data

On November 18, 2013, Cabot purchased all of its joint venture partner's common stock in NHUMO, S.A. de C.V. ("NHUMO"), which represented approximately 60% of the outstanding common stock of the joint venture. Prior to this transaction, the Company owned approximately 40% of the outstanding common stock of NHUMO, and the NHUMO entity was accounted for as an equity affiliate of the Company. The results of fiscal 2014 in the table below include 11 months of results at 100% consolidation and one month of results accounted for under the equity method at 40%. Results for fiscal 2013 are reported under the equity method at 40%.

The Company completed the sale of its Security Materials business on July 31, 2014. The results of operations for this business for all periods presented are reflected as discontinued operations in the Consolidated Statements of Operations.

	Years Ended September 30				
	2017	2016	2015	2014	2013
	(In millions, except per share amounts and ratios)				
Consolidated Net Income (Loss)					
Net sales and other operating revenues	$2,717	$2,411	$2,871	$3,647	$3,456
Gross profit	652	578	585	721	633
Selling and administrative expenses	260	275	282	326	297
Research and technical expenses	56	53	58	60	68
Purification Solutions long-lived assets impairment charge	—	—	210	—	—
Purification Solutions goodwill impairment charge	—	—	352	—	—
Income (loss) from operations	336	250	(317)	335	268
Net interest expense and other charges[1]	(48)	(56)	(60)	(27)	(58)
Income (loss) from continuing operations [2]	288	194	(377)	308	210
(Provision) benefit for income taxes [3]	(29)	(34)	45	(92)	(60)
Equity in earnings of affiliated companies	7	3	4	—	11
Income (loss) from discontinued operations, net of tax	—	1	2	2	(1)
Net income (loss)	266	164	(326)	218	160
Net income attributable to noncontrolling interests, net of tax	25	15	8	19	7
Net income (loss) attributable to Cabot Corporation	$241	$149	$(334)	$199	$153
Common Share Data					
Diluted net income (loss) attributable to Cabot Corporation:					
Income (loss) from continuing operations	$3.80	$2.34	$(5.29)	$3.01	$2.37
Income (loss) from discontinued operations	—	0.02	0.02	0.02	(0.01)
Net income (loss) attributable to Cabot Corporation	$3.80	$2.36	$(5.27)	$3.03	$2.36
Dividends	$1.23	$1.04	$0.88	$0.84	$0.80
Closing prices	$55.80	$52.41	$31.56	$50.77	$42.71
Weighted-average diluted shares outstanding—millions	62.7	62.9	63.4	65.1	64.5
Shares outstanding at year end—millions	61.9	62.2	62.5	64.4	64.0
Consolidated Financial Position					
Current assets[4]	$1,262	$1,047	$1,004	$1,364	$1,495
Net property, plant, and equipment	1,305	1,290	1,383	1,581	1,600
Other assets[4]	747	698	676	1,139	1,138
Total assets	$3,314	$3,035	$3,063	$4,084	$4,233
Current liabilities[4]	$742	$397	$440	$630	$844
Long-term debt[4]	661	914	967	1,004	1,020
Other long-term liabilities[4]	310	352	318	386	286
Cabot Corporation stockholders' equity	1,480	1,274	1,234	1,942	1,951
Noncontrolling interests	121	98	104	122	132

Total liabilities and stockholders’ equity	$3,314		$3,035		$3,063		$4,084		$4,233	
Selected Financial Ratios										
Net debt to capitalization ratio[5]	29	%	35	%	41	%	33	%	36	%
Adjusted return on net assets[6]	13	%	11	%	9	%	10	%	9	%

[1] Net interest expense and other charges includes foreign currency activity as follows: a loss of $4 million for fiscal 2017, a gain of $5 million for fiscal 2016, a loss of $8 million for fiscal 2015, a loss of $2 million for fiscal 2014, and a gain of $2 million for fiscal 2013.

[2] Income (loss) from continuing operations includes certain items as presented in the table below. A discussion of certain items is included in Definition of Terms and Non-GAAP Financial Measures in Results of Operations.

	Years Ended September 30				
	2017	2016	2015	2014	2013
	(In millions)				
Global restructuring activities (Note N)	$(3)	$(47)	$(21)	$(29)	$(35)
Legal and environmental matters and reserves	1	(17)	—	(18)	(1)
Acquisition and integration-related charges	—	—	(5)	(7)	(21)
Employee benefit plan settlement and other charges (Note L)	—	—	(21)	—	—
Impairment of goodwill and long-lived assets of Purification Solutions (Note E)	—	—	(562)	—	—
Non-recurring gain (loss) on foreign exchange	—	(11)	(2)	(3)	3
Gain on existing investment in NHUMO	—	—	—	29	—
Inventory adjustment (Note C)	—	—	(6)	—	—
Executive transition costs	—	(6)	—	—	—
Other certain items	(1)	—	—	—	—
Total certain items, pre-tax	(3)	(81)	(617)	(28)	(54)
Tax-related certain items:					
Tax impact of certain items[(a)]	1	31	94	17	10
Tax impact of certain foreign exchange gains (losses)	—	—	—	—	(12)
Discrete tax items	25	—	13	(17)	11
Total tax-related certain items	26	31	107	—	9
Total certain items, net of tax	$23	$(50)	$(510)	$(28)	$(45)

(a) The tax impact of certain items is determined by (1) starting with the current and deferred income tax expense or benefit, included in Net income attributable to Cabot Corporation, and (2) subtracting the tax expense or benefit on "adjusted earnings". Adjusted earnings is defined as the pre-tax income attributable to Cabot Corporation excluding certain items. The tax expense or benefit on adjusted earnings is calculated by applying the operating tax rate, as defined under the section Definition of Terms and Non-GAAP Financial Measures in Results of Operations, to adjusted earnings.

(3) The Company's effective tax rate for fiscal 2017 was a provision of 10% which includes net discrete tax benefits of $25 million, composed of net tax benefits of $16 million associated with the generation of excess foreign tax credits upon repatriation of previously taxed foreign earnings and the accrual of U.S. tax on certain foreign earnings, a net tax benefit of $6 million from a change in valuation allowance on a beginning of year tax balance, net tax benefits of $4 million for various return to provision adjustments related to tax return filings and net tax charges of $1 million related to other miscellaneous tax items. The Company's effective tax rate for fiscal 2016 was a provision of 18%, which included less than $1 million of discrete tax charges, composed of charges of $5 million for valuation allowances on beginning of the year tax balances, partially offset by benefits of $3 million for a currency loss and $1 million each for the renewal of the U.S. research and experimentation credit and net tax settlements. The Company's effective tax rate for fiscal 2015 was a benefit of 12%, which included $13 million of discrete tax benefits composed of $7 million for tax settlements, $4 million for repatriation, and $2 million for the renewal of the U.S. research and experimentation credit. The Company's effective tax rate for fiscal 2014 was a provision of 30% which included net discrete charges of $17 million, composed of a $20 million charge for a valuation allowance, offset by $3 million of net tax benefit primarily related to tax settlements. The Company's effective tax rate for fiscal 2013 was a provision of 28% which included net discrete charges of $3 million, composed of a $13 million foreign currency related charge, offset by $10 million of net tax benefit related to tax settlements, renewal of the U.S. research and experimentation ("R&E") credit, and other miscellaneous tax items in the tax provision.

(4) In fiscal 2017, the Company adopted two new accounting standards that impact the presentation of debt issuance costs and the classification of deferred taxes on the Consolidated Balance Sheets. These new standards were applied retrospectively and fiscal 2016 and 2015 balances have been updated as discussed in Note A of our Notes to the Consolidated Financial Statements ("Note A"). Fiscal 2014 and 2013 have not been updated to reflect these new standards and may not be comparable to the other years presented.

(5) Net debt to capitalization ratio is calculated by dividing total debt (the sum of short-term and long-term debt less cash and cash equivalents) by total capitalization (the sum of Total stockholders' equity plus total debt).

(6) Adjusted return on net assets (“adjusted RONA”) measures how effectively and efficiently the Company uses its operating assets to generate earnings. Return on net assets (“RONA”) and adjusted RONA are not measures of financial performance under accounting principles generally accepted (“GAAP”) in the United States and should not be considered substitutes for measures of performance reported under GAAP. We believe adjusted RONA provides useful supplemental information to our investors because it allows investors to understand the basis on which management evaluates the Company’s operational effectiveness and because it is a performance metric used in our equity incentive compensation program. We calculate adjusted RONA by dividing the most recent twelve months’ adjusted net income (loss) (a non-GAAP numerator) by adjusted net assets (a non-GAAP denominator). In the numerator, we exclude “certain items” net of tax from income (loss) from continuing operations as calculated under GAAP. The items of expense and income we consider “certain items” are described in the discussion of Definition of Terms and Non-GAAP Financial Measures in Results of Operations. The denominator consists of our operating assets, which are: net property, plant and equipment; adjusted net working capital; assets held for rent; and investments in equity affiliates. We calculate the items in adjusted net assets using the most recent five quarters’ average to normalize the impact of large inter-period movements (e.g. working capital movements caused by feedstock price volatility). Our calculation of adjusted RONA is as follows:

	Years Ended September 30				
	2017	2016	2015	2014	2013
	(In millions, except ratios)				
Return on Net Assets					
Income (loss) from continuing operations[a]	$266	$163	$(328)	$216	$161
Net assets[b]	$1,601	$1,372	$1,338	$2,064	$2,083
Return on net assets	17 %	12 %	(25)%	10 %	8 %
Adjusted Return on Net Assets					
Adjusted net income (loss)[a]:					
Income (loss) from continuing operations	$266	$163	$(328)	$216	$161
Less: Total certain items, net of tax[c]	23	(50)	(510)	(28)	(45)
Adjusted net income (loss)	$243	$213	$182	$244	$206
Adjusted net assets[d]:					
Adjusted net working capital[e]	$471	$439	$607	$680	$661
Net property, plant and equipment	1,267	1,322	1,416	1,612	1,567
Assets held for rent	101	92	67	54	49
Equity affiliates	55	55	63	82	117
Adjusted net assets	$1,894	$1,908	$2,153	$2,428	$2,394
Adjusted return on net assets	13 %	11 %	8 %	10 %	9 %

(a) Income (loss) from continuing operations and Adjusted net income (loss) are aggregated four quarter rolling amounts.

(b) Net assets represents Total stockholders' equity.

(c) Total certain items, net of tax is detailed in the table in note (2) above.

(d) Each component of adjusted net assets is calculated by averaging previous five quarter ending balances.

(e) Adjusted net working capital is the average of the previous five quarter ending balances of Accounts receivable plus Inventory less Accounts payable and accruals.

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

The preparation of our financial statements is in conformity with GAAP. This preparation of our financial statements requires management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues, and expenses and related disclosure of contingent assets and liabilities. We consider an accounting estimate to be critical to the financial statements if (i) the estimate is complex in nature or requires a high degree of judgment and (ii) different estimates and assumptions were used, the results could have a material impact on the consolidated financial statements. On an ongoing basis, we evaluate our estimates and the application of our policies. We base our estimates on historical experience, current conditions and on various other assumptions that we believe are 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 policies that we believe are critical to the preparation of the consolidated financial statements are presented below.

Revenue Recognition and Accounts and Notes Receivable

We recognize revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable and collectability is reasonably assured. We generally are able to ensure that products meet customer specifications prior to shipment. If we are unable to determine that the product has met the specified objective criteria prior to shipment or if title has not transferred because of sales terms, the revenue is considered "unearned" and is deferred until the revenue recognition criteria are met.

Shipping and handling charges related to sales transactions are recorded as sales revenue when billed to customers or included in the sales price. Taxes collected on sales to customers are excluded from revenues.

The following table shows the relative size of the revenue recognized in each of our reportable segments:

	Years Ended September 30		
	2017	2016	2015
Reinforcement Materials	53 %	48 %	54 %
Performance Chemicals	35 %	37 %	33 %
Purification Solutions	11 %	13 %	11 %
Specialty Fluids	1 %	2 %	2 %

We derive the substantial majority of our revenues from the sale of products in our Reinforcement Materials, Performance Chemicals, and Purification Solutions segments. Revenue from these products is typically recognized when the product is shipped and title and risk of loss have passed to the customer. We offer cash discounts and volume rebates to certain customers as sales incentives. The discounts and volume rebates are recorded as a reduction in sales at the time revenue is recognized and are estimated based on historical experience and contractual obligations. We periodically review the assumptions underlying estimates of discounts and volume rebates and adjust revenues accordingly.

For major activated carbon injection systems projects in Purification Solutions, revenue is recognized using the percentage-of-completion method.

Revenue in Specialty Fluids arises primarily from the rental of cesium formate. This revenue is recognized throughout the rental period based on the contracted rental terms. Customers are also billed and revenue is recognized, typically at

the end of the job, for cesium formate product that is not returned. We also generate revenues from cesium formate sold outside of a rental process and the sale of fine cesium chemicals in which revenue is recognized upon delivery of the product.

We maintain allowances for doubtful accounts based on an assessment of the collectability of specific customer accounts, the aging of accounts receivable and other economic information on both a historical and prospective basis. Customer account balances are charged against the allowance when it is probable the receivable will not be recovered. There are no material changes in the allowance for any of the years presented. There is no material off-balance sheet credit exposure related to customer receivable balances.

Inventory Valuation

The cost of all carbon black inventories in the U.S. is determined using the last-in, first-out ("LIFO") method. Total U.S. inventories utilizing this cost flow assumption were $28 million at both September 30, 2017 and 2016. These inventories represent 7% and 8% of total worldwide inventories at September 30, 2017 and 2016, respectively. Had we used the first-in, first-out ("FIFO") method instead of the LIFO method for such inventories, the value of those inventories would have been $37 million and $27 million higher as of September 30, 2017 and 2016, respectively. The cost of Specialty Fluids inventories that are classified as assets held for rent is determined using the average cost method. The cost of other U.S. and all non-U.S. inventories is determined using the FIFO method. In periods of rapidly rising or declining raw material costs, the inventory method we employ can have a significant impact on our profitability. Under our current LIFO method, when raw material costs are rising, our most recent higher priced purchases are the first to be charged to Cost of sales. If, however, we were using a FIFO method, our purchases from earlier periods, which were at lower prices, would instead be the first charged to Cost of sales. The opposite result could occur during a period of rapid decline in raw material costs.

At certain times, we may decrease inventory levels to the point where layers of inventory recorded under the LIFO method that were purchased in preceding years are liquidated. The inventory in these layers may be valued at an amount that is different than our current costs. If there is a liquidation of an inventory layer, there may be an impact to our Cost of sales and Net income for that period. If the liquidated inventory is at a cost lower than our current cost, there would be a reduction in our Cost of sales and an increase to our Net income during the period. Conversely, if the liquidated inventory is at a cost higher than our current cost, there will be an increase in our Cost of sales and a reduction to our net income during the period.

We periodically review inventory for both potential obsolescence and potential declines in anticipated selling prices. In this review, we make assumptions about the future demand for and market value of the inventory, and based on these assumptions estimate the amount of any obsolete, unmarketable, slow moving or overvalued inventory. We write down the value of our inventories by an amount equal to the difference between the cost of the inventory and its estimated net realizable value. Historically, such write-downs have not been material. If actual market conditions are less favorable than those projected by management at the time of the assessment, however, additional inventory write-downs may be required, which could reduce our gross profit and our earnings.

Intangible Assets and Goodwill Impairment

We record tangible and intangible assets acquired and liabilities assumed in business combinations under the acquisition method of accounting. Amounts paid for an acquisition are allocated to the assets acquired and liabilities assumed based on their fair values at the date of acquisition. We use assumptions and estimates in determining the fair value of assets acquired and liabilities assumed in a business combination. The determination of the fair value of intangible assets requires the use of significant judgment with regard to assumptions used in the valuation model. We estimate the fair value of identifiable acquisition-related intangible assets principally based on projections of cash flows that will arise from these assets. The projected cash flows are discounted to determine the fair value of the assets at the dates of acquisition.

Definite-lived intangible assets, which are comprised of trademarks, customer relationships and developed technologies, are amortized over their estimated useful lives and are reviewed for impairment when indication of potential impairment exists, such as a significant reduction in cash flows associated with the assets. We recognized an impairment on intangible assets associated with the Purification Solutions business in the third fiscal quarter of 2015, and no events have been subsequently identified that would require an additional impairment evaluation.

Goodwill is comprised of the purchase price of business acquisitions in excess of the fair value assigned to the net tangible and identifiable intangible assets acquired. Goodwill is not amortized, but is reviewed for impairment annually as of May 31, or when events or changes in the business environment indicate that the carrying value of the

reporting unit may exceed its fair value. A reporting unit, for the purpose of the impairment test, is at or below the operating segment level, and constitutes a business for which discrete financial information is available and regularly reviewed by segment management. The reporting units with goodwill balances are Reinforcement Materials, Purification Solutions, and Fumed Metal Oxides. The separate businesses included within Performance Chemicals are considered separate reporting units. As such, the goodwill balance relative to Performance Chemicals is recorded in the Fumed Metal Oxides reporting unit.

For the purpose of the goodwill impairment test, we first assess qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If an initial qualitative assessment identifies that it is more likely than not that the carrying value of a reporting unit exceeds its estimated fair value, an additional quantitative evaluation is performed. Alternatively, we may elect to proceed directly to the quantitative goodwill impairment test. If based on the quantitative evaluation the fair value of the reporting unit is less than its carrying amount, a goodwill impairment loss would result. The goodwill impairment loss would be the amount by which the carrying value of the reporting unit, including goodwill, exceeds its fair value, limited to the total amount of goodwill allocated to that reporting unit. The fair value of a reporting unit is based on discounted estimated future cash flows. The fair value is also benchmarked against a market approach using the guideline public companies method. The assumptions used to estimate fair value include management's best estimates of future growth rates, operating cash flows, capital expenditures and discount rates over an estimate of the remaining operating period at the reporting unit level.

When we performed our annual goodwill impairment test in the third quarter of fiscal 2015, the fair value of the Purification Solutions reporting unit was less than its carrying amount and we recorded impairment charges as a result. A discussion of this assessment and the charges recorded is included below under the heading "Purification Solutions Goodwill and Long-Lived Assets Impairment Charges".

Based on our most recent annual goodwill impairment test performed as of May 31, 2017, the fair values of the Reinforcement Materials and Fumed Metal Oxides reporting units were substantially in excess of their carrying values. The fair value of the Purification Solutions reporting unit exceeded its carrying amount by 13%. The fair value of the Purification Solutions reporting unit includes certain growth assumptions that are primarily dependent on: (1) growth in demand for our existing portfolio of activated carbon products and new products developed for environmental and specialty applications; and (2) stable demand in the mercury removal related portion of the business, which is largely dependent on the amount of coal-based power generation used in the U.S. and the continued regulation of those utilities under the U.S. Mercury and Air Toxics Standards regulation ("MATS"). In April 2017, the EPA indicated that it intends to review the cost benefit analysis previously prepared by the EPA in support of MATS to determine if the EPA should reconsider MATS or some part of it. This continues to be under review by the EPA. Failure to achieve our projected growth in environmental and/or specialty applications and/or actions taken by the EPA related to MATS that decrease demand for our products for mercury removal could have a negative impact on the financial results and fair value of the Purification Solutions reporting unit, which may lead to impairment.

Long-lived Assets Impairment

Our long-lived assets primarily include property, plant and equipment, intangible assets, long-term investments and assets held for rent. The carrying values of long-lived assets are reviewed for impairment whenever events or changes in business circumstances indicate that the carrying amount of an asset may not be recoverable.

To test for impairment of assets, we generally use a probability-weighted estimate of the future undiscounted net cash flows of the assets over their remaining lives to determine if the value of the asset is recoverable. Long-lived assets are grouped with other assets and liabilities at the lowest level for which independent identifiable cash flows are determinable.

An asset impairment is recognized when the carrying value of the asset is not recoverable based on the analysis described above, in which case the asset is written down to its fair value. If the asset does not have a readily determinable market value, a discounted cash flow model may be used to determine the fair value of the asset. In circumstances when an asset does not have separate identifiable cash flows, an impairment charge is recorded when we no longer intend to use the asset.

Purification Solutions Goodwill and Long-Lived Assets Impairment Charges

During fiscal 2015 and as a result of the impairment tests performed on goodwill and long-lived assets of the Purification Solutions reporting unit, we recorded impairment charges and an associated tax benefit in the Consolidated Statements of Operations as follows:

	September 30, 2015 (In millions)
Goodwill impairment charge	$ 352
Long-lived assets impairment charge	210
Benefit for income taxes	(80)
Impairment charges, net of tax	$ 482

In determining the fair value of the Purification Solutions reporting unit, we used an income approach (a discounted cash flow analysis) which incorporated significant estimates and assumptions related to future periods, including the timing of the MATS implementation, the anticipated size of the mercury removal application, and growth rates and pricing assumptions of activated carbon, among others. In addition, an estimate of the reporting unit's weighted average cost of capital ("WACC") was used to discount future estimated cash flows to their present value. The WACC was based upon externally available data considering market participants' cost of equity and debt, optimal capital structure and risk factors specific to the Purification Solutions reporting unit. Based on these estimates and as part of step one of the annual impairment test, we determined that the estimated fair value of the Purification Solutions reporting unit was lower than the reporting unit's carrying value. As such, the reporting unit failed step one of the goodwill impairment test. We then proceeded to step two.

Step two of the goodwill impairment test requires us to perform a theoretical purchase price allocation for the reporting unit to determine the implied fair value of goodwill and to compare the implied fair value of goodwill to the recorded amount of goodwill. The estimate of fair value is complex and requires significant judgment. Accounting guidance provides that we should recognize an estimated impairment charge to the extent that we determine that it is probable that an impairment loss has occurred and such impairment can be reasonably estimated. Based on our best estimate as of June 30, 2015, we recorded a pre-tax goodwill impairment charge of $353 million. We completed the step two analysis in the fourth quarter of fiscal 2015, which resulted in recording a credit of $1 million to the pre-tax goodwill impairment charge.

Based on the same factors leading to the goodwill impairment, we also considered whether the reporting unit's carrying values of definite-lived intangible assets and property, plant and equipment may not be recoverable or whether the carrying value of certain indefinite-lived intangible assets were impaired. We used the income approach to determine the fair value of the indefinite-lived intangible assets, which are the trademarks of Purification Solutions, and determined that the fair value of these intangible assets was lower than their carrying value. As such, an impairment loss was recorded in the amount of $39 million. Subsequent to this impairment analysis, we concluded that such assets no longer had an indefinite life and began amortizing these assets over their estimated useful life. We also performed an impairment analysis to assess if definite-lived intangible assets and property, plant and equipment were recoverable based on the estimated undiscounted cash flows of the reporting unit, and determined that these cash flows were not sufficient to recover the carrying value of the long-lived assets over their remaining useful lives. Accordingly, an impairment charge was recorded based on the lower of the carrying amount or fair value of the long-lived assets. We used the income approach to determine the fair value of the definite-lived intangible assets and a combination of the cost and market approaches to determine the fair value of our property, plant and equipment. We recorded impairment charges of $119 million and $51 million, to our definite-lived intangible assets and property, plant and equipment, respectively, in the quarter ended June 30, 2015. We completed the impairment analysis in the fourth quarter of fiscal 2015 which resulted in increasing the property, plant and equipment impairment charge by $1 million to $52 million. Therefore, for the year ended September 30, 2015, the long-lived assets impairment charge was $210 million. In connection with the long-lived assets impairment charges, we recorded a deferred tax benefit of $80 million to our income tax provision.

Pensions and Other Postretirement Benefits

We maintain both defined benefit and defined contribution plans for our employees. In addition, we provide certain postretirement health care and life insurance benefits for our retired employees. Plan obligations and annual expense calculations are based on a number of key assumptions. The assumptions, which are specific for each of our U.S. and foreign plans, are related to both the assets we hold to fund our plans (where applicable) and the characteristics of the benefits that will ultimately be provided to our employees. The most significant assumptions relative to our plan assets include the anticipated rates of return on these assets. Assumptions relative to our pension obligations are more varied; they include estimated discount rates, rates of compensation increases for employees, and mortality, employee turnover and other related demographic data. Projected health care and life insurance obligations also rely on the above mentioned demographic assumptions and assumptions surrounding health care cost trends. Actual results that

differ from the assumptions are generally accumulated and amortized over future periods and could therefore affect the recognized expense and recorded obligation in such future periods. However, cash flow requirements may be different from the amounts of expense that are recorded in the consolidated financial statements.

Litigation and Contingencies

We are involved in litigation in the ordinary course of business, including personal injury and environmental litigation. After consultation with counsel, as appropriate, we accrue a liability for litigation when it is probable that a liability has been incurred and the amount can be reasonably estimated. The estimated reserves are recorded based on our best estimate of the liability associated with such matters or the low end of the estimated range of liability if we are unable to identify a better estimate within that range. Our best estimate is determined through the evaluation of various information, including claims, settlement offers, demands by government agencies, estimates performed by independent third parties, identification of other responsible parties and an assessment of their ability to contribute, and our prior experience. Litigation is highly uncertain and there is always the possibility of an unusual result in any particular case that may reduce our earnings and cash flows.

The most significant reserves that we have established are for environmental remediation and respirator litigation claims. The amount accrued for environmental matters reflects our assumptions about remediation requirements at the contaminated sites, the nature of the remedies, the outcome of discussions with regulatory agencies and other potentially responsible parties at multi-party sites, and the number and financial viability of other potentially responsible parties. These liabilities can be affected by the availability of new information, changes in the assumptions on which the accruals are based, unanticipated government enforcement action or changes in applicable government laws and regulations, which could result in higher or lower costs.

Our current estimate of the cost of our share of existing and future respirator liability claims is based on facts and circumstances existing at this time. Developments that could affect our estimate include, but are not limited to, (i) significant changes in the number of future claims, (ii) changes in the rate of dismissals without payment of pending claims, (iii) significant changes in the average cost of resolving claims, (iv) significant changes in the legal costs of defending these claims, (v) changes in the nature of claims received, (vi) changes in the law and procedure applicable to these claims, (vii) the financial viability of other parties that contribute to the settlement of respirator claims, (viii) a change in the availability of insurance coverage maintained by certain of the other parties that contribute to the settlement of respirator claims, or the indemnity provided by a former owner of the business, (ix) changes in the allocation of costs among the various parties paying legal and settlement costs and (x) a determination that the assumptions that were used to estimate our share of liability are no longer reasonable. We cannot determine the impact of these potential developments on our current estimate of our share of liability for these existing and future claims. Accordingly, the actual amount of these liabilities for existing and future claims could be different than the reserved amount.

Property, Plant and Equipment

Property, plant and equipment are recorded at cost. Depreciation of property, plant and equipment is calculated using the straight-line method over the estimated useful lives of the related assets. The depreciable lives for buildings, machinery and equipment, and other fixed assets are twenty to twenty-five years, ten to twenty-five years, and three to twenty-five years, respectively. The cost and accumulated depreciation for property, plant and equipment sold, retired, or otherwise disposed of are removed from the Consolidated Balance Sheets and resulting gains or losses are included in earnings in the Consolidated Statements of Operations. Expenditures for repairs and maintenance are charged to expenses as incurred. Expenditures for major renewals and betterments, which significantly extend the useful lives of existing plant and equipment, are capitalized and depreciated.

Income Taxes

Our business operations are global in nature, and we are subject to taxes in numerous jurisdictions. Tax laws and tax rates vary substantially in these jurisdictions and are subject to change based on the political and economic climate in those countries. We file our tax returns in accordance with our interpretations of each jurisdiction's tax laws.

Significant judgment is required in determining our worldwide provision for income taxes and recording the related tax assets and liabilities. In the ordinary course of our business, there are operational decisions, transactions, facts and circumstances, and calculations which make the ultimate tax determination uncertain. Furthermore, our tax positions are periodically subject to challenge by taxing authorities throughout the world. We have recorded reserves for taxes and associated interest and penalties that may become payable in future years as a result of audits by tax authorities. Any significant impact as a result of changes in underlying facts, law, tax rates, tax audit, or review could lead to adjustments to our income tax expense, our effective tax rate, and/or our cash flow.

We record benefits for uncertain tax positions based on an assessment of whether the position is more likely than not to be sustained by the taxing authorities. If this threshold is not met, no tax benefit of the uncertain tax position is recognized. If the threshold is met, the tax benefit that is recognized is the largest amount that is greater than 50% likely of being realized upon ultimate settlement. This analysis presumes the taxing authorities' full knowledge of the

positions taken and all relevant facts, but does not consider the time value of money. We also accrue for interest and penalties on these uncertain tax positions and include such charges in the income tax provision in the Consolidated Statements of Operations.

Additionally, we have established valuation allowances against a variety of deferred tax assets, including net operating loss carry-forwards, foreign tax credits, and other income tax credits. Valuation allowances take into consideration our ability to use these deferred tax assets and reduce the value of such items to the amount that is deemed more likely than not to be recoverable. Our ability to utilize these deferred tax assets is dependent on achieving our forecast of future taxable operating income over an extended period of time. We review our forecast in relation to actual results and expected trends on a quarterly basis. Failure to achieve our operating income targets may change our assessment regarding the recoverability of our net deferred tax assets and such change could result in a valuation allowance being recorded against some or all of our net deferred tax assets. An increase in a valuation allowance would result in additional income tax expense, while a release of valuation allowances in periods when these tax attributes become realizable would reduce our income tax expense.

Significant Accounting Policies

We have other significant accounting policies that are discussed in Note A in Item 8 below. Certain of these policies include the use of estimates, but do not meet the definition of critical because they generally do not require estimates or judgments that are as difficult or subjective to measure. However, these policies are important to an understanding of the consolidated financial statements.

Results of Operations

Cabot is organized into four reportable business segments: Reinforcement Materials, Performance Chemicals, Purification Solutions, and Specialty Fluids. Cabot is also organized for operational purposes into three geographic regions: the Americas; Europe, Middle East and Africa; and Asia Pacific. The discussions of our results of operations for the periods presented reflect these structures.

Our analysis of financial condition and operating results should be read with our consolidated financial statements and accompanying notes. Unless a calendar year is specified, all references to years in this discussion are to our fiscal years ended September 30.

Definition of Terms and Non-GAAP Financial Measures

When discussing our results of operations, we use several terms as described below.

The term “product mix” refers to the mix of types and grades of products sold or the mix of geographic regions where products are sold, and the positive or negative impact this has on the revenue or profitability of the business and/or segment.

The term “LIFO” includes two factors: (i) the impact of current inventory costs being recognized immediately in Cost of sales under a last-in first-out method, compared to the older costs that would have been included in Cost of sales under a first-in first-out method (“Cost of sales impact”); and (ii) the impact of reductions in inventory quantities, causing historical inventory costs to flow through Cost of sales (“liquidation impact”).

Our discussion under the heading “Provision (Benefit) for Income Taxes and Reconciliation of Effective Tax Rate to Operating Tax Rate” includes a discussion of our “effective tax rate” and our “operating tax rate” and includes a reconciliation of the two rates. Our operating tax rate is a non-GAAP financial measure and should not be considered as an alternative to our effective tax rate, the most comparable GAAP financial measure. In calculating our operating tax rate, we exclude discrete tax items, which include: i) unusual or infrequent items such as a significant release or establishment of a valuation allowance, ii) items related to uncertain tax positions such as the tax impact of audit settlements, interest on tax reserves, and the release of tax reserves from the expiration of statutes of limitations, and iii) other discrete tax items, such as the tax impact of legislative changes and, on a quarterly basis, the timing of losses in certain jurisdictions and the cumulative rate adjustment, if applicable. We also exclude the tax impact of certain items, as defined below in the discussion of Total segment EBIT, on both operating income and the tax provision. Our definition of the operating tax rate may not be comparable to the definition used by other companies. Management believes that the non-GAAP financial measure is useful supplemental information because it helps our investors compare our tax rate year to year on a consistent basis and understand what our tax rate on current operations would be without the impact of these items.

Our discussion under the heading “Fiscal 2017 compared to Fiscal 2016 and Fiscal 2016 compared to Fiscal 2015—By Business Segment” includes a discussion of Total segment EBIT, which is a non-GAAP financial measure defined as Income (loss) from continuing operations before income taxes and equity in earnings from affiliated companies less certain items and other unallocated items. Our Chief Operating Decision Maker, who is our President and Chief Executive Officer, uses segment EBIT to evaluate the operating results of each segment and to allocate resources to the segments. We believe Total segment EBIT, which reflects the sum of EBIT from our four reportable segments, provides useful supplemental information for our investors as it is an important indicator of our operational strength and performance, allows investors to see our results through the eyes of management, and provides context for our discussion of individual business segment performance. Total segment EBIT should not be considered an alternative for Income (loss) from continuing operations before income taxes and equity in earnings of affiliated companies, which is the most directly comparable GAAP financial measure. A reconciliation of Total segment EBIT to Income (loss) from continuing operations before income taxes and equity in earnings of affiliated companies is provided under the heading “Fiscal 2017 compared to Fiscal 2016 and Fiscal 2016 compared to Fiscal 2015—By Business Segment”. Investors should consider the limitations associated with this non-GAAP measure, including the potential lack of comparability of this measure from one company to another.

In calculating Total segment EBIT, we exclude from our Income (loss) from continuing operations before income taxes and equity in earnings of affiliated companies (i) items of expense and income that management does not consider representative of our fundamental on-going segment results, which we refer to as “certain items”, and (ii) items that, because they are not controlled by the business segments and primarily benefit corporate objectives, are not allocated to our business segments, such as interest expense and other corporate costs, which include unallocated corporate overhead expenses such as certain corporate salaries and headquarter expenses, plus costs related to special projects and initiatives, which we refer to as “other unallocated items”. Management believes excluding the items identified as certain items facilitates operating performance comparisons from period to period by eliminating differences caused by the existence and timing of certain expense and income items that would not otherwise be apparent on a GAAP basis and also facilitates an evaluation of our operating performance without the impact of these costs or benefits. The items of income and expense that we have excluded from Total segment EBIT, as applicable, but that are included in our GAAP Income (loss) from continuing operations before income taxes and equity in earnings of affiliated companies, as applicable, are described below.

- Global restructuring activities include costs or benefits associated with cost reduction initiatives or plant closures, which primarily relate to (i) employee termination costs, (ii) asset impairment charges associated with restructuring actions, (iii) costs to close facilities, including environmental costs and contract termination penalties and (iv) gains realized on the sale of land or equipment associated with restructured plants or locations.
- Non-recurring gains (losses) on foreign exchange, which primarily relate to the impact of controlled currency devaluations on our net monetary assets denominated in that currency.
- Legal and environmental reserves and matters, which consist of costs or benefits for matters typically related to former businesses or that are otherwise incurred outside of the ordinary course of business.
- Executive transition costs, which include incremental charges, including stock compensation charges, associated with the retirement or termination of employment of senior executives of the Company.
- Asset impairment charges, which primarily include charges associated with an impairment of goodwill or other long-lived assets.
- Acquisition and integration-related charges, which include transaction costs, redundant costs incurred during the period of integration, and costs associated with transitioning certain management and business processes to our processes.
- Employee benefit plan settlement charges, which consist of the costs associated with transferring the obligations and assets held by one of our defined benefit plans to a multi-employer plan.

Drivers of Demand and Key Factors Affecting Profitability

Drivers of demand and key factors affecting our profitability differ by segment. In Reinforcement Materials, longer term demand is driven primarily by: i) the number of vehicle miles driven globally; ii) the number of original equipment and replacement tires produced; and iii) the number of automotive builds. Over the past several years, operating results have been driven by a number of factors, including: i) increases or decreases in our sales volumes driven by changes in production levels for tires or industrial rubber products and the level at which we service that demand; ii) changes in raw material costs and our ability to adjust the sales price for our products commensurate with changes in raw material costs; iii) changes in pricing and product mix, which includes customer pricing as well as the mix of products sold or the region in which they are sold; iv) global and regional capacity utilization for carbon black; v) fixed cost savings achieved through restructuring and other cost saving activities; vi) the growth of our volumes and market position in emerging economies; vii) capacity management and technology investments, including the impact of energy utilization and yield improvement technologies at our manufacturing facilities; and viii) royalties and technology payments related to our patented elastomer composites technology that is used in tire applications.

In Performance Chemicals, longer term demand is driven primarily by the construction and infrastructure, automotive, electronics and consumer products industries. In recent years, operating results in Performance Chemicals have been driven by: i) increases or decreases in sales volumes to the industries previously noted; ii) our ability to deliver differentiated products that drive enhanced performance in customers’ applications; iii) our ability to obtain value pricing for this differentiation; iv) the cost of new capacity; v) changes in selling prices relative to variations in the

cost of raw materials; and vi) the adoption of new products for use in our customers' applications.

In Purification Solutions, longer term demand is driven primarily by the demand for activated carbon based solutions for water, gas and air, pharmaceuticals, food and beverages, catalysts and other chemical applications. Operating results in Purification Solutions have been influenced by: i) changes in our sales volumes in the various applications previously noted; ii) the amount of coal-based power generation utilized in the U.S. and the regulation of those utilities; iii) management of our operations, including inventory levels, and the commensurate costs; iv) changes in price and product mix; and v) industry capacity utilization.

In Specialty Fluids, longer term demand is primarily driven by: i) the level of drilling activity utilizing cesium formate for high pressure oil and gas wells; ii) the petroleum industry's acceptance of cesium formate as a drilling and completion fluid for this application; and iii) continued use of fine cesium chemicals in a variety of applications. Operating results in Specialty Fluids are influenced by the number of drilling projects as well as the size, type and duration of those drilling jobs and demand for fine cesium chemicals.

Overview of Results for Fiscal 2017

During fiscal 2017, Income (loss) from continuing operations before income taxes and equity in earnings of affiliated companies increased compared to fiscal 2016 largely due to strong EBIT growth in the Reinforcement Materials segment. In addition, our results for fiscal 2016 include charges for global restructuring that did not reoccur in fiscal 2017.

Fiscal 2017 compared to Fiscal 2016 and Fiscal 2016 compared to Fiscal 2015—Consolidated

Net Sales and Other Operating Revenues and Gross Profit

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Net sales and other operating revenues	$2,717	$2,411	$2,871
Gross profit	$652	$578	$585

The $306 million increase in net sales from fiscal 2016 to fiscal 2017 was due primarily to a more favorable price and product mix (combined $248 million), an increase in volumes ($77 million), partially offset by an unfavorable impact from foreign currency translation ($24 million). The favorable price and product mix impact was primarily due to higher selling prices during the year from price adjustments to customers for increases in raw materials costs. The $460 million decrease in net sales from fiscal 2015 to fiscal 2016 was due primarily to a less favorable price and product mix (combined $398 million) and an unfavorable impact from foreign currency translation ($63 million). The less favorable price and product mix impact was primarily due to lower selling prices during the year from price adjustments to customers for decreases in raw materials costs.

Gross profit increased by $74 million in fiscal 2017 when compared to fiscal 2016 driven by higher margins and volumes in Reinforcement Materials. Gross profit decreased by $7 million in fiscal 2016 when compared to fiscal 2015 driven by lower unit margins in Reinforcement Materials and Purification Solutions, partially offset by fixed cost savings.

Selling and Administrative Expenses

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Selling and administrative expenses	$260	$275	$282

Selling and administrative expenses decreased by $15 million in fiscal 2017 when compared to fiscal 2016 primarily due to lower spending on global restructuring activities in fiscal 2017 and a charge to the respirator reserve in fiscal 2016 that did not reoccur in fiscal 2017. Selling and administrative expenses decreased by $7 million in fiscal 2016 when compared to fiscal 2015.The decrease was principally driven by restructuring actions taken to reduce fixed costs across the Company, partially offset by an increase in the reserve for respirator liability matters and higher incentive compensation expense.

Research and Technical Expenses

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Research and technical expenses	$56	$ 53	$ 58

Research and technical expenses increased by $3 million in fiscal 2017 when compared to fiscal 2016 due to continued spending on projects across the segments. Research and technical expenses decreased by $5 million in fiscal 2016 when compared to fiscal 2015 primarily due to restructuring actions taken to reduce fixed costs across the Company, partially offset by $5 million of costs associated with these actions.

Purification Solutions Long-Lived Assets and Goodwill Impairment Charges

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Purification Solutions long-lived assets impairment charge	$—	$ —	$210
Purification Solutions goodwill impairment charge	$—	$ —	$352

The Purification Solutions long-lived assets and goodwill impairment charges recorded during fiscal 2015 are described in Note E of our Notes to the Consolidated Financial Statements ("Note E").

Interest and Dividend Income

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Interest and dividend income	$9	$ 5	$ 4

Interest and dividend income increased by $4 million in fiscal 2017 when compared to fiscal 2016 and by $1 million in fiscal 2016 when compared to fiscal 2015 due primarily to interest earned on higher cash balances.

Interest Expense

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Interest expense	$53	$ 54	$ 53

Interest expense decreased by $1 million in fiscal 2017 as compared to fiscal 2016. The decrease was primarily due to lower interest rates on long-term debt partially offset by higher rates on commercial paper borrowings. Interest expense increased by $1 million in fiscal 2016 as compared to fiscal 2015. The increase was primarily due to higher interest rates on commercial paper borrowings.

Other Income (Expense)

Years Ended
September 30

	2017	2016	2015
	(In millions)		
Other income (expense)	$(4)	$ (7)	$(11)

Other income (expense) changed by $3 million during fiscal 2017 as compared to fiscal 2016 due primarily to the impact of foreign currency movements. Other income (expense) changed during fiscal 2016 by $4 million as compared to fiscal 2015 due to a variety of items, none of which were individually material.

Provision (Benefit) for Income Taxes and Reconciliation of Effective Tax Rate to Operating Tax Rate

	Years Ended September 30		
	2017	2016	2015
	(Dollars in millions)		
Provision (benefit) for income taxes	$29	$ 34	$(45)
Effective tax rate	10%	18 %	12 %
Impact of discrete tax items:			
Unusual or infrequent items	6 %	2 %	(2)%
Items related to uncertain tax positions	(1)%	1 %	(2)%
Other discrete tax items	4 %	(2)%	1 %
Impact of certain items	—%	5 %	17 %
Operating tax rate	19%	24 %	26 %

The provision for income taxes was $29 million for fiscal 2017, resulting in an effective tax rate of 10% (refer to the reconciliation of computed tax expense at the federal statutory rate to the Provision (benefit) for income taxes in Note Q of our Notes to the Consolidated Financial Statements (“Note Q”)). This amount included net discrete tax benefits of $25 million and net tax benefits from certain items of $1 million. The operating tax rate for fiscal 2017 was 19%.

The provision for income taxes was $34 million for fiscal 2016, resulting in an effective tax rate of 18% (refer to the reconciliation of computed tax expense at the federal statutory rate to the Provision (benefit) for income taxes in Note Q). This amount included net tax benefits of $31 million, principally comprised of $31 million of tax benefits from certain items, partially offset by a net charge of less than $1 million for discrete tax items. The operating tax rate for fiscal 2016 was 24%. The decrease in the operating tax rate from fiscal 2015 was largely driven by a change in the geographic mix of earnings.

The benefit for income taxes was $45 million for fiscal 2015, resulting in an effective tax rate of 12% (refer to the reconciliation of computed tax expense at the federal statutory rate to the Provision (benefit) for income taxes in Note Q). This amount included net tax benefits of $107 million, principally comprised of an $80 million benefit from the impairment of the Purification Solutions segment, $14 million of benefits from other certain items and $13 million of benefits from discrete tax items. Refer to Note E for details of the impairment. The operating tax rate for fiscal 2015 was 26%.

The nature of the discrete tax items for the periods ended September 30, 2017, 2016, and 2015 were as follows:

(i) Unusual or infrequent items during fiscal 2017 included the net tax impacts from excess foreign tax credits upon repatriation of previously taxed foreign earnings and the accrual of U.S. tax on certain foreign earnings. Unusual or infrequent items during fiscal 2016 and 2015 included the net tax impacts from the renewal of the U.S. Research and Experimentation credit, extraordinary dividends from subsidiaries (fiscal 2016 only), a claim for U.S. tax benefit (fiscal 2016 only), certain dividends from high-tax jurisdictions (fiscal 2015 only), and other non-routine items;

(ii) Items related to uncertain tax positions during fiscal 2017, 2016 and 2015 included net tax impacts from the reversal of accruals for uncertain tax positions due to the expiration of statutes of limitations and settlement of tax audits, the accrual of interest on uncertain tax positions, and the accrual of a prior year uncertain tax position (fiscal 2017 and fiscal 2016), and;

(iii) Other discrete tax items during fiscal 2017, 2016 and 2015 included net tax impacts from various return to provision adjustments related to tax return filings, changes in tax laws, and changes in valuation allowances on beginning of year tax balances (fiscal 2017 and fiscal 2016).

Our anticipated effective and operating tax rates for fiscal 2018 are both 22%. Tax reform legislation has been proposed in the U.S. that would produce significant changes to the U.S. tax code which, if enacted as proposed, could impact these rates. At this point in time, no estimate of the impact can be made.

Cabot files U.S. federal and state and non-U.S. income tax returns in jurisdictions with varying statutes of limitations. Cabot and certain subsidiaries are under audit in a number of jurisdictions. It is possible that some of these audits will be resolved in fiscal 2018 and could impact our anticipated effective tax rate. We have filed our tax returns in accordance with the tax laws in each jurisdiction and maintain tax reserves for uncertain tax positions.

Equity in Earnings of Affiliated Companies and Net Income (Loss) Attributable to Noncontrolling Interest, Net of Tax

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Equity in earnings of affiliated companies, net of tax	$7	$ 3	$ 4
Net income (loss) attributable to noncontrolling interests, net of tax	$25	$ 15	$ 8

Equity in earnings of affiliated companies, net of tax, increased by $4 million in fiscal 2017 compared to fiscal 2016 and decreased by $1 million in fiscal 2016 compared to fiscal 2015. The changes in both periods were primarily due to changes in earnings from our Venezuelan equity affiliate.

Net income (loss) attributable to noncontrolling interests, net of tax, increased by $10 million in fiscal 2017 compared to fiscal 2016 due to the higher profitability of our joint ventures in China and the Czech Republic and increased by $7 million in fiscal 2016 compared to fiscal 2015 due to the higher profitability of our joint venture in Malaysia.

Net Income (Loss) Attributable to Cabot Corporation

In fiscal 2017, we reported net income of $241 million ($3.80 per diluted common share). In fiscal 2016, we reported net income of $149 million ($2.36 per diluted common share). In fiscal 2015, we reported a net loss of $334 million ($5.27 per diluted common share). The loss was driven by the Purification Solutions long-lived asset and goodwill impairment charges more fully discussed in Note E.

Fiscal 2017 compared to Fiscal 2016 and Fiscal 2016 compared to Fiscal 2015—By Business Segment

Income (loss) from continuing operations before income taxes and equity in earnings of affiliated companies, certain items, other unallocated items and Total segment EBIT for fiscal 2017, 2016 and 2015 are set forth in the table below. The details of certain items and other unallocated items are shown below and in Note S.

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Income (loss) from continuing operations before income taxes and equity in earnings of affiliated companies	$288	$194	$(377)
Less: Certain items	(3)	(81)	(617)
Less: Other unallocated items	(118)	(95)	(92)
Total segment EBIT	$409	$370	$332

In fiscal 2017, Income (loss) from continuing operations before income taxes and equity in earnings of affiliated companies increased by $94 million and Total segment EBIT increased by $39 million when compared to fiscal 2016. The increases were primarily driven by higher volumes across all segments except Specialty Fluids ($43 million), higher unit margins in Reinforcement Materials ($62 million), and a favorable impact from changing inventory levels ($23 million), partially offset by higher fixed costs ($49 million), and lower unit margins in Performance Chemicals ($33 million). In addition, Income (loss) from continuing operations before income taxes and equity in earnings of affiliated companies increased due to lower spending on global restructuring activities ($44 million) and lower non-recurring losses on foreign exchange ($11 million) compared to fiscal 2016 and lower legal and environmental matters and reserves ($18 million) which was primarily driven by a charge to the respirator reserve in fiscal 2016 that did not reoccur in fiscal 2017.

In fiscal 2016, Income (loss) from continuing operations before income taxes and equity in earnings of affiliated companies increased by $571 million and Total segment EBIT increased by $38 million when compared to fiscal 2015. The increases were driven by lower fixed costs ($64 million) and the favorable impact of foreign currency translation ($10 million), partially offset by the unfavorable impact from reducing inventory levels ($36 million). In addition, Income (loss) from continuing operations before income taxes and equity in earnings of affiliated companies increased primarily due to the impairment of goodwill and long-lived assets of Purification Solutions ($562 million) and employee benefit plan settlement and other charges ($21 million) in fiscal 2015 that did not reoccur in fiscal 2016. These benefits were partially offset by higher spending on global restructuring activities ($26 million), legal and environmental matters and reserves ($17 million) which was primarily driven by a charge to the respirator reserve and non-recurring losses on foreign exchange ($9 million) compared to fiscal 2015.

Certain Items:

Details of the certain items for fiscal 2017, 2016, and 2015 are as follows:

	Years Ended September 30		
	2017	2016	2015

	(In millions)		
Global restructuring activities (Note N)	$(3)	$(47)	$(21)
Legal and environmental matters and reserves	1	(17)	—
Acquisition and integration-related charges	—	—	(5)
Employee benefit plan settlement and other charges (Note L)	—	—	(21)
Impairment of goodwill and long-lived assets of Purification Solutions (Note E)	—	—	(562)
Non-recurring gain (loss) on foreign exchange	—	(11)	(2)
Inventory adjustment (Note C)	—	—	(6)
Executive transition costs	—	(6)	—
Other certain items	(1)	—	—
Total certain items, pre-tax	(3)	(81)	(617)
Tax-related certain items:			
Tax impact of certain items	1	31	94
Discrete tax items	25	—	13
Total tax-related certain items	26	31	107
Total certain items, net of tax	$23	$(50)	$(510)

An explanation of these items of expense and income is included in our discussion under the heading "Definition of Terms and Non-GAAP Financial Measures". Additional information concerning several of these items is included in our Notes to the Consolidated Financial Statements as follows: Impairment of goodwill and long-lived assets (Note E); Global restructuring activities (Note N); Employee benefit plan settlements (Note L); and Inventory reserve adjustment (Note C). Acquisition and integration-related charges include legal and professional fees, the incremental value of inventory as a result of purchase accounting adjustments and other expenses related to the completion of the acquisitions and the integrations of Purification Solutions and NHUMO. Tax-related certain items include discrete tax items, the nature of which are discussed under the heading "Provision (Benefit) for Income Taxes and Reconciliation of Effective Tax Rate to Operating Tax Rate", and the tax impact of certain foreign exchange losses.

The tax impact of certain items is determined by (1) starting with the current and deferred income tax expense or benefit, included in Net income (loss) attributable to Cabot Corporation, and (2) subtracting the tax expense or benefit on "adjusted earnings". Adjusted earnings is defined as the pre-tax income attributable to Cabot Corporation excluding certain items. The tax expense or benefit on adjusted earnings is calculated by applying the operating tax rate, as defined under the section Definition of Terms and Non-GAAP Financial Measures, to adjusted earnings.

Other Unallocated Items:

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Interest expense	$(53)	$(54)	$(53)
Unallocated corporate costs	(50)	(45)	(46)
General unallocated income (expense)	(8)	7	11
Less: Equity in earnings of affiliated companies, net of tax	7	3	4
Total other unallocated items	$(118)	$(95)	$(92)

A discussion of items that we refer to as "other unallocated items" can be found under the heading "Definition of Terms and Non-GAAP Financial Measures". The balances of unallocated corporate costs are primarily comprised of expenditures related to managing a public company that are not allocated to the segments and corporate business development costs related to new technology efforts. The balances of General unallocated income (expense) consists of gains (losses) arising from foreign currency transactions, net of other foreign currency risk management activities, the impact of accounting for certain inventory on a LIFO basis, the profit or loss related to the corporate adjustment for unearned revenue, and the impact of including the full operating results of an equity affiliate in Purification Solutions segment EBIT.

In fiscal 2017, Total other unallocated items changed by $23 million when compared to fiscal 2016, primarily driven by a change of $15 million of General unallocated income (expense). This was primarily due to the cost of sales impact of LIFO accounting from changes in carbon black raw material costs that resulted in an unfavorable comparison ($14 million). In addition, Unallocated corporate costs changed by $5 million primarily associated with higher expenses related to incentive compensation.

In fiscal 2016, Total other unallocated items changed by $3 million when compared to fiscal 2015, primarily driven by a change of $4 million in General unallocated income (expense). This was due to the cost of sales impact of LIFO accounting from changes in carbon black raw material costs that resulted in an unfavorable comparison ($19 million), partially offset by the favorable impact of changes in foreign currency movements ($13 million).

Reinforcement Materials

Sales and EBIT for Reinforcement Materials for fiscal 2017, 2016 and 2015 are as follows:

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Reinforcement Materials Sales	$1,381	$1,108	$1,507
Reinforcement Materials EBIT	$193	$137	$143

In fiscal 2017, sales in Reinforcement Materials increased by $273 million when compared to fiscal 2016. The increase was principally driven by a more favorable price and product mix (combined $260 million) and higher volumes ($27 million), partially offset by the unfavorable comparison of foreign currency translation ($12 million). The more favorable price and product mix was primarily driven by benefits from contract gains and spot pricing in addition to a more favorable regional mix. Higher volumes were driven by an increase in rubber blacks volumes from higher contractual volumes in the Americas.

In fiscal 2016, sales in Reinforcement Materials decreased by $399 million when compared to fiscal 2015. The decrease was principally driven by less favorable price and product mix (combined $335 million), lower volumes ($27 million) and an unfavorable comparison from foreign currency translation ($37 million). The less favorable price and product mix was primarily due to lower selling prices from price adjustments to customers for decreases in raw material costs. Lower volumes were driven by lower demand in South America and Asia due to a challenging macro-economic environment and the closure of our Merak, Indonesia manufacturing plant.

In fiscal 2017, Reinforcement Materials EBIT increased by $56 million when compared to fiscal 2016 driven principally by higher rubber blacks unit margins ($62 million), higher rubber blacks volumes ($13 million) and the favorable impact from a change in inventory levels ($6 million), partially offset by higher fixed costs ($21 million) and an unfavorable comparison of foreign currency translation ($2 million). The favorable rubber blacks unit margins were due to benefits from contract pricing gains and spot pricing as well as a more favorable regional mix, with higher sales in North America and lower sales in Asia. Higher rubber blacks fixed costs were primarily associated with the timing of required maintenance costs.

In fiscal 2016, Reinforcement Materials EBIT decreased by $6 million when compared to fiscal 2015 driven principally by lower unit margins ($23 million) and lower volumes ($10 million). The decrease was partially offset by lower fixed costs ($19 million) and a favorable comparison from foreign currency translation ($9 million). Lower unit margins were driven primarily by lower year over year contract pricing in the first quarter of fiscal 2016, increased competition in Asia, unfavorable feedstock-related effects, and lower benefits generated from our energy efficiency investments as a result of lower energy prices. The favorable foreign currency impact was mainly due to the translation of our local currency fixed costs in South America to U.S. dollars. Lower fixed costs were due to cost reductions as a result of restructuring actions and reduced maintenance costs.

Performance Chemicals

Sales and EBIT for Performance Chemicals for fiscal 2017, 2016 and 2015 are as follows:

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Specialty Carbons and Formulations Sales	$623	$578	$630
Metal Oxides Sales	285	287	297
Performance Chemicals Sales	$908	$865	$927
Performance Chemicals EBIT	$201	$225	$178

In fiscal 2017, sales in Performance Chemicals increased by $43 million when compared to fiscal 2016 primarily due to an increase in sales from Specialty Carbons and Formulations ($45 million). The increase in sales from Specialty Carbons and Formulations was due to higher volumes ($31 million) and a favorable price and product mix (combined $18 million), partially offset by an unfavorable comparison of foreign currency translation ($5 million). The higher volumes were mainly driven by growth from sales in Asia and North America. In addition, overall product mix was more favorable in all regions driven by growth in automotive, coatings, and energy materials.

In fiscal 2016, sales in Performance Chemicals decreased by $62 million when compared to fiscal 2015 due to a less favorable price and product mix (combined $51 million) and the unfavorable comparison from foreign currency translation ($21 million), partially offset by higher volumes ($10 million). The change in price and product mix was mainly driven by price adjustments to customers for decreases in raw material costs.

In fiscal 2017, EBIT in Performance Chemicals decreased by $24 million when compared to fiscal 2016 due to lower unit margins ($33 million), higher fixed costs ($23 million) and the unfavorable impact of foreign currency translation ($2 million). The decrease in unit margins was driven by higher raw material costs. Higher fixed costs were a result of increased maintenance, higher activity levels and growth investments. These decreases in EBIT were partially offset by higher volumes ($32 million) and the favorable impact from changing inventory levels ($2 million). The increase in volumes were primarily driven by growth across all Performance Chemicals segments during fiscal 2017 with increases in volumes from Asia, North America and Europe.

In fiscal 2016, EBIT in Performance Chemicals was $47 million higher when compared to fiscal 2015 primarily due to higher unit margins ($34 million) and lower fixed costs ($22 million), partially offset by the unfavorable impact of reducing inventory levels ($6 million) and the unfavorable impact of foreign currency translation ($2 million). Unit margins improved primarily due to lower raw material costs. Lower fixed costs were primarily due to cost reductions as a result of restructuring actions taken earlier in the fiscal year.

Purification Solutions

Sales and EBIT for Purification Solutions for fiscal 2017, 2016 and 2015 are as follows:

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Purification Solutions Sales	$281	$290	$296
Purification Solutions EBIT	$6	$(5)	$5

Sales in Purification Solutions decreased by $9 million in fiscal 2017 when compared to fiscal 2016 due to a less favorable price and product mix (combined $16 million) and an unfavorable comparison of foreign currency translation ($1 million), partially offset by higher volumes ($8 million). The less favorable price and product mix was primarily due to price competition in North America for powder activated carbon and weaker mix in specialty applications. The increase in volumes during fiscal 2017 was primarily due to volume growth within mercury removal and specialty applications.

Sales in Purification Solutions decreased by $6 million in fiscal 2016 when compared to fiscal 2015 primarily due to a less favorable price and product mix (combined $10 million) and the unfavorable impact of foreign currency translation ($6 million), partially offset by an increase in volumes ($10 million). The less favorable price and product mix was due to competitive factors in certain gas and air and water applications as well as increased demand for lower priced products. Higher volumes were driven by higher demand for activated carbon in gas and air applications as the MATS regulation took full effect in April 2016.

EBIT in Purification Solutions increased by $11 million in fiscal 2017 when compared to fiscal 2016 driven by the favorable impact of changing inventory levels ($15 million), higher volumes ($5 million) and the favorable comparison of foreign currency translation ($2 million). These improvements were partially offset by lower unit margins ($5 million) and higher fixed costs ($6 million). Higher volumes were due to sales to mercury removal and specialty customers. Higher fixed costs were a result of a plant disruption during the third quarter of fiscal 2017 and investment in research and development, marketing and sales resources as we focus on growing the specialty portion of the portfolio.

EBIT in Purification Solutions decreased by $10 million in fiscal 2016 when compared to fiscal 2015 driven by the unfavorable impact from reducing inventory levels ($29 million) and lower unit margins ($12 million) due to a less favorable price and product mix and higher raw material costs, partially offset by lower fixed costs due to cost reduction efforts ($19 million), higher volumes ($9 million), and the favorable impact of foreign currency exchange ($3 million).

Specialty Fluids

Sales and EBIT for Specialty Fluids for fiscal 2017, 2016 and 2015 are as follows:

Years Ended September 30		
2017	2016	2015

	(In millions)		
Specialty Fluids Sales	$41	$ 47	$ 42
Specialty Fluids EBIT	$9	$ 13	$ 6

Sales in Specialty Fluids decreased by $6 million in fiscal 2017 when compared to fiscal 2016. The decrease was primarily due to lower volumes ($9 million) from lower project activity levels that resulted in lower rental and sales volumes for our drilling fluids. The decrease in volumes was partially offset by a more favorable price and product mix (combined $2 million).

Sales in Specialty Fluids increased by $5 million in fiscal 2016 when compared to fiscal 2015. The increase was primarily due to higher volumes ($5 million). The increase in volumes was driven by a higher level of project activity that resulted in higher rental and sales volumes for our drilling fluids in both the North Sea and Asia.

EBIT in Specialty Fluids decreased by $4 million in fiscal 2017 when compared to fiscal 2016. The decrease was primarily due to lower volumes ($6 million), which was partially offset by an improved price and product mix ($2 million).

EBIT in Specialty Fluids increased by $7 million in fiscal 2016 when compared to fiscal 2015. The increase is primarily due to higher volumes ($4 million) and lower fixed costs ($4 million), partially offset by a less favorable price and product mix ($1 million).

Outlook

Looking forward to 2018, we remain focused on our strategy of investing for growth in the core, driving application innovation with our customers, and generating strong cash flows through efficiency and optimization. The global market for Reinforcement Materials generally remains favorable. We continue to see strength in Europe driven by increasing demand and high utilization rates. In China, both demand and pricing remain firm, and the long-term fundamentals for tire growth in North America remain solid with growth rates expected to be in line with gross domestic product ("GDP"). In terms of emerging markets, South America continues to gain momentum across all product categories as the local economies slowly recover. In Performance Chemicals, the end markets remain robust with growth rates in excess of global GDP and we continue to develop the foundation for future growth in Fumed Metal Oxides with our announced investments in Wuhai, China and Carrollton, Kentucky and in Specialty Compounds with our acquisition of Tech Blend. In addition, we have numerous expansion and debottleneck projects underway around the world to support capacity growth for our carbon black businesses. In Purification Solutions, we anticipate continued momentum in specialty applications, while competition will remain intense in our mercury removal business in North America. The Specialty Fluids segment continues to make progress in the expansion of the customer base in the Asia, Middle East and Africa region. In addition, in 2018, we will continue to invest in new product and process technology, seek to capture the operating leverage from improving utilizations, and pursue growth investments including acquisitions in our existing businesses.

Cash Flows and Liquidity

Overview

Our liquidity position, as measured by cash and cash equivalents plus borrowing availability, increased by $80 million during fiscal 2017. The increase was attributable to an increase in our cash balances due to strong cash flow from operations. As of September 30, 2017, we had cash and cash equivalents of $280 million and borrowing availability under our revolving credit agreement of $1 billion. Our revolving credit agreement, which was amended in October 2017 to extend the maturity to October 2022, supports our commercial paper program and may be used for working capital, letters of credit and other general corporate purposes.

At September 30, 2017, we were in compliance with all applicable covenants under our revolving credit facility including the total consolidated debt to consolidated EBITDA (earnings before interest, taxes, depreciation and amortization) covenant.

A significant portion of our business occurs outside the U.S. and our cash generation does not always align geographically with our cash needs. The vast majority of our cash and cash equivalent holdings tend to be held outside the U.S. Cash held by foreign subsidiaries is generally used to finance the subsidiaries' operational activities and future investments. We use commercial paper throughout the year to manage short term U.S. cash needs. The commercial paper balance is generally paid down at quarter-end using cash derived from customer collections, settlement of intercompany balances and short-term intercompany loans. In the unusual event that additional funds are needed in the U.S., we have the ability to repatriate additional funds. Such repatriation could result in an adjustment to our tax liability.

We generally manage our cash and debt on a global basis to provide for working capital requirements as needed by region or site. Cash and debt are generally denominated in the local currency of the subsidiary holding the assets or liabilities, except where there are operational cash flow reasons to hold non-functional currency or debt.

We anticipate sufficient liquidity from (i) cash on hand; (ii) cash flows from operating activities; and (iii) cash available from our revolving credit agreement and our commercial paper program to meet our operational and capital investment needs and financial obligations for the foreseeable future. The liquidity we derive from cash flows from operations is, to a large degree, predicated on our ability to collect our receivables in a timely manner, the cost of our raw materials, and our ability to manage inventory levels.

We issued $250 million of 2.55% fixed rate debt in fiscal 2012 that matures on January 15, 2018. We intend to refinance this debt, and are evaluating all of our refinancing options, including a public bond, commercial paper, and various forms of bank debt.

Our Consolidated Statements of Cash Flows have been presented to include discontinued operations with continuing operations. Therefore, unless noted otherwise, the following discussion of our cash flows and liquidity position include both continuing and discontinued operations.

The following discussion of the changes in our cash balance refers to the various sections of our Consolidated Statements of Cash Flows.

Cash Flows from Operating Activities

Cash provided by operating activities, which consists of net income adjusted for the various non-cash items included in income, changes in working capital and changes in certain other balance sheet accounts, totaled $340 million in fiscal 2017. Operating activities provided $392 million and $499 million in fiscal 2016 and 2015, respectively.

Cash provided by operating activities in fiscal 2017 was driven primarily by net income of $266 million plus $155 million of non-cash depreciation and amortization. In addition, there was an increase in accounts payable and accruals and dividends from equity affiliates. These sources of cash were partially offset by increases in accounts receivable and inventories due to higher sales and raw material costs.

Cash provided by operating activities in fiscal 2016 was driven primarily by net income of $164 million plus $161 million of non-cash depreciation and amortization. In addition, there was a net decrease in accounts receivable and inventories largely driven by lower raw material costs and associated price reductions. These sources of cash were partially offset by a decrease in accounts payable.

Cash provided by operating activities in fiscal 2015 was driven primarily by our non-cash charges for depreciation and amortization and asset impairments, which more than offset our net loss for the period. In addition, there was a net decrease in accounts receivable and inventories largely driven by lower raw material costs and associated price reductions.

In addition to the factors noted above, the following other elements of operations have a bearing on operating cash flows:

Restructurings — As of September 30, 2017, we had $3 million of total restructuring costs in accrued expenses in the Consolidated Balance Sheets related to our global restructuring activities. We made cash payments of $6 million during fiscal 2017. In fiscal 2018 and thereafter, we expect to make cash payments totaling approximately $6 million related to these restructuring plans.

We may receive cash in the future from the sale of certain assets and land relating to restructured sites, which is not included in these amounts.

Environmental Reserves and Litigation Matters—As of September 30, 2017, we had a $12 million reserve for environmental remediation costs at various sites. These sites are primarily associated with businesses divested in prior years. Additionally, as of September 30, 2017, we had a $18 million reserve for respirator claims. Expenditures for each of these reserves will be incurred over many years. We also have other litigation costs arising in the ordinary course of business.

Cash Flows from Investing Activities

In fiscal 2017, capital expenditures were $147 million. Capital expenditures were primarily related to sustaining and compliance capital projects at our operating facilities. In fiscal 2016, capital expenditures were $112 million. Major capital project expenditures were related to sustaining and compliance activities. In fiscal 2015, capital expenditures were $141 million. Major capital project expenditures were related to the completion of our lignite mine development project in the Purification Solutions segment, mine development activities for our Specialty Fluids segment, and sustaining and compliance capital projects at our operating facilities.

Capital expenditures for fiscal 2018 are expected to be between $225 million and $250 million. Our planned capital spending program for fiscal 2018 is primarily for sustaining, compliance and improvement capital projects at our operating facilities as well as expansion capital expenditures, primarily for the construction of our fumed silica manufacturing plants in Carrollton, Kentucky and Wuhai, China.

Cash Flows from Financing Activities

Financing activities consumed $125 million of cash in fiscal 2017 compared to $184 million in fiscal 2016 and $256 million in fiscal 2015. The use of cash in fiscal 2017 was primarily related to cash dividends paid to common stockholders of $77 million, purchases of common stock of $61 million, and cash dividends paid to noncontrolling

interests of $14 million. Partially offsetting these uses of cash was $21 million of proceeds from the exercise of stock options granted under our incentive compensation plans.

The use of cash in fiscal 2016 was primarily related to cash dividends paid to common stockholders of $65 million, purchases of common stock of $45 million, cash dividends paid to noncontrolling interests of $16 million, and a decrease in our overall debt balance of $68 million. The decrease in debt was driven primarily by our redemption of our $300 million 5% fixed rate debt and a reduction in our outstanding commercial paper, partially offset by the issuance of $250 million in registered notes with a coupon of 3.4% that mature on September 15, 2026.

At September 30, 2017, we had $1 billion of availability under our credit agreement. Although generally we have an outstanding commercial paper balance during the quarter, we pay down the balance at quarter-end through cash receipts from collections, settlement of intercompany balances and short-term intercompany loans. As such, there was no commercial paper outstanding at September 30, 2017 or 2016.

Our long-term total debt, of which $256 million is current, matures at various times as presented in Note H of our Notes to the Consolidated Financial Statements. The weighted-average interest rate on our fixed rate long-term debt was 3.54% as of September 30, 2017.

Share Repurchases

During fiscal 2017, 2016, and 2015, we repurchased approximately 1.1 million, 0.8 million, and 2.3 million shares of our common stock on the open market for an aggregate purchase price of $59 million, $39 million, and $96 million, respectively. As of September 30, 2017, we had approximately 1.7 million shares available for repurchase under the Board of Directors' share repurchase authorization.

Dividend Payments

In fiscal 2017, 2016 and 2015, we paid cash dividends on our common stock of $1.23, $1.04 and $0.88 per share, respectively. These cash dividend payments totaled $77 million in fiscal 2017, $65 million in fiscal 2016, and $56 million in fiscal 2015.

Employee Benefit Plans

As of September 30, 2017, we had a consolidated pension obligation, net of the fair value of plan assets, of $115 million, comprised of $62 million for pension benefit plan liabilities and $53 million for postretirement benefit plan liabilities.

The $62 million of unfunded pension benefit plan liabilities is derived as follows:

	U.S.	Foreign	Total
	(In millions)		
Fair Value of Plan Assets	$156	$ 318	$474
Benefit Obligation	160	376	536
Unfunded Status	$(4)	$ (58)	$(62)

In fiscal 2017, we made cash contributions totaling approximately $9 million to our foreign pension benefit plans. In fiscal 2018, we expect to make cash contributions of $8 million to our foreign pension plans.

The $53 million of unfunded postretirement benefit plan liabilities is comprised of $33 million for our U.S. and $20 million for our foreign postretirement benefit plans. These postretirement benefit plans provide certain health care and life insurance benefits for retired employees. Typical of such plans, our postretirement plans are unfunded and, therefore, have no plan assets. We fund these plans as claims or insurance premiums come due. In fiscal 2017, we paid postretirement benefits of $3 million under our U.S. postretirement plans and less than $1 million under our foreign postretirement plans. For fiscal 2018, our benefit payments for our postretirement plans are expected to be immaterial.

Off-Balance Sheet Arrangements

We had no material transactions that meet the definition of an off-balance sheet arrangement.

Contractual Obligations

The following table sets forth our long-term contractual obligations.

Payments Due by Fiscal Year

	2018	2019	2020	2021	2022	Thereafter	Total
	(In millions)						
Purchase Commitments	$304	$298	$193	$146	$134	$ 1,858	$2,933
Long-term debt	255	30	—	—	365	258	908
Capital lease obligations[1]	3	2	2	2	2	9	20
Fixed interest on long-term debt	28	24	23	23	20	37	155
Operating leases	25	16	10	9	8	68	136
Total	$615	$370	$228	$180	$529	$ 2,230	$4,152

[1] Capital lease obligations include interest.

Purchase Commitments

We have entered into long-term, volume-based purchase agreements primarily for the purchase of raw materials and natural gas with various key suppliers in Reinforcement Materials, Performance Chemicals, and Purification Solutions. Under certain of these agreements the quantity of material being purchased is fixed, but the price we pay changes as market prices change. For purposes of the table above, current purchase prices have been used to quantify total commitments.

Capital Leases

We have capital lease obligations primarily for certain equipment and buildings. These obligations are payable over the next 16 years.

Operating Leases

We have operating leases primarily comprised of leases for transportation vehicles, warehouse facilities, office space, and machinery and equipment.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to changes in interest rates and foreign currency exchange rates because we finance certain operations through long- and short-term borrowings and denominate our transactions in a variety of foreign currencies. Changes in these rates may have an impact on future cash flows and earnings. We manage these risks through normal operating and financing activities and, when deemed appropriate, through the use of derivative financial instruments.

We have policies governing our use of derivative instruments, and we do not enter into financial instruments for trading or speculative purposes.

By using derivative instruments, we are subject to credit and market risk. The derivative instruments are booked in our balance sheet at fair value and reflect the asset or liability position as of September 30, 2017. If a counterparty fails to fulfill its performance obligations under a derivative contract, our exposure will equal the fair value of the derivative. Generally, when the fair value of a derivative contract is positive, the counterparty owes Cabot, thus creating a payment risk for Cabot. We minimize counterparty credit or repayment risk by entering into these transactions with major financial institutions of investment grade credit rating. Our exposure to market risk is not hedged in a manner that completely eliminates the effects of changing market conditions on earnings or cash flow.

Foreign Currency Risk

Our international operations are subject to certain risks, including currency exchange rate fluctuations and government actions. In the fourth quarter of fiscal 2016, we entered into cross-currency swaps designated as hedges of our net investments in certain Euro denominated subsidiaries. The following table summarizes the principal terms of our cross-currency swaps, including the aggregate notional amount of the swaps, the interest rate payment we receive from and pay to our swap counterparties, the term and fair value at September 30, 2017.

Description	Notional Amount	Interest Rate Received	Interest Rate Paid	Fiscal Year Entered Into	Maturity Year	Fair Value at September 30, 2017
Cross-Currency Swaps	USD 250 million swapped to EUR 223 million	3.40%	1.94%	2016	2026	$(13) million

We also have foreign currency exposures arising from the denomination of monetary assets and liabilities in foreign currencies other than the functional currency of a given subsidiary as well as the risk that currency fluctuations could affect the dollar value of future cash flows generated in foreign currencies. Accordingly, we use short-term forward contracts to minimize the exposure to foreign currency risk. At September 30, 2017, we had $5 million in net notional foreign currency contracts, which were denominated in Indonesian rupiah and Czech koruna. These forwards had a fair value of less than $1 million as of September 30, 2017.

In certain situations where we have forecasted purchases under a long-term commitment or forecasted sales denominated in a foreign currency we may enter into appropriate financial instruments in accordance with our risk management policy to hedge future cash flow exposures.

The primary currencies for which we have exchange rate exposure are the Euro, Japanese Yen, Brazilian Real, and Argentine Peso. In fiscal year 2017, foreign currency translations in the aggregate decreased our business segment EBIT by $2 million, the majority of which affected the results of the Reinforcement Materials and Performance Chemicals segments, partially offset by a favorable impact to the Purification Solutions segment. The overall unfavorable impact was largely from the translation of local currency denominated operating costs to U.S. dollars in China and Brazil, where the average exchange rates increased in value versus the U.S. dollar during fiscal 2017. In addition, we recognized a $4 million expense in Other income (expense) in fiscal 2017 from the revaluation of monetary assets and liabilities from transactional currencies to functional currency, largely attributable to changes in the value of the Argentine Peso and the Colombian Peso during the year.

Item 8. Financial Statements and Supplementary Data

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CABOT CORPORATION

CONSOLIDATED STATEMENTS OF OPERATIONS

	Years Ended September 30		
	2017	2016	2015
	(In millions, except per share amounts)		
Net sales and other operating revenues	$2,717	$2,411	$2,871
Cost of sales	2,065	1,833	2,286
Gross profit	652	578	585
Selling and administrative expenses	260	275	282
Research and technical expenses	56	53	58
Purification Solutions long-lived assets impairment charge (Note E)	—	—	210
Purification Solutions goodwill impairment charge (Note E)	—	—	352
Income (loss) from operations	336	250	(317)
Interest and dividend income	9	5	4
Interest expense	(53)	(54)	(53)
Other income (expense)	(4)	(7)	(11)
Income (loss) from continuing operations before income taxes and equity in earnings of affiliated companies	288	194	(377)
(Provision) benefit for income taxes	(29)	(34)	45
Equity in earnings of affiliated companies, net of tax	7	3	4
Income (loss) from continuing operations	266	163	(328)
Income (loss) from discontinued operations, net of tax of $—, $1 and $—	—	1	2
Net income (loss)	266	164	(326)
Net income (loss) attributable to noncontrolling interests, net of tax of $6, $4 and $5	25	15	8
Net income (loss) attributable to Cabot Corporation	$241	$149	$(334)
Weighted-average common shares outstanding:			
Basic	62.3	62.4	63.4
Diluted	62.7	62.9	63.4
Earnings per common share:			
Basic:			
Income (loss) from continuing operations attributable to Cabot Corporation	$3.83	$2.36	$(5.29)
Income (loss) from discontinued operations	—	0.02	0.02
Net income (loss) attributable to Cabot Corporation	$3.83	$2.38	$(5.27)
Diluted:			
Income (loss) from continuing operations attributable to Cabot Corporation	$3.80	$2.34	$(5.29)
Income (loss) from discontinued operations	—	0.02	0.02

Net income (loss) attributable to Cabot Corporation	$3.80	$2.36	$(5.27)
Dividends per common share	$1.23	$1.04	$0.88

The accompanying notes are an integral part of these consolidated financial statements.

CABOT CORPORATION

CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Net income (loss)	$ 266	$ 164	$ (326)
Other comprehensive income (loss), net of tax			
Foreign currency translation adjustment, net of tax (provision) benefit of $4, $—, $3	25	7	(270)
Pension and other postretirement benefit liability adjustments			
Pension and other postretirement benefit liability adjustments arising during the period, net of tax	41	(38)	28
Amortization of net loss and prior service credit included in net periodic pension cost, net of tax	2	—	3
Other comprehensive income (loss)	68	(31)	(239)
Comprehensive income (loss)	334	133	(565)
Net income (loss) attributable to noncontrolling interests, net of tax	25	15	8
Foreign currency translation adjustment attributable to noncontrolling interests, net of tax	2	(5)	(4)

Comprehensive income (loss) attributable to noncontrolling interests		27		10		4	
Comprehensive income (loss) attributable to Cabot Corporation	$	307	$	123	$	(569	)

The accompanying notes are an integral part of these consolidated financial statements.

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CABOT CORPORATION

CONSOLIDATED BALANCE SHEETS

ASSETS

	September 30	
	2017	2016
	(In millions, except share and per share amounts)	
Current assets:		
Cash and cash equivalents	$280	$200
Accounts and notes receivable, net of reserve for doubtful accounts of $9 and $8	527	456
Inventories	396	342
Prepaid expenses and other current assets	59	49
Total current assets	1,262	1,047
Property, plant and equipment	3,602	3,433
Accumulated depreciation	(2,297)	(2,143)
Net property, plant and equipment	1,305	1,290
Goodwill	154	152
Equity affiliates	56	53
Intangible assets, net	137	140
Assets held for rent	104	97
Deferred income taxes	250	216
Other assets	46	40
Total assets	$3,314	$3,035

The accompanying notes are an integral part of these consolidated financial statements.

CABOT CORPORATION

CONSOLIDATED BALANCE SHEETS

LIABILITIES AND STOCKHOLDERS' EQUITY

	September 30	
	2017	2016
	(In millions, except share and per share amounts)	
Current liabilities:		
Notes payable	$7	$7
Accounts payable and accrued liabilities	457	364
Income taxes payable	22	25
Current portion of long-term debt	256	1
Total current liabilities	742	397
Long-term debt	661	914
Deferred income taxes	38	41
Other liabilities	245	285
Redeemable preferred stock	27	26
Commitments and contingencies (Note R)		
Stockholders' equity:		
Preferred stock:		
Authorized: 2,000,000 shares of $1 par value		
Issued and Outstanding: None and none	—	—
Common stock:		
Authorized: 200,000,000 shares of $1 par value		
Issued: 62,087,627 and 62,449,425 shares		
Outstanding 61,884,347 and 62,210,711 shares	62	62
Less cost of 203,280 and 238,714 shares of common treasury stock	(6)	(7)
Additional paid-in capital	—	—
Retained earnings	1,683	1,544
Accumulated other comprehensive income (loss)	(259)	(325)
Total Cabot Corporation stockholders' equity	1,480	1,274
Noncontrolling interests	121	98
Total stockholders' equity	1,601	1,372
Total liabilities and stockholders' equity	$3,314	$3,035

The accompanying notes are an integral part of these consolidated financial statements.

CABOT CORPORATION

CONSOLIDATED STATEMENTS OF CASH FLOWS

	Years Ended September 30		
	2017	2016	2015
	(In millions)		
Cash Flows from Operating Activities:			
Net income (loss)	$266	$164	$(326)
Adjustments to reconcile net income (loss) to cash provided by operating activities:			
Depreciation and amortization	155	161	183
Long-lived asset impairment charge	—	23	210
Goodwill impairment charge	—	—	352
Deferred tax provision (benefit)	(35)	(35)	(86)
Employee benefit plan settlement	—	—	18
Equity in net income of affiliated companies	(7)	(3)	(4)
Non-cash compensation	16	17	12
Tax benefit from stock based compensation awards	(8)	—	(2)
Other non-cash (income) expense	(3)	5	6
Changes in assets and liabilities:			
Accounts and notes receivable	(64)	25	154
Inventories	(50)	51	58
Prepaid expenses and other current assets	(14)	1	16
Accounts payable and accrued liabilities	91	(27)	(75)
Income taxes payable	(2)	(4)	(19)
Other liabilities	(16)	5	(12)
Cash dividends received from equity affiliates	11	9	14
Cash provided by operating activities	340	392	499
Cash Flows from Investing Activities:			
Additions to property, plant and equipment	(147)	(112)	(141)
Proceeds from the sale of land	—	16	—
Change in assets held for rent	(6)	(8)	(21)
Other	4	—	—
Cash used in investing activities	(149)	(104)	(162)
Cash Flows from Financing Activities:			
Borrowings under financing arrangements	1	—	—
Repayments under financing arrangements	(3)	(3)	(3)
Increase in notes payable, net	2	—	—
Repayments from issuance of commercial paper, net	—	(12)	(18)
Proceeds from long-term debt, net of issuance costs	—	248	—
Repayments of long-term debt	(2)	(301)	(57)
Purchases of common stock	(61)	(45)	(101)
Proceeds from sales of common stock	21	10	4
Tax benefit from stock based compensation awards	8	—	2
Cash dividends paid to noncontrolling interests	(14)	(16)	(27)
Cash dividends paid to common stockholders	(77)	(65)	(56)

Cash used in financing activities	(125)	(184)	(256)
Effects of exchange rate changes on cash	14	19	(71)
Increase (decrease) in cash and cash equivalents	80	123	10
Cash and cash equivalents at beginning of year	200	77	67
Cash and cash equivalents at end of year	$280	$200	$77
Income taxes paid	$69	$66	$78
Interest paid	$48	$51	$42

The accompanying notes are an integral part of these consolidated financial statements

CABOT CORPORATION

CONSOLIDATED STATEMENTS OF CHANGES IN STOCKHOLDERS' EQUITY

(In millions, except shares in thousands)

	Common Stock, Net of Treasury Stock Shares	Common Stock, Net of Treasury Stock Cost	Additional Paid-in Capital	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Total Cabot Corporation Stockholders' Equity	Noncontrolling Interests	Total Stockholders' Equity
Balance at September 30, 2014	64,383	$ 57	$ 49	$ 1,900	$ (64)	$ 1,942	$ 122	$ 2,064
Net income (loss) attributable to Cabot Corporation				(334)		(334)		(334)
Net income (loss) attributable to noncontrolling interests							8	8
Total other comprehensive income (loss)					(235)	(235)	(4)	(239)
Cash dividends paid to noncontrolling interests							(22)	(22)
Cash dividends paid to common stockholders				(56)		(56)		(56)
Issuance of stock under equity compensation plans	450	—	6			6		6
Amortization of share-based compensation			12			12		12
Purchase and retirement of common stock	(2,375)	(2)	(67)	(32)		(101)		(101)
Balance at September 30, 2015	62,458	55	—	1,478	(299)	1,234	104	1,338
Net income (loss) attributable to Cabot Corporation				149		149		149
Net income (loss) attributable to noncontrolling interests							15	15
Total other comprehensive income (loss)					(26)	(26)	(5)	(31)
Cash dividends paid to noncontrolling interests							(16)	(16)
Cash dividends paid to common stockholders				(65)		(65)		(65)
Issuance of stock under equity compensation plans	737	1	9			10		10
Amortization of share-based compensation			17			17		17
Purchase and retirement of common stock	(984)	(1)	(26)	(18)		(45)		(45)
Balance at September 30, 2016	62,211	55	—	1,544	(325)	1,274	98	1,372
Net income (loss) attributable to Cabot Corporation				241		241		241

Net income (loss) attributable to noncontrolling interests							25	25
Total other comprehensive income (loss)					66	66	2	68
Contributions from noncontrolling interest							4	4
Acquisition of noncontrolling interest			(6)			(6)	6	—
Cash dividends paid to noncontrolling interests							(14)	(14)
Cash dividends paid to common stockholders				(77)		(77)		(77)
Issuance of stock under equity compensation plans	833	2	25			27		27
Amortization of share-based compensation			16			16		16
Purchase and retirement of common stock	(1,160)	(1)	(35)	(25)		(61)		(61)
Balance at September 30, 2017	61,884	$ 56	$ —	$ 1,683	$ (259)	$ 1,480	$ 121	$ 1,601

The accompanying notes are an integral part of these consolidated financial statements.

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Note A. Significant Accounting Policies

The consolidated financial statements have been prepared in conformity with accounting principles generally accepted in the United States ("U.S."). The significant accounting policies of Cabot Corporation ("Cabot" or "the Company") are described below.

Unless otherwise indicated, all disclosures and amounts in the Notes to the Consolidated Financial Statements relate to the Company's continuing operations.

Effective October 1, 2016, the Company adopted a new accounting standard simplifying the presentation of debt issuance costs by presenting debt issuance costs as a reduction of the corresponding debt liability. In addition, the Company early adopted a new accounting standard that simplifies the presentation of deferred income taxes by classifying all deferred taxes as noncurrent assets or liabilities. These new standards were applied retrospectively. The retrospective application of the standard that simplifies the presentation of debt issuance costs resulted in the reclassification of $1 million and $3 million of unamortized debt issuance costs from Prepaid expenses and other current assets and Other assets, respectively, to Long-term debt within the Consolidated Balance Sheets as of September 30, 2016 and $1 million and $2 million of unamortized debt issuance costs from Prepaid expenses and other current assets and Other assets, respectively, to Long-term debt within the Consolidated Balance Sheets as of September 30, 2015. The retrospective application of the standard that simplifies the presentation of deferred income taxes resulted in the reclassification of $41 million of current deferred tax assets and $1 million of current deferred tax liabilities to noncurrent deferred tax accounts within the Consolidated Balance Sheets as of September 30, 2016 and $43 million of current deferred tax assets and $1 million of current deferred tax liabilities to noncurrent deferred tax accounts within the Consolidated Balance Sheets as of September 30, 2015.

Principles of Consolidation

The consolidated financial statements include the accounts of Cabot and its wholly-owned subsidiaries and majority-owned and controlled U.S. and non-U.S. subsidiaries. Additionally, Cabot considers consolidation of entities over which control is achieved through means other than voting rights, of which there were none in the periods presented. Intercompany transactions have been eliminated in consolidation.

Cash and Cash Equivalents

Cash equivalents include all highly liquid investments with a maturity of three months or less at date of acquisition. Cabot continually assesses the liquidity of cash equivalents and, as of September 30, 2017, has determined that they are readily convertible to cash.

Inventories

Inventories are stated at the lower of cost or market. The cost of all carbon black inventories in the U.S. is determined using the last-in, first-out ("LIFO") method. The cost of Specialty Fluids inventories that are classified as assets held for rent is determined using the average cost method. The cost of other U.S. and non-U.S. inventories is determined using the first-in, first-out ("FIFO") method.

Cabot periodically reviews inventory for both potential obsolescence and potential declines in anticipated selling prices. In this review, the Company makes assumptions about the future demand for and market value of the inventory, and based on these assumptions estimates the amount of any obsolete, unmarketable, slow moving, or

overvalued inventory. Cabot writes down the value of these inventories by an amount equal to the difference between the cost of the inventory and its estimated net realizable value.

Investments

The Company has investments in equity affiliates and marketable securities. As circumstances warrant, all investments are subject to periodic impairment reviews. Unless consolidation is required, investments in equity affiliates, where Cabot generally owns between 20% and 50% of the affiliate, are accounted for using the equity method. Cabot records its share of the equity affiliate's results of operations based on its percentage of ownership of the affiliate. Dividends declared from equity affiliates are a return on investment and are recorded as a reduction to the equity investment value. At September 30, 2017 and 2016, Cabot had equity affiliate investments of $56 million and $53 million, respectively. Dividends declared and received from these investments were $11 million, $9 million and $14 million in fiscal 2017, 2016 and 2015, respectively.

All investments in marketable securities are classified as available-for-sale and are recorded at fair value with the corresponding unrealized holding gains or losses, net of taxes, recorded as a separate component of Other comprehensive income (loss). Unrealized losses that are determined to be other-than-temporary, based on current and expected market conditions, are recognized in earnings. The fair value of marketable securities is determined based on quoted market prices at the balance sheet dates. The cost of marketable securities sold is determined by the specific identification method. The Company’s investment in marketable securities was $3 million and $2 million as of September 30, 2017 and 2016, respectively.

Intangible Assets and Goodwill Impairment

The Company records tangible and intangible assets acquired and liabilities assumed in business combinations under the acquisition method of accounting. Amounts paid for an acquisition are allocated to the assets acquired and liabilities assumed based on their fair values at the date of acquisition. The Company uses assumptions and estimates in determining the fair value of assets acquired and liabilities assumed in a business combination. The determination of the fair value of intangible assets requires the use of significant judgment with regard to assumptions used in the valuation model. The Company estimates the fair value of identifiable acquisition-related intangible assets principally based on projections of cash flows that will arise from these assets. The projected cash flows are discounted to determine the fair value of the assets at the dates of acquisition.

Definite-lived intangible assets, which are comprised of trademarks, customer relationships and developed technologies, are amortized over their estimated useful lives and are reviewed for impairment when indication of potential impairment exists, such as a significant reduction in cash flows associated with the assets. The Company recognized an impairment on intangible assets associated with the Purification Solutions business in the third fiscal quarter of 2015, and no events have been subsequently identified that would require an additional impairment evaluation.

Goodwill is comprised of the purchase price of business acquisitions in excess of the fair value assigned to the net tangible and identifiable intangible assets acquired. Goodwill is not amortized, but is reviewed for impairment annually as of May 31, or when events or changes in the business environment indicate that the carrying value of the reporting unit may exceed its fair value. A reporting unit, for the purpose of the impairment test, is at or below the operating segment level, and constitutes a business for which discrete financial information is available and regularly reviewed by segment management. The reporting units with goodwill balances are Reinforcement Materials, Purification Solutions, and Fumed Metal Oxides. The separate businesses included within Performance Chemicals are considered separate reporting units. As such, the goodwill balance relative to Performance Chemicals is recorded in the Fumed Metal Oxides reporting unit.

For the purpose of the goodwill impairment test, the Company first assesses qualitative factors to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If an initial qualitative assessment identifies that it is more likely than not that the carrying value of a reporting unit exceeds its estimated fair value, an additional quantitative evaluation is performed. Alternatively, the Company may elect to proceed directly to the quantitative goodwill impairment test. If based on the quantitative evaluation the fair value of the reporting unit is less than its carrying amount, a goodwill impairment loss would result. The goodwill impairment loss would be the amount by which the carrying value of the reporting unit, including goodwill, exceeds its fair value, limited to the total amount of goodwill allocated to that reporting unit. The fair value of a reporting unit is based on discounted estimated future cash flows. The fair value is also benchmarked against a market approach using the guideline public companies method. The assumptions used to estimate fair value include management’s best estimates of future growth rates, operating cash flows, capital expenditures and discount rates over an estimate of the remaining operating period at the reporting unit level.

When the Company performed its annual goodwill impairment test in the third quarter of fiscal 2015, the fair value of the Purification Solutions reporting unit was less than its carrying amount and the Company recorded impairment

charges as a result. A discussion of this assessment and the charges recorded is included under Note E.

Based on the Company’s most recent annual goodwill impairment test performed as of May 31, 2017, the fair values of the Reinforcement Materials and Fumed Metal Oxides reporting units were substantially in excess of their carrying values. The fair value of the Purification Solutions reporting unit exceeded its carrying amount by 13%. The fair value of the Purification Solutions reporting unit includes certain growth assumptions that are primarily dependent on: (1) growth in demand for Cabot’s existing portfolio of activated carbon products and new products developed for environmental and specialty applications; and (2) stable demand in the mercury removal related portion of the business, which is largely dependent on the amount of coal-based power generation used in the U.S. and the continued regulation of those utilities under the U.S. Mercury and Air Toxics Standards regulation (“MATS”). In April 2017, the U.S. Environmental Protection Agency (“EPA”) indicated that it intends to review the cost benefit analysis previously prepared by the EPA in support of MATS to determine if the EPA should reconsider MATS or some part of it. This continues to be under review by the EPA. Failure to achieve the Company’s projected growth in environmental and/or specialty applications and/or actions taken by the EPA related to MATS that decrease demand for the Company’s products for mercury removal could have a negative impact on the financial results and fair value of the Purification Solutions reporting unit, which may lead to impairment.

Long-lived Assets Impairment

The Company's long-lived assets primarily include property, plant and equipment, intangible assets, long-term investments and assets held for rent. The carrying values of long-lived assets are reviewed for impairment whenever events or changes in business circumstances indicate that the carrying amount of an asset may not be recoverable.

To test for impairment of assets, the Company generally uses a probability-weighted estimate of the future undiscounted net cash flows of the assets over their remaining lives to determine if the value of the asset is recoverable. Long-lived assets are grouped with other assets and liabilities at the lowest level for which independent identifiable cash flows are determinable.

An asset impairment is recognized when the carrying value of the asset is not recoverable based on the analysis described above, in which case the asset is written down to its fair value. If the asset does not have a readily determinable market value, a discounted cash flow model may be used to determine the fair value of the asset. In circumstances when an asset does not have separate identifiable cash flows, an impairment charge is recorded when the Company no longer intends to use the asset. Refer to Note E regarding the results of the impairment test performed in 2015 on the long-lived assets of the Purification Solutions segment.

Property, Plant and Equipment

Property, plant and equipment are recorded at cost. Depreciation of property, plant and equipment is calculated using the straight-line method over the estimated useful lives of the related assets. The depreciable lives for buildings, machinery and equipment, and other fixed assets are between twenty and twenty-five years, ten and twenty-five years, and three and twenty-five years, respectively. The cost and accumulated depreciation for property, plant and equipment sold, retired, or otherwise disposed of are removed from the Consolidated Balance Sheets and resulting gains or losses are included in earnings in the Consolidated Statements of Operations. Expenditures for repairs and maintenance are charged to expenses as incurred. Expenditures for major renewals and betterments, which significantly extend the useful lives of existing plant and equipment, are capitalized and depreciated.

Cabot capitalizes interest costs when they are part of the historical cost of acquiring and constructing certain assets that require a period of time to prepare for their intended use. During fiscal 2017, 2016 and 2015, Cabot capitalized $1 million, $1 million and less than $1 million of interest costs, respectively. These amounts are amortized over the lives of the related assets when they are placed in service.

Assets Held for Rent

Assets held for rent represent Specialty Fluids cesium formate product that is available to customers in the normal course of business and at September 30, 2017 and 2016 also include $5 million and $10 million, respectively, of ore that has been mined and will be converted into cesium formate. Assets held for rent are stated at average cost.

Asset Retirement Obligations

Cabot estimates incremental costs for special handling, removal and disposal of materials that may or will give rise to conditional asset retirement obligations ("ARO") and then discounts the expected costs back to the current year using a credit adjusted risk free rate. Cabot recognizes ARO liabilities and costs when the timing and/or settlement can be reasonably estimated. The ARO reserves were $26 million and $22 million at September 30, 2017 and 2016, respectively, and are included in Accounts payable and accrued liabilities and Other liabilities on the Consolidated Balance Sheets.

Accumulated Other Comprehensive Income (Loss)

Accumulated other comprehensive income (loss) ("AOCI"), which is included as a component of stockholders' equity, includes unrealized gains or losses on available-for-sale marketable securities and derivative instruments, currency translation adjustments in foreign subsidiaries, translation adjustments on foreign equity securities and minimum pension liability adjustments.

Foreign Currency Translation

The functional currency of the majority of Cabot's foreign subsidiaries is the local currency in which the subsidiary operates. Assets and liabilities of foreign subsidiaries are translated into U.S. dollars at exchange rates in effect at the balance sheet dates. Income and expense items are translated at average monthly exchange rates during the year. Unrealized currency translation adjustments are included as a separate component of AOCI within stockholders' equity.

Realized and unrealized foreign currency gains and losses arising from transactions denominated in currencies other than the subsidiary's functional currency are reflected in earnings with the exception of (i) intercompany transactions considered to be of a long-term investment nature; and (ii) foreign currency borrowings designated as net investment hedges. Gains or losses arising from these transactions are included as a component of Other comprehensive income (loss). In fiscal 2017, 2016 and 2015, net foreign currency transaction losses of $4 million, $7 million, and $8 million, respectively, are included in Other income (expense) in the Consolidated Statements of Operations.

Financial Instruments

Cabot's financial instruments consist primarily of cash and cash equivalents, accounts and notes receivable, investments, accounts payable and accrued liabilities, short-term and long-term debt, and derivative instruments. The carrying values of Cabot's financial instruments approximate fair value with the exception of fixed rate long-term debt, which is recorded at amortized cost. The fair values of the Company's financial instruments are based on quoted market prices, if such prices are available. In situations where quoted market prices are not available, the Company relies on valuation models to derive fair value. Such valuation takes into account the ability of the financial counterparty to perform and the Company's own credit risk.

Cabot uses derivative financial instruments primarily for purposes of hedging the exposures to fluctuations in foreign currency exchange rates, which exist as part of its on-going business operations. Cabot does not enter into derivative contracts for speculative purposes, nor does it hold or issue any derivative contracts for trading purposes. All derivatives are recognized on the Consolidated Balance Sheets at fair value. Where Cabot has a legal right to offset derivative settlements under a master netting agreement with a counterparty, derivatives with that counterparty are presented on a net basis. The changes in the fair value of derivatives are recorded in either earnings or AOCI, depending on whether or not the instrument is designated as part of a hedge transaction and, if designated as part of a hedge transaction, the type of hedge transaction. The gains or losses on derivative instruments reported in AOCI are reclassified to earnings in the period in which earnings are affected by the underlying hedged item. The ineffective portion of all hedges is recognized in earnings during the period in which the ineffectiveness occurs.

In accordance with Cabot's risk management strategy, the Company may enter into certain derivative instruments that may not be designated as hedges for hedge accounting purposes. Although these derivatives are not designated as hedges, the Company believes that such instruments are closely correlated with the underlying exposure, thus managing the associated risk. The Company records in earnings the gains or losses from changes in the fair value of derivative instruments that are not designated as hedges. Cash movements associated with these instruments are presented in the Consolidated Statements of Cash Flows as Cash Flows from Operating Activities because the derivatives are designed to mitigate risk to the Company's cash flow from operations. The cash flows related to the principal amount of outstanding debt instruments are presented in the Cash Flows from Financing Activities section of the Consolidated Statements of Cash Flows.

Revenue Recognition

Cabot recognizes revenue when persuasive evidence of an arrangement exists, delivery has occurred or services have been rendered, the price is fixed or determinable and collectability is reasonably assured. Cabot generally is able to ensure that products meet customer specifications prior to shipment. If the Company is unable to determine that the product has met the specified objective criteria prior to shipment or if title has not transferred because of sales terms, the revenue is considered "unearned" and is deferred until the revenue recognition criteria are met.

Shipping and handling charges related to sales transactions are recorded as sales revenue when billed to customers or included in the sales price. Taxes collected on sales to customers are excluded from revenues.

The following table shows the relative size of the revenue recognized in each of the Company's reportable segments:

	Years Ended September 30		
	2017	2016	2015
Reinforcement Materials	53%	48 %	54 %
Performance Chemicals	35%	37 %	33 %

Purification Solutions