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 from _________ to ___________

Commission file number 001-37884

VALVOLINE INC.

Kentucky	30-0939371
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

100 Valvoline Way
Lexington, Kentucky 40509
Telephone Number (859) 357-7777

Securities Registered Pursuant to Section 12(b) of the Act:

Title of each class	Name of each exchange on which registered
Common stock, par value $0.01 per share	New York Stock Exchange

Securities Registered Pursuant to Section 12(g) of the Act: None

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

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 website, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T during the preceding 12 months (or for such shorter period that the Registrant was required to submit and post such files). Yes ☑ No ☐

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

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

Large Accelerated Filer ☑	Accelerated Filer ☐
Non-Accelerated Filer ☐	Smaller Reporting Company ☐
(Do not check if a smaller reporting company)	Emerging Growth Company ☐

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

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

The aggregate market value of voting common stock held by non-affiliates at March 31, 2017 was approximately $850 million. At November 10, 2017, there were 202,527,634 shares of common stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Registrant's definitive proxy statement ("Proxy Statement") for its 2018 Annual Meeting of Shareholders, which will be filed within 120 days of the Registrant's fiscal year end, are incorporated by reference into Part III of this Annual Report on Form 10-K.

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Forward-Looking Statements

This Annual Report on Form 10-K contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Valvoline has identified some of these forward-looking statements with words such as “anticipates,” “believes,” “expects,” “estimates,” “is likely,” “predicts,” “projects,” “forecasts,” “may,” “will,” “should” and “intends” and the negative of these words or other comparable terminology. In addition, Valvoline may from time to time make forward-looking statements in its quarterly reports and other filings with the Securities and Exchange Commission (“SEC”), news releases and other written and oral communications.

These forward-looking statements are based on Valvoline’s current expectations and assumptions regarding, as of the date such statements are made, Valvoline’s future operating performance and financial condition, strategic and competitive advantages, leadership and future opportunities, as well as the economy and other future events or circumstances. Valvoline’s expectations and assumptions include, without limitation, internal forecasts and analyses of current and future market conditions and trends, management plans and strategies, operating efficiencies and economic conditions (such as prices, supply and demand, cost of raw materials, and the ability to recover raw-material cost increases through price increases), and risks and uncertainties associated with the following: demand for Valvoline’s products and services; sales growth in emerging markets; the prices and margins of Valvoline’s products and services; the strength of Valvoline’s reputation and brand; Valvoline’s ability to develop and successfully market new products and implement its digital platforms; Valvoline's ability to attract and retain key employees; Valvoline's ability to operate in highly competitive markets; Valvoline’s ability to retain its largest customers; the success of Valvoline's marketing activities to promote and grow its business; potential product liability claims; new laws or regulations or changes in existing laws or regulations; imposition of new taxes or additional liabilities; Valvoline's ability to execute its growth strategy; third-party risks associated with Valvoline's joint ventures; dependence on franchised locations in Valvoline's Quick Lubes business; business disruptions from natural disasters; Valvoline’s substantial indebtedness (including the possibility that such indebtedness and related restrictive covenants may adversely affect Valvoline’s future cash flows, results of operations, financial condition and Valvoline’s ability to repay debt); Valvoline's ability to access the capital markets or obtain bank credit; operating as a stand-alone public company; Valvoline’s relationship with Ashland; payment-related risks associated with company-owned and franchised Quick Lubes locations; failure, caused by Valvoline, of the stock distribution to Ashland's stockholders to qualify for tax-free treatment, which may result in significant tax liabilities to Ashland for which Valvoline may be required to indemnify Ashland; and the impact of acquisitions and/or divestitures Valvoline has made or may make (including the possibility that Valvoline may not realize the anticipated benefits from such transactions or encounter difficulties with integration). These forward-looking statements are subject to a number of known and unknown risks, uncertainties and assumptions. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this Annual Report on Form 10-K, and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements.

You should not rely upon forward-looking statements as predictions of future events. Although Valvoline believes that the expectations reflected in these forward-looking statements are reasonable, Valvoline cannot guarantee future results, level of activity, performance or achievements. In addition, neither Valvoline nor any other person assumes responsibility for the accuracy and completeness of any of these forward-looking statements. In light of the significant uncertainties in these forward-looking statements, you should not regard these statements as a representation or warranty by Valvoline or any other person that Valvoline will achieve its objectives and plans in any specified time frame, or at all. These forward-looking statements are as of the date of this Annual Report on Form 10-K. Except as required by law, Valvoline assumes no obligation to update or revise these forward-looking statements for any reason, even if new information becomes available in the future.

Other important factors that could cause actual results to differ materially from those contained in these forward-looking statements are discussed under “Use of estimates, risks and uncertainties” in Note 2 of the Notes to Consolidated Financial Statements in this Annual Report on Form 10-K. For a discussion of other factors and risks that could affect Valvoline’s expectations and operations, see “Item 1A. Risk Factors” in this Annual Report on Form 10-K.

All forward-looking statements attributable to Valvoline are expressly qualified in their entirety by these cautionary statements as well as others made in this Annual Report on Form 10-K, and hereafter in Valvoline’s other SEC filings and public communications. You should evaluate all forward-looking statements made by Valvoline in the context of these risks and uncertainties.

PART I

ITEM 1. BUSINESS

General

Valvoline Inc., a Kentucky corporation, is a worldwide producer, marketer and supplier of engine and automotive maintenance products and services. The terms "Valvoline," the "Company," "we," "us," "management" and "our" as used herein refer to Valvoline Inc., its predecessors and its consolidated subsidiaries, except where the context indicates otherwise. On September 28, 2016, Valvoline completed its initial public offering ("IPO") of common stock and trades on the New York Stock Exchange ("NYSE") under the symbol, "VVV."

Valvoline is one of the most recognized and respected premium consumer brands in the global automotive lubricant industry, known for its high quality products and superior levels of service. Established in 1866, Valvoline's heritage spans over 150 years, during which it has developed powerful name recognition across multiple product and service channels.

Valvoline Inc. was incorporated in May 2016 as a subsidiary of Ashland Global Holdings Inc. (which together with its predecessors and consolidated subsidiaries is referred to herein as "Ashland"). Prior to this time, Valvoline operated as an unincorporated commercial unit of Ashland. Following a series of restructuring steps prior to the IPO of Valvoline common stock, the Valvoline business was transferred from Ashland to Valvoline such that the Valvoline business included substantially all of the historical Valvoline business, as well as certain other assets and liabilities transferred to Valvoline by Ashland. In connection with the IPO, 34.5 million shares of Valvoline common stock were sold to investors and Ashland retained 170 million shares, representing approximately 83% of the total outstanding shares of Valvoline common stock.

Company Developments

On May 12, 2017, Ashland distributed all of its remaining interest in Valvoline to Ashland stockholders (the "Distribution") through a pro rata dividend on shares of Ashland common stock outstanding at the close of business on the record date of May 5, 2017, marking the completion of Valvoline's separation from Ashland. Effective upon the Distribution, Ashland no longer owned any shares of Valvoline common stock, and Valvoline was no longer a controlled and consolidated subsidiary of Ashland.

During the fiscal year ended September 30, 2017, Valvoline acquired 43 company-owned stores within the Quick Lubes reportable segment, including 28 stores related to the acquisition of business assets from Time-It Lube LLC and Time-It Lube of Texas, LP in the second fiscal quarter of 2017.

Reportable Segments

Valvoline's reporting structure is composed of three reportable segments: Core North America, Quick Lubes and International. Additionally, to reconcile to consolidated results, certain corporate and other non-operational matters are included in Unallocated and other. Refer to the below for a description of each reportable segment:

Core North America - The Core North America segment sells Valvoline™ and other branded and private label products in the United States and Canada to both retailers for consumers to perform their own automotive maintenance, referred to as "Do-It-Yourself" or "DIY" consumers, as well as to installer customers who use Valvoline products to service vehicles owned by "Do-It-For-Me" or "DIFM" consumers. Valvoline DIY sales are primarily to retail auto parts stores, such as NAPA Auto Parts, AutoZone, O'Reilly Auto Parts and Advance Auto Parts, as well as leading mass merchandisers and independent auto part stores. Valvoline also sells branded products and services to installer customers such as car dealers, general repair shops and third-party quick lube locations, including Goodyear, Monro, Express Oil Change, TBC Retail Group, directly as well as through a national network of approximately 140 distributors. The Valvoline team also sells branded products and solutions to heavy duty customers, such as on-highway fleets and construction companies and has a strategic relationship with Cummins Inc. ("Cummins"), a leading heavy duty engine manufacturer, for co-branding products in the heavy duty business.

Quick Lubes - The Quick Lubes segment services the passenger car and light truck quick lube market through two platforms: Valvoline's company-owned and franchised Valvoline Instant Oil Change ^{SM} ("VIOC") stores, the second largest U.S. retail quick lube service chain by number of stores; and Express Care™, a quick lube customer platform developed for independent operators who purchase Valvoline motor oil and other products pursuant to contracts while displaying Valvoline branded signage. VIOC centers offer customers a quick, easy and trusted way to maintain their vehicles, utilizing well-trained technicians who have access to a proprietary service process that sets forth rigorous protocols for both the steps that must be followed in the service of vehicles and for interactions with customers. As of September 30, 2017 , the VIOC network consisted of 384 company-owned and 743 franchised locations and operated in 46 states with eleven years of consecutive same-store sales growth for both company-owned and franchised stores (determined on a fiscal year basis, with new stores excluded from the metric until the completion of their first full fiscal year in operation). The Express Care™ platform supports smaller (typically single store) operators that do not fit Valvoline’s franchise model and typically offer other non-quick lube services such as auto repairs and car washes. As of September 30, 2017 , there were 316 Express Care™ locations.

International - Valvoline’s International segment sells Valvoline™ and other branded products through wholly-owned affiliates, joint ventures, licensees and independent distributors in approximately 140 countries outside of the United States and Canada. Key international markets include China; India; Europe, Middle East, and Africa (“EMEA”); Latin America; and Australia Pacific. Valvoline has a growing presence in a number of markets, with primary growth targets being China, India and select countries within Latin America. International sales include products for both light duty (passenger cars, light trucks and two wheelers) and heavy duty (heavy trucks, agricultural, mining and construction equipment). Light duty products are sold internationally primarily through distributors to installer customers. Heavy duty products are sold either directly to key customers or through distributors. Valvoline goes to market in its International business segment in three ways: (1) through its own local sales, marketing, and back office support teams; (2) through joint ventures; and (3) through independent distributors. Valvoline has 50/50 joint ventures with Cummins in India, China and Argentina, and smaller joint ventures in select countries in South America and Asia.

Unallocated and other - Unallocated and other generally includes items that are non-operational in nature and not directly attributable to any of the reportable segments, such as components of pension and other postretirement benefit plan expense/income (excluding service costs, which are allocated to the reportable segments), certain significant company-wide restructuring activities and legacy costs or adjustments that relate to divested businesses, including costs related to the separation from Ashland.

The information required by Item 1 with respect to Valvoline's reportable segments and financial information regarding its geographic operations can be found in Note 20 of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Annual Report on Form 10-K.

Industry Overview

Valvoline participates primarily in the global finished lubricants market. In total, global lubricants demand is estimated to be approximately 11 billion gallons. Demand for passenger car motor oil and motorcycle oil accounted for approximately 21% of global lubricant demand, while the remaining 79% of demand was for commercial and industrial products. The United States has historically accounted for the largest amount of lubricant demand, followed by China and India. The lubricants market is impacted by the following key drivers and trends:

- Global lubricants market demand is shifting towards higher performance finished lubricants, largely driven by advancements in vehicle/equipment design and original equipment manufacturer (“OEM”) requirements for improved efficiency, reduced carbon footprints and optimized fuel consumption.

- There has been increasingly stringent regulation, particularly in North America and Europe, aimed at reducing toxic emissions, which has led to a continuous drive for innovation given changing specifications for lubricants.

- Between 2007 and 2012, the North American transport lubes market experienced average annual volume declines of 2.7% per annum, due in part to an increase in oil change intervals, which have resulted from changing OEM recommendations and advancements in engine technology. However, market conditions have shown some indications of improvement due to an increase in the number of cars on the road and miles driven.

- A surge in the number of cars on the road has led to rapid expansion of passenger vehicle lubricant sales in developing regions.

Business and Growth Strategies

The strength of Valvoline’s business model is the ability to generate profitable sales across multiple channels to market, leveraging the Valvoline brand through effective marketing, innovative product technology and the capabilities of the Valvoline team. Valvoline has delivered strong profits and return on capital, with balanced results. Today, Valvoline is a high margin, high free cash flow generating business, with significant growth opportunities. Valvoline’s key business and growth strategies include:

- growing and strengthening Valvoline’s quick lube network through organic store expansion, opportunistic, high-quality acquisitions in both core and new markets within the VIOC system and strong sales efforts to partner with new Express Care operators, in addition to continued same-store sales growth and profitability within Valvoline’s existing VIOC system stores as a result of attracting new customers and increasing customer satisfaction, customer loyalty and average transaction size;

- accelerating international growth across key markets where demand for premium lubricants is growing, such as China, India and select countries in Latin America, by building strong distribution channels in under-served geographies, replacing less successful distributors and improving brand awareness among installer customers in those regions; and
- leveraging innovation, in terms of product development, packaging, marketing and the implementation of Valvoline's new digital infrastructure, to strengthen market share and profitability.

Valvoline's Products

Valvoline's portfolio is designed to deliver quality product solutions to meet the needs of its wide variety of customers with varying needs. Valvoline has a history of leading innovation with revolutionary products such as All Climate™, DuraBlend™, and MaxLife™. I n addition to the iconic Valvoline-branded passenger car motor oils and other co-branded and private label automotive lubricant products, Valvoline provides a wide array of lubricants used in heavy duty equipment, as well as automotive coolants and chemicals designed to improve engine performance and lifespan. Premium branded product offerings enhance Valvoline's high quality reputation and provide customers with solutions that address a wide variety of needs. Valvoline's product offerings fall into the following categories:

Product Line		% of 2017 Sales	Description
Lubricants	Passenger Car / Light Duty	89%	Comprehensive assortment meeting the needs of passenger car, motorcycle and other light duty engines, including motor oil, transmission fluid, greases and gear oil
	Heavy Duty		Lubricating solutions for a wide range of heavy duty applications ranging from on-road (Class 4 – Class 8 vehicles) to off-road construction, mining, agricultural and power generation equipment
Antifreeze	Antifreeze / Coolants	4%	Antifreeze/coolants for OEMs; full assortment of additive technologies and chemistries to meet virtually all light-duty and heavy duty engine applications and heat transfer requirements of batteries and fuel cells used to power electric vehicles
Chemicals	Maintenance Chemicals	4%	Functional and maintenance chemicals ranging from brake fluids and power steering fluids to chemicals specifically designed to clean and maintain optimal performance of fuel, cooling and drive train systems
	Coatings		Specialty coatings designed to target rust prevention, and sound absorption for automotive and industrial applications
Filters	Filters	3%	Oil and air filters meeting the needs of light-duty vehicles
Other	Other Complementary Products	-%	Windshield wiper blades, light bulbs, serpentine belts and drain plugs

Included within lubricants above are revenues for related preventive maintenance services, including full-service oil changes, that VIOC stores provide.

Competition

The industry is highly competitive and Valvoline faces competition in all product categories and subcategories. Competition is based on several key criteria, including brand recognition, product performance and quality, product price, product availability and security of supply, ability to develop products in cooperation with customers and customer service, as well as the ability to bring innovative products or services to the marketplace.

In the Core North America reportable segment, Valvoline's principal competitors for retail customers are global integrated oil brands, such as Shell, which produces Pennzoil and Quaker State; BP, which produces Castrol; Exxon Mobil, which produces Mobil 1; as well as mid-tier brands and private label producers. With respect to installer customers in the United States and Canada, Valvoline competes with these same major integrated oil brands, many of which have significantly greater financial resources and more diverse portfolios of products and services, leading to greater operating and financial flexibility.

The Quick Lubes segment competes with other major franchised brands that offer a turn-key operations management system, such as Jiffy Lube (owned by Shell), Grease Monkey, Take 5 Oil Change, and Express Oil Change, as well as national branded companies that offer a professional signage program with limited business model support, similar to Valvoline's Express Care network, and regional players such as Super-Lube, American Lube Fast and Express Oil Change that are not directly affiliated with a major brand. Valvoline also competes to some degree with automotive dealerships and service stations, which provide quick lube and other preventative maintenance services. Valvoline believes there are over 9,000 existing quick lube stores currently operating in the U.S. market. Jiffy Lube is currently the Company's largest competitor by number of stores with just over 1,900 stores owned or operated by franchisees.

Major competitors of Valvoline's International business vary by region. Valvoline generally faces strong competition from global integrated oil brands, as these companies have a particularly strong presence in Europe and Asia. In certain markets, Valvoline also competes with regional brands, including brands produced by national oil companies, such as Sinopec in China and Indian Oil in India.

Competitive factors in all of these markets include price, product or service technology, brand awareness and loyalty, customer service, and sales and marketing. Valvoline's Core North America and International reportable segments also compete on the basis of shelf space and product packaging.

Marketing and Advertising

Valvoline places a high priority on sales and marketing and focuses marketing efforts on areas expected to yield the highest rate of return. Valvoline has dedicated marketing resources in each reportable segment, which are well qualified to reach target customers. The majority of Valvoline's large customers are supported by direct sales representatives with a number of key customers having dedicated Valvoline teams. In addition, Valvoline has a number of distributors within the Core North America and International reportable segments that represent the Company's products. In Core North America, Valvoline products are sold to consumers through over 30,000 retail outlets, to installer customers with over 12,000 locations, and in Quick Lubes through 1,127 Valvoline-branded franchised and company-owned stores. Valvoline serves the customer base through an extensive sales force and technical support organization, allowing leverage of the technology portfolio and customer relationships globally, while meeting customer demands locally.

Valvoline uses a variety of marketing techniques to build awareness of, and create demand for, Valvoline products and services. Valvoline advertises through social and digital media, as well as traditional media outlets such as television, print and radio. Valvoline selectively sponsors teams in high performance racing series, including a current sponsorship of Hendrick Motorsports, featuring drivers Dale Earnhardt Jr., Chase Elliott, Jimmie Johnson and Kasey Kahne. In addition, Valvoline sponsors other teams and players in other high performing sports, including the Manchester City Football Club and the Memphis Grizzlies, as well as Valvoline's joint venture sponsorship of renowned Indian cricket player, Virat Kohli.

Valvoline has also embarked on a digital infrastructure initiative that will enable the use of technology across the entire enterprise. Valvoline believes its digital marketing infrastructure will drive more effective engagement to deliver growth, customer retention and acquisition as a strategic business partner.

Research and Development

Valvoline's innovation is central to the successful performance of its business. Valvoline research and development is focused on developing new and innovative products to meet the current and future needs of its customers. These products are developed through Valvoline's "Hands on Expertise" innovation approach, which begins with the mathematical modeling of critical product design elements and extends through field testing. In addition, Valvoline technology centers, located in the Americas, Europe and Asia Pacific regions, develop solutions for existing and emerging on and off-road equipment. Valvoline's research and development team also leverages its strong relationships with customers and suppliers to incorporate their feedback into the research and development process. In addition to its own research and development initiatives, Valvoline also conducts limited testing for other entities, which builds its expertise and partially offsets its research and development costs. Expenses for research and development are classified in Selling, general and administrative expense in the Consolidated Statements of Comprehensive Income included in Item 8 of Part II of this Annual Report on Form 10-K, which were $13 million in each of fiscal 2017 and fiscal 2016 and $11 million in fiscal 2015. Valvoline anticipates that the Company will continue to incur research and development expenditures in the future to ensure a continuing flow of innovative, high-quality products and services and to help maintain and enhance Valvoline's competitive position.

Intellectual Property

Valvoline is continually seeking to develop new technology and enhance its existing technology. Valvoline has been issued 34 U.S. and 59 international patents and has 17 U.S. and 51 international patent applications pending or published. Valvoline also holds over 2,450 trademarks in various countries around the world, which Valvoline believes are some of its most valuable assets, for which Valvoline dedicates significant resources to protect. These trademarks include the Valvoline trademark and the famous "V" brand logo trademark, which are registered in over 150 countries. In addition, Valvoline uses various trade names and service marks in its business, including Valvoline ™ , Valvoline Instant Oil Change ℠ , MaxLife ™ , All Climate™, DuraBlend™, SynPower ™ and Premium Blue ™ . Valvoline also has a variety of intellectual property licensing agreements primarily with its franchisees. Valvoline owns over 700 domain names that are used to promote Valvoline products and services and provide information about the Company.

Raw Material Supply and Prices

The key raw materials used in Valvoline's business are base oils, additives, packaging materials (high density polyethylene bottles, corrugated packaging and steel drums) and ethylene glycol. Valvoline continuously monitors global supply and cost trends of these key raw materials and obtains these raw materials from a diversified network of large global suppliers and regional providers. Valvoline's sourcing strategy is to ensure supply through contracting a diversified supply base while leveraging market conditions to take advantage of spot opportunities whenever such conditions are available. Valvoline leverages worldwide spend to obtain favorable contract terms from the global suppliers and use the regional providers to ensure market competitiveness and reliability in its supply chain. For materials that must be customized, Valvoline works with market leaders with global footprints and well developed business continuity plans. Valvoline also utilizes the Company's research and development resources to develop alternative product formulations, which provide flexibility in the event of supply interruptions. Valvoline closely monitors the Company's supply chain and conducts annual supply risk assessments of its critical suppliers to reduce risk.

Valvoline has a large manufacturing and distribution footprint in the United States, with seven lubricant blending and packaging plants, two distribution centers and several packaging and warehouse locations. Additional lubricant blending and packaging plants are located in Australia and the Netherlands. Valvoline also has a blending and packaging facility in Canada. In addition, Valvoline also uses numerous third-party toll manufacturers and warehouses.

Valvoline seeks to actively manage fluctuations in supply costs, product selling prices and the timing thereof to preserve unit margins. The prices of many of Valvoline's products fluctuate based on the price of base oil, which is a large percentage of Valvoline's cost of sales. Historically, base oil prices have been volatile, which sometimes causes sharp cost increases during periods of short supply. Since 2011, base oil supply has increased dramatically while global demand has generally grown at a steady and moderate rate. Although base oil, a derivative of crude, is highly correlated to the global oil market, excess supply of base oil in recent years has contributed to reduced volatility in the base oil market. Base oil prices generally follow crude prices, but the lag period between changes in the price of crude oil and changes in the price of base oil is influenced by whether there is an excess of or shortness in the supply of base oil.

Valvoline has generally been successful in adjusting product selling prices to react to changes in base oil costs to preserve unit margins. As part of the strategy to mitigate the impact of base oil volatility, Valvoline has negotiated base oil supply contracts with terms that have reduced the impact of changes in the base oil market on Valvoline's financial results. Valvoline has revised contracts in several of the Company's sales channels to accelerate the timing of adjustments to selling prices in response to changes in raw material prices. Pricing adjustments to product sold to Valvoline's larger national or regional installer customer accounts tend to be made pursuant to contract and are often based on movements in published base oil indices. Pricing for product sold to Valvoline's franchisees is adjusted on a periodic basis pursuant to an agreed upon index (weighted combination of published base oil indices), the composition and weighting of which may be updated from time to time by Valvoline and representatives of Valvoline's franchisees. Pricing adjustments for product sold to retail customers, private label products in the United States and product sold to smaller installer customer accounts are generally market driven, based on negotiations in light of base oil costs and the pricing strategies of Valvoline's competitors.

Backlog

Although Valvoline may experience availability constraints from time to time for certain products, orders are generally filled within 30 days of receiving them. Therefore, Valvoline usually has a product backlog of less than 30 days at any one time, which the Company does not consider material to its business.

Seasonality

Overall, there is little seasonality in Valvoline's business. Valvoline's Quick Lubes business and to a lesser extent, its Core North America business tend to experience slightly higher sales volume in the summer months due to summer vacations and increased driving, as well as during the periods of time leading into holidays. Both businesses also tend to slow a little from October to February due to inclement weather in parts of the United States and Canada. Valvoline’s International business experiences almost no seasonality due to its geographic diversity and the high percentage of its business in the commercial and industrial lubricants market, which is less influenced by weather.

Environmental and Regulatory Matters

Valvoline is subject to numerous foreign, federal, state and local Environmental Health and Safety (“EHS”) laws and regulations. These laws and regulations govern matters such as safe working conditions; product stewardship; air emissions; discharges to the land and surface waters; generation, handling, storage, transportation, treatment and disposal of hazardous substances and waste materials; and the registration and evaluation of chemicals. Valvoline maintains policies and procedures to control EHS risks and monitor compliance with applicable EHS laws and regulations. These laws and regulations also require Valvoline to obtain and comply with permits, registrations or other authorizations issued by governmental authorities. These authorities can modify or revoke the Company's permits, registrations or other authorizations and can enforce compliance through fines and injunctions.

Valvoline expects to incur ongoing costs to comply with existing and future EHS requirements, including the cost of a dedicated EHS group that is responsible for ensuring its business maintains compliance with applicable laws and regulations. This responsibility is carried out through training; formulation of and widespread communication of EHS policies; formulation of procedures and working practices; design and implementation of EHS management systems; internal compliance and management assessments; monitoring legislative and regulatory developments that may affect Valvoline's operations; and incident response planning.

Valvoline is also subject to regulation by various U.S. federal regulatory agencies and by the applicable regulatory authorities in countries in which Valvoline’s products are manufactured and sold. Such regulations principally relate to the ingredients, classification, labeling, manufacturing, packaging, transportation, advertising and marketing of Valvoline’s products. In addition, the Company is subject to the Foreign Corrupt Practices Act and other countries’ anti-corruption and anti-bribery regimes.

Valvoline could incur substantial costs if the Company were to violate or become liable under environmental laws or other applicable regulations. Liabilities are accrued when Valvoline considers the matter to be probable of loss and the costs can reasonably be estimated. Such costs and accruals are presently not material to Valvoline's results of operations, financial position, or cash flows. There can be no assurances that existing or future environmental laws and other regulations applicable to the Company's operations or products will not lead to a material adverse impact on Valvoline's results of operations, financial position or cash flows.

Employees

As of September 30, 2017 , Valvoline had approximately 5,600 employees worldwide (excluding contract employees).

Available Information

More information about Valvoline is available on Valvoline’s website at http://www.valvoline.com. On this website, Valvoline makes available, free of charge, its Annual Reports on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K and any amendments to those reports, as well as any beneficial ownership reports of officers and directors filed on Forms 3, 4 and 5. All such reports are available as soon as reasonably practicable after they are electronically filed with, or electronically furnished to, the SEC. Valvoline also makes available, free of charge on its website, its Corporate Governance Guidelines, Board Committee Charters, Director Independence Standards and the Global Standards of Business Conduct that applies to Valvoline’s directors, officers and employees. These documents are also available in print to any shareholder who requests them. Information contained on Valvoline’s website is not part of this Annual Report on Form 10-K and is not incorporated by reference in this document. The public may read and copy any materials Valvoline files with the SEC at the SEC’s Public Reference Room at 100 F Street, NE, Washington, DC 20549. The public may obtain information on the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC website (http://www.sec.gov) contains reports, proxy and information statements and other information regarding issuers that file electronically with the SEC.

Executive Officers of Valvoline

The following is a list of Valvoline's executive officers, their ages, positions and experience during the last five years.

SAMUEL J. MITCHELL, JR. (age 56) is Chief Executive Officer and Director of Valvoline. Mr. Mitchell was appointed as a director and Chief Executive Officer in May 2016 and September 2016, respectively. He served as Senior Vice President of Ashland from 2011 to September 2016 and President of Valvoline from 2002 to September 2016.

MARY E. MEIXELSPERGER (age 57) is Chief Financial Officer of Valvoline since June 2016. Prior to joining Valvoline, Ms. Meixelsperger was Senior Vice President and Chief Financial Officer of DSW Inc. from April 2014 to June 2016 and held the roles of Chief Financial Officer, Controller and Treasurer at Shopko Stores from 2006 to 2014.

JULIE M. O'DANIEL (age 50) is Senior Vice President, General Counsel and Corporate Secretary of Valvoline since September 2016. She served as Lead Commercial Counsel of Valvoline from April 2014 to September 2016. Ms. O'Daniel previously served as Litigation Counsel of Valvoline from July 2007 to April 2014.

THOMAS A. GERRALD II (age 53) is Senior Vice President, Core North America of Valvoline since September 2016. He served as Senior Vice President, U.S. Installer Channel, of Valvoline from June 2012 to September 2016.

FRANCES E. LOCKWOOD (age 67) is Chief Technology Officer of Valvoline since September 2016. She served as Senior Vice President, Technology, of Valvoline from May 1994 to September 2016.

HEIDI J. MATHEYS (age 45) is Chief Marketing Officer of Valvoline since September 2016. She served as Senior Vice President, Do-It-Yourself Channels, of Valvoline from August 2013 to September 2016. Ms. Matheys previously served as Vice President, Global Brands, of Valvoline from September 2012 to August 2013.

CRAIG A. MOUGHLER (age 60) is Senior Vice President, International & Product Supply of Valvoline since September 2016. He served as Senior Vice President, International of Valvoline from October 2002 to September 2016.

ANTHONY R. PUCKETT (age 55) is President, Quick Lubes of Valvoline since September 2016. He served as President of Valvoline Instant Oil Change from August 2007 to September 2016.

VICTOR T. RIOS (age 48) is Chief Information Officer and Chief Digital Officer since June 2016. Prior to joining Valvoline, Mr. Rios was Chief Information Officer for the Consumer Medical Technologies division of Johnson & Johnson from November 2013 to February 2016 and held the roles of Chief Information Officer of the Vision Care division and Vice President of IT, Global Solutions Delivery at Johnson & Johnson from 2011 to 2013.

DAVID J. SCHEVE (age 42) is Chief Accounting Officer and Controller of Valvoline since October 2016. Mr. Scheve joined the Company from Southern Graphic Systems, a supplier of design-to-print brand development products and services, where he started in June 2007 as its Global Corporate Controller and was most recently its Chief Financial Officer and Vice President of Finance.

SARA K. STENSRUD (age 50) is Chief People and Communications Officer of Valvoline since August 2016. Prior to joining Valvoline, Ms. Stensrud was Executive Vice President and Chief Human Resources Officer of Chico's FAS, Inc. from 2010 to 2016.

ITEM 1A. RISK FACTORS

The following "risk factors" could materially and adversely affect Valvoline's business, operations, financial position or future financial performance. This information should be considered when reading the rest of this Annual Report on Form 10-K, including Management's Discussion and Analysis and the consolidated financial statements and related notes. These factors could cause future results to differ from those in forward-looking statements and from historical trends.

Risks Related to Valvoline's Business

Damage to Valvoline's brand and reputation could have an adverse effect on its business.

Maintaining Valvoline's strong reputation with both consumers and customers is a key component of its business. Product or service complaints or recalls, its inability to ship, sell or transport affected products and governmental investigations may harm its reputation with consumers and customers, which may materially and adversely affect its business operations, decrease sales and increase costs.

Valvoline manufactures and markets a variety of products, such as automotive and industrial lubricants and antifreeze, and provides automotive maintenance services. If allegations are made that some of Valvoline's products have failed to perform up to consumers' or customers' expectations or have caused damage or injury to individuals or property, or that Valvoline's services were not provided in a manner consistent with its vision and values, the public may develop a negative perception of its brands. In addition, if Valvoline's franchisees or Express Care operators do not successfully operate their quick lube service centers in a manner consistent with Valvoline's standards, its brand, image and reputation could be harmed, which in turn could negatively impact its business and operating results. In addition, if any party with whom Valvoline has a sponsorship relationship were to generate adverse publicity, Valvoline's brand image could be harmed. A negative public perception of Valvoline's brands, whether justified or not, could impair its reputation, involve it in litigation, damage its brand equity and have a material adverse effect on its business. In addition, damage to the reputation of Valvoline's competitors or others in its industry could negatively impact Valvoline's reputation and business.

Valvoline has set aggressive growth goals for its business, including increasing sales, cash flow, market share, margins and number of VIOC stores, in order to achieve its long-term strategic objectives. Execution of Valvoline's growth strategies and business plans to facilitate that growth involves a number of risks.

Valvoline has set aggressive growth goals for its business in order to meet its long-term strategic objectives and improve shareholder value. Valvoline's failure to meet one or more of these goals or objectives would negatively impact its business and is one of the most important risks that Valvoline faces. Aspects of that risk include, among others, changes to the economic environment, changes to the competitive landscape, including those related to automotive maintenance recommendations and consumer preferences, attraction and retention of skilled employees, the potential failure of product innovation plans, failure to comply with existing or new regulatory requirements, failure to maintain a competitive cost structure and other risks outlined in greater detail in this "Risk Factors" section.

Demand for Valvoline's products and services could be adversely affected by consumer spending trends, declining economic conditions, trends in Valvoline's industry and a number of other factors, all of which are beyond its control.

Demand for Valvoline's products and services may be affected by a number of factors it cannot control, including the number and age of vehicles in current service, regulation and legislation, technological advances in the automotive industry and changes in engine technology, including the adoption rate of electric or other alternative engine technologies, changing automotive original equipment manufacturer ("OEM") specifications and longer recommended intervals between oil changes. In addition, during periods of declining economic conditions, consumers may defer vehicle maintenance. Similarly, increases in energy prices or other factors may cause miles driven to decline, resulting in less wear and tear and lower demand for maintenance, which may lead to consumers deferring purchases of Valvoline's products and services. All of these factors, which impact metrics such as drain intervals and oil changes per day, could result in a decline in the demand for Valvoline's products and services and adversely affect its sales, cash flows and overall financial condition.

The success of Valvoline's growth initiatives depends on its ability to successfully develop and implement one or more integrated digital platforms that will help it better understand consumers and more effectively engage them.

Valvoline is in the process of designing and implementing a number of digital platforms that will integrate its operations with customer and consumer data. The successful development and implementation of these digital platforms will depend on Valvoline's ability to identify an appropriate strategy, dedicate adequate resources and select technologies that will provide it with adequate flexibility to adapt to future developments in the marketplace and changes in consumer and customer behavior. Valvoline has incurred and expects to incur significant upfront investments to develop these digital platforms. There is a risk that once implemented, these digital platforms will not deliver all or part of the expected benefits, including additional sales. As Valvoline develops and implements its digital platforms, it may elect to modify, replace or abandon certain technology initiatives, which could result in asset write-downs.

Valvoline's success depends upon its ability to attract and retain key employees and the identification and development of talent to succeed senior management.

Valvoline's success depends on its ability to attract and retain key personnel, and it relies heavily on its senior management team. The inability to recruit and retain key personnel or the unexpected loss of key personnel may adversely affect Valvoline's operations. This risk of unwanted employee turnover is substantial in positions that require certain technical expertise. This risk is also substantial in developing international markets Valvoline has targeted for growth and in North America, where attracting marketing and technical expertise to geographies necessary to support its management is important to its success. In addition, because of Valvoline's reliance on its senior management team, its future success depends, in part, on its ability to identify and develop or recruit talent to succeed its senior management and other key positions throughout the organization. If Valvoline fails to identify and develop or recruit successors, it is at risk of being harmed by the departures of these key employees.

Valvoline faces significant competition from other companies, which places downward pressure on prices and margins and may adversely affect Valvoline's business and results of operations.

Valvoline operates in highly competitive markets, competing against a number of domestic and foreign companies. Competition is based on several key criteria, including brand recognition, product performance and quality, product price, product availability and security of supply, ability to develop products in cooperation with customers and customer service, as well as the ability to bring innovative products or services to the marketplace. Certain key competitors, including Shell/Pennzoil, BP/Castrol and Exxon/Mobil, are significantly larger than Valvoline and have greater financial resources and more diverse portfolios of products and services, leading to greater operating and financial flexibility. As a result, these competitors may be better able to withstand adverse changes in conditions within the relevant industry, the prices of raw materials and energy or general economic conditions. In addition, competitors' pricing decisions could compel Valvoline to decrease its prices, which could negatively affect Valvoline's margins and profitability. Additional competition in markets served by Valvoline could adversely affect margins and profitability and could lead to a reduction in market share. Also, Valvoline competes in certain markets that are flat to declining, such as the U.S. passenger car motor oil market. If Valvoline's strategies for dealing with declining markets and leveraging market opportunities are not successful, its results of operations could be negatively affected.

Because of the concentration of Valvoline's sales to a small number of retailers, the loss of one or more, or a significant reduction in, orders from, its top retail customers could adversely affect its financial results, as could the loss of one of its distributor relationships.

Valvoline's Core North America segment's sales represented approximately 48% of Valvoline's total sales in fiscal 2017. NAPA Auto Parts, AutoZone, Advance Auto Parts, O'Reilly Auto Parts and another large national retailer together accounted for 47% of Core North America's fiscal 2017 sales and 44% of Core North America's outstanding trade accounts receivable as of September 30, 2017. NAPA Auto Parts accounted for greater than 16% of Core North America's fiscal 2017 sales. Valvoline's volume of sales to these customers fluctuates and can be influenced by many factors, including product pricing, purchasing patterns and promotional activities. The loss of, or significant reduction in orders from, one of Valvoline's top five retail customers or any other significant customer could have a material adverse effect on its business, financial condition, results of operations or cash flows, as could customer disputes regarding shipments, fees, merchandise condition or related matters. Valvoline's inability to collect accounts receivable from one of its major customers, or a significant deterioration in the financial condition of one of these customers, including a bankruptcy filing or a liquidation, could also have a material adverse effect on Valvoline's financial condition, results of operations or cash flows. Valvoline also relies on independent distributors to sell and deliver its products. Disagreements or the loss of Valvoline's relationship with a distributor could also have a material adverse effect on its financial condition, results of operations or cash flows.

Valvoline's marketing activities may not be successful.

Valvoline invests substantial resources in advertising, consumer promotions and other marketing activities in order to maintain and strengthen its brand image and product awareness. The Valvoline name and brand image are integral to the growth of its business and its expansion into new markets. Failure to adequately market and differentiate its products and services from competitive products and services could adversely affect Valvoline's business. There can be no assurances that Valvoline's marketing strategies will be effective or that its investments in advertising activities will result in a corresponding increase in sales of its products. If Valvoline's marketing initiatives are not successful, it will have incurred significant expenses without the benefit of higher sales of its products.

Valvoline's business exposes it to potential product liability claims and recalls, false advertising claims and other claims, which could adversely affect its financial condition and performance.

The development, manufacture and sale of automotive, commercial and industrial lubricants and automotive chemicals and the provision of automotive maintenance services involve an inherent risk of exposure to product liability claims, false advertising claims, product recalls, workplace exposure, product seizures and related adverse publicity. A product liability claim, false advertising claim or related judgment against the Company could also result in substantial and unexpected expenditures, affect consumer or customer confidence in Valvoline's products and services, and divert management's time and attention from other responsibilities. Although Valvoline maintains product and general liability insurance, there can be no assurance that the type or level of coverage it has is adequate or that it will be able to continue to maintain its existing insurance or obtain comparable insurance at a reasonable cost, if at all. A product recall or a partially or completely uninsured product liability, false advertising or other judgment against Valvoline could have a material adverse effect on its reputation, results of operations and financial condition.

Failure to develop and market new products and production technologies could impact Valvoline's competitive position and have an adverse effect on its business and results of operations.

The lubricants industry is subject to periodic technological change and ongoing product improvements. In order to maintain margins and remain competitive, Valvoline must successfully develop and introduce new products or improvements that appeal to its customers and ultimately to global consumers. Changes in additive technologies, base oil production techniques and sources, and the demand for improved performance by OEMs and consumers place particular pressure on Valvoline to continue to improve its product offerings. Valvoline's efforts to respond to changes in consumer demand in a timely and cost-efficient manner to drive growth could be adversely affected by difficulties or delays in product development and service innovation, including the inability to identify viable new products, successfully complete research and development, obtain regulatory approvals, obtain intellectual property protection or gain market acceptance of new products or service techniques. Due to the lengthy development process, technological challenges and intense competition, there can be no assurance that any of the products Valvoline is currently developing, or could develop in the future, will achieve substantial commercial success. The time and expense invested in product development may not result in commercial products or provide revenues. Valvoline could be required to write-off its investments related to a new product that does not reach commercial viability. Moreover, Valvoline may experience operating losses after new products are introduced and commercialized because of high start-up costs, unexpected manufacturing costs or problems, or lack of demand.

The impact of changing laws or regulations or the manner of interpretation or enforcement of existing laws or regulations could adversely impact Valvoline's financial performance and restrict its ability to operate its business or execute its strategies.

New laws or regulations, or changes in existing laws or regulations or the manner of their interpretation or enforcement, could increase Valvoline's cost of doing business and restrict its ability to operate its business or execute its strategies. This risk includes, among other things, the possible taxation under U.S. law of certain income from foreign operations, the possible taxation under foreign laws of certain income Valvoline reports in other jurisdictions, regulations related to the protection of private information of its employees and customers, regulations issued by the U.S. Federal Trade Commission (and analogous non-U.S. agencies) affecting Valvoline and its customers, compliance with the REACH regulation (and analogous non-EU initiatives). In addition, compliance with laws and regulations is complicated by Valvoline's substantial and growing global footprint, which will require significant and additional resources to ensure compliance with applicable laws and regulations in the approximately 140 countries where Valvoline conducts business.

Valvoline's global operations expose it to trade and economic sanctions and other restrictions imposed by the United States, the European Union and other governments and organizations. The U.S. Departments of Justice, Commerce, State and Treasury and other federal agencies and authorities have a broad range of civil and criminal penalties they may seek to impose against corporations and individuals for violations of economic sanctions laws, export control laws, the Foreign Corrupt Practices Act (the "FCPA") and other federal statutes and regulations, including those established by the Office of Foreign Assets Control ("OFAC"). Under these laws and regulations, as well as other anti-corruption laws, anti-money-laundering laws, export control laws, customs laws, sanctions laws and other laws governing Valvoline's operations, various government agencies may require export licenses, may seek to impose modifications to business practices, including cessation of business activities in sanctioned countries or with sanctioned persons or entities and modifications to compliance programs, which may increase compliance costs, and may subject Valvoline to fines, penalties and other sanctions. A violation of these laws or regulations could adversely impact Valvoline's business, results of operations and financial condition.

Although Valvoline has implemented policies and procedures in these areas, it cannot assure you that its policies and procedures are sufficient or that directors, officers, employees, representatives, distributors, consultants and agents have not engaged and will not engage in conduct for which Valvoline may be held responsible, nor can Valvoline assure you that its business partners have not engaged and will not engage in conduct that could materially affect their ability to perform their contractual obligations to Valvoline or even result in its being held liable for such conduct. Violations of the FCPA, OFAC restrictions or other export control, anti-corruption, anti-money-laundering and anti-terrorism laws or regulations may result in severe criminal or civil sanctions, and Valvoline may be subject to other liabilities, which could have a material adverse effect on its business, financial condition, cash flows and results of operations.

Imposition of new taxes, disagreements with tax authorities or additional tax liabilities could adversely affect Valvoline's business, financial condition, reputation or results of operations.

Valvoline's products are made, manufactured, distributed or sold in approximately 140 countries and territories. As such, Valvoline is subject to a myriad of tax laws and regulations applicable in those countries and territories, as well as those of the United States and its various state and local governments. Economic and political pressure to increase tax revenues in jurisdictions where Valvoline operates or does business, or the adoption of new or reformed tax regulations, may make resolving tax disputes more difficult, and the final resolution of tax audits and any related litigation may differ from historical provisions and accruals resulting in an adverse impact on Valvoline's business, financial condition, reputation or results of operations. In addition to tax reform being considered in the United States, many other countries are actively considering changes to existing tax laws. Changes in how United States multinational corporations are taxed on earnings, including changes to currently enacted tax rates, could adversely affect Valvoline's business, financial condition or results of operations. There exists the potential for comprehensive tax reform in the United States that may significantly change the tax rules applicable to U.S. domiciled corporations. Valvoline cannot assess what the overall effect of such potential legislation could be on its results of operations or cash flows.

Valvoline's substantial global operations subject it to risks of doing business in foreign countries, which could adversely affect its business, financial condition and results of operations.

Sales from Valvoline's International business segment accounted for 26% of its sales for fiscal 2017. Valvoline expects sales from international markets to continue to represent an even larger portion of its sales in the future. Also, a significant portion of Valvoline's manufacturing capacity is located outside of the United States. Accordingly, its business is subject to risks related to the differing legal, political, cultural, social and regulatory requirements and economic conditions of many jurisdictions.

The global nature of Valvoline's business presents difficulties in hiring and maintaining a workforce in certain countries. Fluctuations in exchange rates may affect product demand and may adversely affect the profitability in U.S. dollars of products and services provided in foreign countries. In addition, foreign countries may impose additional withholding taxes or otherwise tax Valvoline's foreign income, or adopt other restrictions on foreign trade or investment, including currency exchange controls. The imposition of tariffs is also a risk that could impair Valvoline's financial performance. In addition, joint ventures, particularly Valvoline's existing joint ventures with Cummins in India and China, are an important part of its growth strategy internationally. If Valvoline's relationship with one of its joint venture partners were to deteriorate, it could negatively impact Valvoline's ability to achieve its growth goals internationally.

Certain legal and political risks are also inherent in the operation of a company with Valvoline's global scope. For example, it may be more difficult for Valvoline to enforce its agreements or collect receivables through foreign legal systems. There is a risk that foreign governments may nationalize private enterprises in certain countries where Valvoline operates. Terrorist activities and the response to such activities may threaten Valvoline's operations. Social and cultural norms in certain countries may not support compliance with Valvoline's corporate policies including those that require compliance with substantive laws and regulations. Also, changes in general economic and political conditions in countries where Valvoline operates are a risk to Valvoline's financial performance and future growth. For example, Valvoline exited its Venezuelan joint venture in 2015 due in part to the continued lack of exchangeability between the Venezuelan bolivar and U.S. dollar and other Venezuelan regulations. In addition, in executing its global growth strategies, Valvoline has entered into several important strategic relationships with joint venture partners, such as Cummins, unaffiliated distributors, toll manufacturers and others. The need to identify financially and commercially strong partners to fill these roles who will comply with the high manufacturing and legal compliance standards Valvoline requires is a risk to Valvoline's financial performance.

As Valvoline continues to operate its business globally, its success will depend, in part, on its ability to anticipate and effectively manage these and other related risks. There can be no assurance that the consequences of these and other factors relating to Valvoline's multinational operations will not have an adverse effect on its business, financial condition or results of operations.

The competitive nature of Valvoline's markets or other factors may delay or prevent it from passing increases in raw material costs on to its customers. In addition, certain of Valvoline's suppliers may be unable to deliver products or raw materials or may withdraw from contractual arrangements. The occurrence of either event could adversely affect Valvoline's results of operations.

Rising and volatile raw material prices, especially for base oil and lubricant additives, may negatively impact Valvoline's costs, results of operations and the valuation of its inventory. Valvoline is not always able to raise prices in response to increased costs of raw materials, and its ability to pass on the costs of such price increases is dependent upon market conditions. Likewise, reductions in the valuation of Valvoline's inventory due to market volatility may not be recovered and could result in losses.

Valvoline purchases certain products and raw materials from suppliers, often pursuant to written supply contracts. If those suppliers are unable to meet Valvoline's orders in a timely manner or choose to terminate or otherwise avoid contractual arrangements, Valvoline may not be able to make alternative supply arrangements. For base oils, Valvoline's suppliers are primarily large oil producers, many of whom operate oil lubricant production and sales businesses as part of their enterprise. There are risks inherent in obtaining important raw materials from actual or potential competitors, including the risk that applicable antitrust laws may be inadequate to mitigate Valvoline’s exposure to these risks. Valvoline purchases substantially all of its lubricant additives from the following four suppliers: Afton Chemical Corporation, Chevron Oronite Company LLC, the Infineum group of companies and Lubrizol Corporation. Because the industry is characterized by a limited number of lubricant additives suppliers, there are a limited number of alternative suppliers with whom Valvoline could transact in the event of a disruption to its existing supply relationships; for example, due to disruptions to its suppliers' operations caused by natural disasters or severe weather conditions. The inability of Valvoline’s suppliers to meet its supply demands could also have a material adverse effect on its business.

Also, domestic and global government regulations related to the manufacture or transport of certain raw materials may impede Valvoline’s ability to obtain those raw materials on commercially reasonable terms. If Valvoline is unable to obtain and retain qualified suppliers under commercially acceptable terms, its ability to manufacture and deliver products in a timely, competitive and profitable manner or grow its business successfully could be adversely affected.

Valvoline may be unable to execute its growth strategy, and acquisitions, joint ventures, strategic alliances and investments could result in operating difficulties, dilution and other harmful consequences that may adversely impact Valvoline’s business and results of operations.

Acquisitions, particularly for Valvoline’s VIOC business, and building strategic alliances for distribution and manufacturing, particularly in international markets, including through joint venture partnerships, product distribution and toll manufacturing arrangements, are important elements of its overall growth strategy. Valvoline expects to continue to evaluate and enter into discussions regarding a wide array of potential strategic transactions, and to continue to grow its VIOC business organically and through acquisitions. An inability to execute these plans could have a material adverse impact on Valvoline’s financial condition and results of operations. In addition, the process of integrating an acquired company, business, or product may create unforeseen operating difficulties or expenditures. The areas where Valvoline faces risks include:

- the possible inability to fully execute plans to add stores to Valvoline's VIOC network, due to lack of desirable real estate sites, regulatory or municipal hurdles, a lack of viable acquisition targets, or other factors;
- diversion of management’s time and attention from operating Valvoline’s business to acquisition integration challenges;
- failure to successfully grow the acquired business or product lines;
- inability to implement adequate controls, procedures and policies at the acquired company;
- integration of the acquired company’s accounting, human resources and other administrative systems, and coordination of product, engineering and sales and marketing functions;
- transition of operations, users and customers onto Valvoline’s existing platforms;
- reliance on the expertise of Valvoline’s strategic partners with respect to market development, sales, local regulatory compliance and other operational matters;
- failure to obtain required approvals on a timely basis, if at all, from governmental authorities, or conditions placed upon approval under competition and antitrust laws which could, among other things, delay or prevent Valvoline from completing a transaction, or otherwise restrict its ability to realize the expected financial or strategic goals of an acquisition;
- in the case of foreign acquisitions, the need to integrate operations across different cultures and languages and to address economic, currency, political and regulatory risks associated with specific countries;
- cultural challenges associated with integrating employees from the acquired company into Valvoline’s organization, and retention of employees from the companies that Valvoline acquires;
- liability for, or reputational harm from, activities of the acquired company before the acquisition or from Valvoline’s strategic partners; and
- litigation or other claims in connection with the acquired company, including claims from terminated employees, customers, former security holders or other third parties.

Valvoline’s failure to address these risks or other problems encountered in connection with its past or future acquisitions, investments or strategic alliances could cause Valvoline to fail to realize the anticipated benefits of such acquisitions, investments or strategic alliances, incur unanticipated liabilities and harm Valvoline’s business generally.

Valvoline’s acquisitions, investments and strategic alliances could also result in dilutive issuances of its equity securities, the incurrence of debt, contingent liabilities or amortization expenses, impairment of goodwill or purchased long-lived assets and restructuring charges, any of which could harm its financial condition, results of operations and cash flows. Also, the anticipated benefits of Valvoline’s acquisitions may not be realized. Valvoline’s balance sheet includes goodwill primarily related to acquisitions and future acquisitions may result in Valvoline’s recognition of additional goodwill. The impairment of a significant portion of this goodwill would negatively affect its financial results.

Valvoline shares in ownership of joint ventures, which may limit its ability to manage third-party risks associated with these projects.

For financial or strategic reasons, Valvoline conducts a portion of its business through joint ventures. In these joint ventures, Valvoline shares influence over the operation of the joint venture and its assets. Therefore, joint ventures may involve risks such as the possibility that a co-venturer in an investment might become bankrupt, be unable to meet its capital contribution obligations, have economic or business interests or goals that are inconsistent with Valvoline's business interests or goals, or take actions that are contrary to Valvoline's direction or to applicable laws and regulations. In addition, joint venture partners could take actions binding on the joint venture without Valvoline's consent, or Valvoline may be unable to take action without the concurrence of its joint venture partners. Consequently, actions by the joint venture, co-venturer or other third-party could expose Valvoline to claims for damages, financial penalties and reputational harm, any of which could have an adverse effect on its business and operations. Although joint ventures may generate positive cash flow, in some cases they may be unable or unwilling to distribute that cash to the joint venture partners.

The business model for Valvoline's VIOC business, including its dependence on franchised oil change centers, presents a number of risks.

VIOC is made up of a nationwide network of both company-owned and franchised stores. Valvoline's success relies in part on the financial success and cooperation of its franchisees. However, Valvoline has limited influence over their operations. Valvoline's franchisees manage their businesses independently and are responsible for the day-to-day operations of approximately 66% of VIOC stores as of September 30, 2017. Valvoline's revenue and income growth from franchised stores are largely dependent on the ability of its franchisees to grow their sales. Valvoline's franchisees may have limited or no sales growth, and Valvoline's revenues and margins could be negatively affected as a result. In addition, if sales or business performance trends worsen for franchisees, their financial results may deteriorate, which could result in, among other things, VIOC store closures, delayed or reduced payments to Valvoline and reduced growth in the number of VIOC stores.

Valvoline's success also depends on the willingness and ability of its independent franchisees to implement major initiatives, which may require additional investment by them, and remain aligned with Valvoline on operating, promotional and capital-intensive reinvestment plans. The ability of Valvoline's franchisees to contribute to the achievement of Valvoline's overall plans is dependent in large part on the availability of funding to its franchisees at reasonable interest rates and may be negatively impacted by the financial markets in general or the creditworthiness of individual franchisees.

Valvoline's operating performance and reputation could also be negatively impacted if its independent franchisees experience service failures or otherwise operate in a manner that projects a brand image inconsistent with Valvoline's values, particularly if Valvoline's contractual and other rights and remedies are limited, costly to exercise or subject to litigation. If Valvoline's franchisees do not successfully operate VIOC stores in a manner consistent with Valvoline's standards, Valvoline's brand, image and reputation could be harmed, which in turn could negatively impact its business and operating results.

The ownership mix of company-owned and franchised VIOC stores also affects Valvoline's results and financial condition. The decision to own stores or to operate under franchise or license agreements is driven by a large number of factors with a complex and changing interrelationship. The size of Valvoline's largest franchisees creates additional risk due to Valvoline's dependence on their particular growth, financial and operating performance and cooperation and alignment with Valvoline's initiatives.

Valvoline is the primary supplier of products to all VIOC stores. The growth and performance of Valvoline's lubricants and other product lines depends in large part on the performance of its VIOC business, potentially amplifying the negative effect of the other risks related to the VIOC business model. Poor performance by VIOC stores would negatively impact revenues and income for other Valvoline reporting segments.

Adverse developments in the global economy or in regional economies and potential disruptions of financial markets could negatively impact Valvoline's customers and suppliers, and therefore have a negative impact on its results of operations.

A global or regional economic downturn may reduce customer demand or inhibit Valvoline's ability to produce and sell products. Valvoline's business and operating results are sensitive to global and regional economic downturns, credit market tightness, declining consumer and business confidence, fluctuating commodity prices, volatile exchange rates, changes in interest rates, sovereign debt defaults and other challenges, including those related to international sanctions and acts of aggression or threatened aggression that can affect the global economy. With 74% of Valvoline's sales coming from North America in fiscal 2017, Valvoline is particularly sensitive to the risk of an economic slowdown or downturn in that region. In the event of adverse developments or stagnation in the economy or financial markets, Valvoline's customers may experience deterioration of their businesses, reduced demand for their products, cash flow shortages and difficulty obtaining financing. As a result, existing or potential customers might delay or cancel plans to purchase products and may not be able to fulfill their obligations to Valvoline in a timely fashion. Further, suppliers may experience similar conditions, which could impact their ability to fulfill their obligations to Valvoline. A weakening or reversal of the global economy or a substantial part of it could negatively impact Valvoline’s business, results of operations, financial condition and ability to grow.

Valvoline uses information technology systems to conduct business, and these systems are at risk from cyber security threats.

Despite steps Valvoline takes to mitigate or eliminate them, cyber-security threats to its systems are increasing and becoming more advanced and breaches could occur as a result of the activity of hackers, employee error or employee misconduct. A breach of Valvoline’s information technology systems could lead to the loss and destruction of trade secrets, confidential information, proprietary data, intellectual property, customer and supplier data and employee personal information, and could disrupt business operations which could adversely affect Valvoline’s relationships with business partners and harm its brands, reputation and financial results. Valvoline’s customer data may include names, addresses, phone numbers, email addresses and payment account information, among other information. Depending on the nature of the customer data that is compromised, Valvoline may also have obligations to notify users, law enforcement or payment companies about the incident and may need to provide some form of remedy, such as refunds for the individuals affected by the incident.

Valvoline may fail to adequately protect its intellectual property rights or may be accused of infringing the intellectual property rights of third parties.

Valvoline relies heavily upon its trademarks, domain names and logos to market its brands and to build and maintain brand loyalty and recognition, as well as upon trade secrets. Valvoline also relies on a combination of laws and contractual restrictions with employees, customers, suppliers, affiliates and others, to establish and protect its various intellectual property rights. For example, Valvoline has generally registered and continues to register and renew, or secure by contract where appropriate, trademarks and service marks as they are developed and used, and reserve, register and renew domain names as appropriate. Effective trademark protection may not be available or may not be sought in every country in which Valvoline’s products are made available and contractual disputes may affect the use of marks governed by private contract. Similarly, not every variation of a domain name may be available or be registered, even if available.

Valvoline generally seeks to apply for patents or for other similar statutory protections as and if it deems appropriate, based on then-current facts and circumstances, and will continue to do so in the future. No assurances can be given that any patent application Valvoline has filed or will file will result in a patent being issued, or that any existing or future patents will afford adequate or meaningful protection against competitors or against similar technologies. In addition, no assurances can be given that third parties will not create new products or methods that achieve similar results without infringing upon patents Valvoline owns.

Despite these measures, Valvoline’s intellectual property rights may still not be protected in a meaningful manner, challenges to contractual rights could arise or third parties could copy or otherwise obtain and use Valvoline’s intellectual property without authorization. The occurrence of any of these events could result in the erosion of Valvoline’s brands and limit its ability to market its brands using its various trademarks, as well as impede its ability to effectively compete against competitors with similar products and services, any of which could adversely affect its business, financial condition and results of operations.

From time to time, Valvoline has been subject to legal proceedings and claims, including claims of alleged infringement of trademarks, copyrights, patents and other intellectual property rights held by third parties. In the future, third parties may sue Valvoline for alleged infringement of their proprietary or intellectual property rights. Valvoline may not be aware of whether its products do or will infringe existing or future patents or the intellectual property rights of others. In addition, litigation may be necessary to enforce Valvoline’s intellectual property rights, protect its trade secrets or determine the validity and scope of proprietary rights claimed by others. Any litigation of this nature, regardless of outcome or merit, could result in substantial costs and diversion of management and technical resources, any of which could adversely affect Valvoline’s business, financial condition and results of operations.

Valvoline’s pension and other postretirement benefit plan obligations are currently underfunded, and Valvoline may have to make significant cash payments to some or all of these plans, which would reduce the cash available for its businesses.

In connection with Valvoline’s separation from Ashland, Valvoline assumed certain of Ashland’s historical pension and other postretirement benefit plans and related liabilities. The funded status of Valvoline's pension plans is dependent upon many factors, including returns on invested assets, the level of certain market interest rates and the discount rate used to determine pension obligations. Though Valvoline has taken a number of actions in fiscal 2017 to reduce the risk and volatility associated with the most significant of these plans, the U.S. qualified plan, changing market conditions or laws and regulations could require material increases in our expected cash contributions to our pension plans in future years. Specifically, unfavorable returns on plan assets or unfavorable changes in applicable laws or regulations could materially change the timing and amount of required plan funding, which would reduce the cash available for Valvoline’s businesses. In addition, a decrease in the discount rate used to determine pension obligations could result in an increase in the valuation of pension obligations, which could affect the reported funded status of Valvoline’s pension plans and future contributions. Similarly, an increase in discount rates could increase the periodic pension cost in subsequent fiscal years. Valvoline’s policy to recognize changes in the fair value of the pension assets and liabilities annually and as otherwise required through mark to market accounting could result in volatility in Valvoline's results of operations, which could be material. In addition, Valvoline's pension and other postretirement benefit plan obligations are currently underfunded, and Valvoline may have to make significant cash payments to some or all of these plans, which would reduce the cash available for its businesses.

Under the Employee Retirement Income Security Act of 1974, as amended, the Pension Benefit Guaranty Corporation ("PBGC") has the authority to terminate an underfunded tax-qualified pension plan under limited circumstances. In the event Valvoline's tax-qualified pension plans are terminated by the PBGC, Valvoline could be liable to the PBGC for some portion of the underfunded amount.

Business disruptions from natural, operational and other catastrophic risks could seriously harm Valvoline's operations and financial performance. In addition, a catastrophic event at one of Valvoline's facilities or involving its products or employees could lead to liabilities that could further impair its operations and financial performance.

Business disruptions, including those related to operating hazards inherent in the production of lubricants, natural disasters, severe weather conditions, supply or logistics disruptions, increasing costs for energy, temporary plant and/or power outages, information technology systems and network disruptions, cyber-security breaches, terrorist attacks, armed conflicts, war, pandemic diseases, fires, floods or other catastrophic events, could seriously harm Valvoline's operations, as well as the operations of Valvoline's customers and suppliers, and may adversely impact Valvoline's financial performance. Although it is impossible to predict the occurrence or consequences of any such events, they could result in reduced demand for Valvoline's products, make it difficult or impossible for Valvoline to manufacture its products or deliver products and services to its customers or to receive raw materials from suppliers, may lead to increased costs of raw materials, or create delays and inefficiencies in the supply chain. In addition to leading to a serious disruption of Valvoline's businesses, a catastrophic event at one of Valvoline's facilities or involving its products or employees could lead to substantial legal liability to or claims by parties allegedly harmed by the event.

While Valvoline maintains business continuity plans that are intended to allow it to continue operations or mitigate the effects of events that could disrupt its business, Valvoline cannot provide assurances that its plans would fully protect it from all such events. In addition, insurance maintained by Valvoline to protect against property damage, loss of business and other related consequences resulting from catastrophic events is subject to coverage limitations, depending on the nature of the risk insured. This insurance may not be sufficient to cover all of Valvoline's damages or damages to others in the event of a catastrophe. In addition, insurance related to these types of risks may not be available now or, if available, may not be available in the future at commercially reasonable rates.

Valvoline has incurred, and will continue to incur, costs as a result of environmental, health and safety ("EHS"), and hazardous substances liabilities and related compliance requirements. These costs could adversely impact Valvoline's cash flow, its results of operations or financial condition.

Valvoline is subject to extensive federal, state, local and foreign laws, regulations, rules and ordinances relating to pollution, protection of the environment and human health and safety, as well as the generation, storage, handling, treatment, disposal and remediation of hazardous substances and waste materials. Valvoline has incurred, and will continue to incur, costs and capital expenditures to comply with these laws and regulations.

EHS regulations change frequently, and such regulations and their enforcement have tended to become more stringent over time. Accordingly, changes in EHS laws and regulations and the enforcement of such laws and regulations could interrupt Valvoline's operations, require modifications to its facilities or cause it to incur significant liabilities, costs or losses that could adversely affect its profitability. Actual or alleged violations of EHS laws and regulations could result in restrictions or prohibitions on plant operations as well as substantial damages, penalties, fines, civil or criminal sanctions and remediation costs.

Valvoline's business involves the production, storage and transportation of hazardous substances. Under some environmental laws, Valvoline may be strictly liable and/or jointly and severally liable for environmental damages caused by releases of hazardous substances and waste materials into the environment. For instance, under relevant laws and regulations Valvoline may be deemed liable for soil and/or groundwater contamination at sites it currently owns and/or operates even though the contamination was caused by a third party such as a former owner or operator, and at sites it formerly owned and operated if the release of hazardous substances or waste materials was caused by it or by a third party during the period it owned and/or operated the site. Valvoline also may be deemed liable for soil and/or groundwater contamination at sites to which it sent hazardous wastes for treatment or disposal, notwithstanding that the original treatment or disposal activity accorded with all applicable regulatory requirements.

Valvoline is responsible for, and has financial exposure to, liabilities from pending and threatened claims which could adversely impact its results of operations and cash flow.

There are various claims, lawsuits and administrative proceedings pending or threatened against Valvoline. Such actions are with respect to commercial matters, false advertising, product liability, toxic tort liability and other matters that seek remedies or damages, some of which are for substantial amounts. While these actions are being contested, their outcome is not predictable. Valvoline's results could be adversely affected by financial exposure to these liabilities. Further, as a potential successor to Ashland, Valvoline may be subject to a consent order dated January 5, 1998 with the U.S. Federal Trade Commission arising out of charges that ads for Valvoline's TM8 Engine Treatment product contained claims that were unsubstantiated. Under the consent order, which expires January 5, 2018, Valvoline may not make unsubstantiated claims about the performance or attributes of any engine treatment in the future or misrepresent results of tests or studies used to support Valvoline's claims. Valvoline has agreed to indemnify Ashland for any liability arising out of the consent order. Valvoline could also be subject to additional legal proceedings in the future that may adversely affect its business, including administrative proceedings, class actions, employment and personal injury claims, disputes with current or former suppliers, claims by current or former franchisees and intellectual property claims.

Insurance maintained by Valvoline to protect against claims for damages alleged by third parties is subject to coverage limitations, depending on the nature of the risk insured. This insurance may not be sufficient to cover all of Valvoline's liabilities to others. In addition, insurance related to these types of risks may not be available now or, if available, may not be available in the future at commercially reasonable rates.

Valvoline's substantial indebtedness may adversely affect its business, results of operations and financial condition.

Valvoline has substantial indebtedness and financial obligations. As of November 10, 2017, Valvoline had outstanding indebtedness of approximately $1.1 billion. In addition, Valvoline has a senior secured revolving credit facility with a borrowing capacity of $436 million. While Valvoline does not currently have any borrowings outstanding under the senior secured revolving credit facility, it may incur indebtedness under this arrangement in the future.

Valvoline may incur substantial additional debt from time to time to finance working capital, capital expenditures, investments or acquisitions, or for other purposes. Valvoline's substantial indebtedness could adversely affect its business, results of operations and financial condition by, among other things:

- requiring Valvoline to dedicate a substantial portion of its cash flow from operations to pay principal and interest on its debt, which would reduce the availability of its cash flow to fund working capital, capital expenditures, acquisitions, execution of its growth strategy and other general corporate purposes;
- limiting Valvoline's ability to borrow additional amounts to fund working capital, capital expenditures, acquisitions, debt service requirements, execution of its growth strategy and other purposes;
- making Valvoline more vulnerable to adverse changes in general economic, industry and regulatory conditions and in its business by limiting its flexibility in planning for, and making it more difficult for it to react quickly to, changing conditions;
- placing Valvoline at a competitive disadvantage compared with its competitors that have less debt and lower debt service requirements;
- making Valvoline more vulnerable to increases in interest rates since some of its indebtedness is subject to variable rates of interest; and
- making it more difficult for Valvoline to satisfy its financial obligations.

In addition, Valvoline may not be able to generate sufficient cash flow from its operations to repay its indebtedness when it becomes due and to meet its other cash needs. If Valvoline is not able to pay its debts as they become due, it could be in default under the terms of its indebtedness. Valvoline might also be required to pursue one or more alternative strategies to repay indebtedness, such as selling assets, refinancing or restructuring its indebtedness or selling additional debt or equity securities. Valvoline may not be able to refinance its debt or sell additional debt or equity securities or its assets on favorable terms, if at all, and if it must sell its assets, it may negatively affect Valvoline's ability to generate revenues.

If Valvoline is unable to access the capital markets or obtain bank credit, its financial position, growth plans, liquidity and results of operations could be negatively impacted.

Valvoline is dependent on a stable, liquid, and well-functioning financial system to fund its operations and capital investments. In particular, Valvoline may rely on the public and private debt and equity markets to fund portions of its capital investments and the commercial paper market and bank credit facilities to fund seasonal needs for working capital. Valvoline's access to these markets depends on multiple factors including the condition of the capital markets, Valvoline's operating performance and credit ratings. If rating agencies lower Valvoline's credit ratings, it could adversely impact Valvoline's ability to access the debt markets, its cost of funds and other terms for new debt issuances. Each of the credit rating agencies reviews its rating periodically, and there is no guarantee Valvoline's current credit rating will remain the same.

Valvoline is subject to payment-related risks for company-owned and franchised VIOC stores.

At company-owned and franchised VIOC stores, Valvoline accepts a variety of payment methods, including credit cards and debit cards. Accordingly, Valvoline is, and will continue to be, subject to significant and evolving regulations and compliance requirements, including obligations to implement enhanced authentication processes that could result in increased costs, reduce the ease of use of certain payment methods and expand liability for Valvoline. For certain payment methods, including credit and debit cards, Valvoline pays interchange and other fees, which may increase over time. Valvoline relies on independent service providers for payment processing, including credit and debit cards. If these independent service providers become unwilling or unable to provide these services to Valvoline, or if the cost of using these providers increases, Valvoline's business could be harmed. Valvoline is also subject to payment card association operating rules, including data security rules, certification requirements and rules governing electronic funds transfers, which could change or be reinterpreted to make it difficult or impossible for Valvoline to comply. If Valvoline fails to comply with these rules or requirements, or if its data security systems are breached or compromised, Valvoline may be liable for losses incurred by card issuing banks or consumers, subject to fines and higher transaction fees, lose its ability to accept credit and debit card payments from its customers or process electronic fund transfers or facilitate other types of payments and its brand, business and results of operations could be significantly harmed.

Failure to achieve and maintain effective internal controls in accordance with Section 404 of Sarbanes- Oxley could have a material adverse effect on Valvoline's business and stock price.

As a public company, Valvoline is subject to Section 404 of the Sarbanes-Oxley Act of 2002 ("Sarbanes-Oxley"), which, beginning with this Annual Report on Form 10-K, requires annual assessments by Valvoline's management of the effectiveness of Valvoline's internal control over financial reporting and annual reports by Valvoline's independent registered public accounting firm that address the effectiveness of internal control over financial reporting. During the course of annual testing, Valvoline may identify deficiencies or material weaknesses which it may not be able to remediate in time to meet its deadline for compliance with Section 404. Testing and maintaining internal control can divert management's attention from other matters that are important to the operation of Valvoline's business. Valvoline may not be able to conclude on an ongoing basis that it has effective internal control over financial reporting in accordance with Section 404 or Valvoline's independent registered public accounting firm may not be able or willing to issue an unqualified report on the effectiveness of Valvoline's internal control over financial reporting. If Valvoline concludes that its internal control over financial reporting is not effective in any annual assessment, Valvoline cannot be certain as to the timing of completion of its evaluation, testing and remedial actions or their effect on its operations. If either Valvoline is unable to conclude that it has effective internal control over financial reporting or its independent auditors are unable to provide it with an unqualified report as required by Section 404 in any annual assessment, then investors could lose confidence in Valvoline's reported financial information, which could have a negative effect on the trading price of Valvoline's stock.

Risks Related to Valvoline's Separation from Ashland

The Distribution could result in significant tax liability to Ashland, and in certain circumstances, Valvoline could be required to indemnify Ashland for material taxes pursuant to indemnification obligations under the Tax Matters Agreement.

Ashland obtained a written opinion of counsel to the effect that the Distribution should qualify for non-recognition of gain and loss under Section 355 of the Internal Revenue Code of 1986, as amended (the "Code"). The opinion of counsel does not address any U.S. state or local or foreign tax consequences of the Distribution. The opinion assumes that the Distribution is completed according to the terms of the Separation Agreement entered into between Ashland and Valvoline ("Separation Agreement") and relies on the facts as described in the Separation Agreement, the Tax Matters Agreement, other ancillary agreements, the information statement distributed to Ashland's shareholders in connection with the Distribution and a number of other documents. In addition, the opinion is based on certain representations as to factual matters from, and certain covenants by, Ashland and Valvoline. The opinion cannot be relied on if any of the assumptions, representations or covenants is incorrect, incomplete or inaccurate or is violated in any material respect.

The opinion of counsel is not binding on the Internal Revenue Service (the "IRS") or the courts, and thus there can be no assurance that the IRS or a court will not take a contrary position. Ashland has not requested, and does not intend to request, a ruling from the IRS regarding the U.S. federal income tax consequences of the Distribution.

If the Distribution were determined not to qualify for non-recognition of gain and loss, then Ashland would recognize a gain as if it had sold its Valvoline common stock in a taxable transaction in an amount up to the fair market value of the common stock it distributed in the Distribution. In addition, certain reorganization transactions undertaken in connection with the separation and the Distribution could be determined to be taxable, which could result in additional taxable gain. Under certain circumstances set forth in the Tax Matters Agreement, Valvoline could have a substantial indemnification obligation to Ashland with respect to the tax associated with some or all of such gain, which could have a material adverse impact on Valvoline's financial condition.

Valvoline could have an indemnification obligation to Ashland if events or actions subsequent to the Distribution cause the Distribution to be taxable.

If, due to breaches of covenants that Valvoline has agreed to in connection with the Separation Agreement or the Distribution, it were determined that the Distribution did not qualify for non-recognition of gain and loss, Valvoline could be required to indemnify Ashland for the resulting taxes (and reasonable expenses). In addition, Section 355(e) of the Code generally creates a presumption that the Distribution would be taxable to Ashland, but not to its shareholders, if Valvoline or its shareholders were to engage in transactions that result in a 50% or greater change (by vote or value) in the ownership of Valvoline's stock during the four-year period beginning on the date that begins two years before the date of the Distribution, unless it were established that such transactions and the Distribution were not part of a plan or series of related transactions. If the Distribution were taxable for U.S. federal income tax purposes to Ashland due to a breach of Valvoline's covenants or a 50% or greater change in the ownership of Valvoline's stock during the aforementioned four-year period, Ashland would recognize gain as if it had sold Valvoline common stock in a taxable transaction in an amount up to the fair market value of the stock held by it immediately before the Distribution, and Valvoline generally would be required to indemnify Ashland for the tax on such gain and related expenses, as well as any additional gain in connection with certain reorganization transactions undertaken to effect the separation and the Distribution. Any such obligation could have a material impact on Valvoline's operations.

Valvoline has agreed to numerous restrictions to preserve the tax-free nature of the Distribution, which may reduce its strategic and operating flexibility.

Valvoline has agreed in the Tax Matters Agreement to covenants and indemnification obligations designed to preserve the tax-free nature of the Distribution. These covenants and indemnification obligations may limit Valvoline's ability to pursue strategic transactions or engage in new businesses or other transactions that might be beneficial and could discourage or delay a strategic transaction that its shareholders may consider favorable.

Valvoline will have joint and several liability with Ashland for the consolidated U.S. federal income taxes of the Ashland consolidated group for the taxable periods in which Valvoline was part of the Ashland consolidated group. In addition, Valvoline has agreed to indemnify Ashland for certain pre-IPO U.S. taxes that arise on audit and are directly attributable to neither the Valvoline business nor Ashland's specialty ingredients and performance materials businesses (collectively, the "Chemicals business").

Valvoline and Ashland as well as their respective subsidiaries were part of U.S. federal consolidated group tax returns and certain combined or similar group tax returns (together, "Combined Tax Returns") through the date of the Distribution. Therefore, Valvoline has joint and several liability with Ashland to the respective taxing authorities for the Combined Tax Returns for the periods up to and including the date of the Distribution.

Pursuant to the Tax Matters Agreement, Valvoline is required to indemnify Ashland for: (a) certain U.S. federal, state or local taxes of Ashland and/or its subsidiaries for any tax period ending on or prior to the Distribution that arise on audit or examination and are (i) directly attributable to Valvoline or (ii) prior to the IPO that arise on audit or examination and are directly attributable to neither the Valvoline business nor the Chemicals business; and (b) certain foreign taxes of Ashland and/or its subsidiaries for any tax period ending on or prior to the Distribution that arise on audit or examination and are directly attributable to Valvoline.

The Tax Matters Agreement also requires Valvoline to indemnify Ashland for any taxes (and reasonable expenses) resulting from the failure of the Distribution to qualify for non-recognition of gain and loss or certain reorganization transactions related to the separation or the IPO and Distribution to qualify for their intended tax treatment ("Transaction Taxes"), where the taxes result from (1) breaches of representations or covenants that Valvoline made or agreed to in connection with these transactions, (2) the application of certain provisions of U.S. federal income tax law to the Distribution with respect to acquisitions of Valvoline common stock or (3) any other actions that Valvoline knows or reasonably should expect would give rise to such taxes.

The Tax Matters Agreement also requires Valvoline to indemnify Ashland for a portion of certain other taxes arising from the separation allocated to Valvoline generally based on Valvoline's market capitalization relative to the market capitalization of Ashland at the time of the Distribution.

Valvoline has only been a stand-alone public company since September 2016, and its financial results are not necessarily representative of the results it would have achieved as a stand-alone public company prior to September 2016 and may not be a reliable indicator of its future results.

The historical financial information Valvoline has included in this Annual Report on Form 10-K include certain expenses of Ashland that were allocated to Valvoline as an unincorporated business unit of Ashland for corporate functions, which included treasury, legal, accounting, insurance, information technology, payroll administration, human resources, stock incentive plans and other services. Valvoline believes the assumptions underlying the consolidated financial statements, including the assumptions regarding allocated expenses, reasonably reflect the utilization of services provided to or the benefit received during those periods. However, these shared expenses may not represent what Valvoline's financial position, results of operations or cash flows would have been had it operated autonomously or independently from Ashland during those periods. Actual costs that would have been incurred if Valvoline had been a stand-alone company would depend on multiple factors, including organizational structure and strategic decisions in various areas, such as information technology and infrastructure.

In addition, the historical financial information Valvoline has included in this Annual Report on Form 10-K does not reflect what its financial position, results of operations or cash flows would have been had it been a stand-alone entity during the historical periods presented, or what its financial position, results of operations or cash flows will be in the future as an independent entity.

Valvoline's ability to operate its business effectively may suffer if it is unable to cost-effectively establish its own administrative and other support functions in order to operate as a stand-alone company after the expiration of its shared services and other intercompany agreements with Ashland.

As a business segment of Ashland, Valvoline relied on administrative and other resources of Ashland, including information technology, accounting, finance, human resources and legal, to operate Valvoline's business. In connection with the IPO, Valvoline entered into various service agreements to retain the ability for specified periods to use these Ashland resources. These services may not be provided at the same level as when Valvoline was a business segment within Ashland, and Valvoline may not be able to obtain the same benefits that it received prior to the IPO. These services may not be sufficient to meet Valvoline's needs, and after Valvoline's agreements with Ashland expire (which will generally occur within 24 months following the closing of the IPO), Valvoline may not be able to replace these services at all or obtain these services at prices and on terms as favorable as it currently has with Ashland. Valvoline will need to continue to create its own administrative and other support systems or contract with third parties to replace Ashland's systems. In addition, Valvoline has received informal support from Ashland which may not be addressed in the agreements it has entered into with Ashland, and the level of this informal support has not been available after the Distribution.

Ashland has agreed to indemnify Valvoline for certain liabilities. However, there can be no assurance that the indemnity will be sufficient to insure Valvoline against the full amount of such liabilities, or that Ashland's ability to satisfy its indemnification obligation will not be impaired in the future.

Pursuant to the Separation Agreement and certain other agreements with Ashland, Ashland has agreed to indemnify Valvoline for certain liabilities. However, third parties could also seek to hold Valvoline responsible for any of the liabilities that Ashland has agreed to retain, and there can be no assurance that the indemnity from Ashland will be sufficient to protect Valvoline against the full amount of such liabilities, or that Ashland will be able to fully satisfy its indemnification obligations in the future. Even if Valvoline ultimately succeeded in recovering from Ashland any amounts for which Valvoline is held liable, Valvoline may be temporarily required to bear these losses. Each of these risks could negatively affect Valvoline's business, financial position, results of operations and cash flows.

Valvoline's inability to resolve favorably any disputes that arise between Valvoline and Ashland with respect to their past and ongoing relationships may adversely affect its operating results.

Disputes may arise between Ashland and Valvoline in a number of areas relating to their past and ongoing relationships, including:

- labor, tax, employee benefit, indemnification and other matters arising from Valvoline's separation from Ashland;
- employee retention and recruiting;
- business combinations involving Valvoline; and
- the nature, quality and pricing of services that Valvoline and Ashland have agreed to provide each other.

Valvoline may not be able to resolve potential conflicts, and even if it does, the resolution may not be favorable. The agreements Valvoline entered into with Ashland may be amended upon agreement between the parties.

Valvoline may have received better terms from unaffiliated third parties than the terms it received in the agreements it entered into with Ashland.

The agreements Valvoline entered into with Ashland in connection with the separation, including the Separation Agreement, the Tax Matters Agreement, the Employee Matters Agreement, the Transition Services Agreement, the Reverse Transition Services Agreement, a shared environmental liabilities agreement and certain commercial agreements, were prepared in the context of the separation while Valvoline was still a wholly owned subsidiary of Ashland. Accordingly, during the period in which the terms of those agreements were prepared, Valvoline did not have an independent board of directors or a management team that was independent of Ashland. As a result, Valvoline may have received better terms from negotiations between unaffiliated third parties than the terms of those agreements.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Valvoline’s corporate headquarters is located in Lexington, Kentucky. Valvoline owns or leases approximately 40 facilities throughout North America, Europe, Australia, and Asia that comprise over 2 million square feet of blending, packaging, distribution, warehouse, research and development and office space. In addition, Valvoline owns or leases the property associated with 384 quick lubes stores under the VIOC brand throughout the United States. The properties leased by Valvoline have expiration dates ranging from less than one year to more than 25 years (including certain renewal options).

The following table provides a summary of Valvoline’s principal owned and leased facilities:

Location	Approx. Area (Sq. Ft.)	Principal Use
Lexington, Kentucky	187,000	Corporate Headquarters and Research & Development
West Chester, Ohio	320,000	Warehouse and Distribution
Dordrecht, Netherlands	150,000	Blending, Packaging & Warehouse
Leetsdale, Pennsylvania	125,000	Warehouse & Distribution
Cincinnati, Ohio	125,000	Blending, Packaging & Warehouse
Santa Fe Springs, California	100,000	Blending, Packaging & Warehouse
Willow Springs, Illinois	95,000	Blending, Packaging & Warehouse
Freedom (Rochester), Pennsylvania	90,000	Blending, Packaging & Warehouse
Deer Park, Texas	87,000	Blending, Packaging & Warehouse
St. Louis, Missouri	78,000	Blending, Packaging & Warehouse
Mississauga, Canada	63,000	Blending, Packaging & Warehouse
Sydney, Australia	60,000	Blending, Packaging & Warehouse
Atlanta, Georgia	60,000	Blending, Packaging & Warehouse

In addition, throughout North America, Valvoline contracts with third parties to provide blending and packaging and warehousing and distribution services. Valvoline believes its physical properties are suitable and adequate for the Company’s business, and none of the property owned by Valvoline is subject to any major known encumbrances. Additional information regarding certain lease obligations may be found in Note 12 of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Annual Report on Form 10-K.

ITEM 3. LEGAL PROCEEDINGS

For a description of Valvoline's legal proceedings, refer to Note 15 of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Annual Report on Form 10-K.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Valvoline common stock is listed on the NYSE and trades under the symbol “VVV.” Valvoline’s common stock also has trading privileges on NASDAQ. Prior to September 23, 2016, the pricing date of the initial public offering (“IPO”), there was no public market for Valvoline’s common stock. As a result, Valvoline has not provided quarterly information with respect to the high and low prices of its common stock for the first three quarters in the fiscal year ended September 30, 2016. The following table presents the high and low per share prices for Valvoline common stock as reported on the NYSE for each quarter of fiscal 2017 and the fourth quarter of fiscal 2016 following the Company's IPO.

	High	Low
Fiscal 2016		
Fourth Quarter	$ 24.51	$ 23.00
Fiscal 2017		
First Quarter	$ 23.68	$ 18.30
Second Quarter	$ 24.98	$ 21.00
Third Quarter	$ 24.84	$ 21.91
Fourth Quarter	$ 23.87	$ 20.99

As of November 10, 2017, there were approximately 11,130 holders of Valvoline common stock.

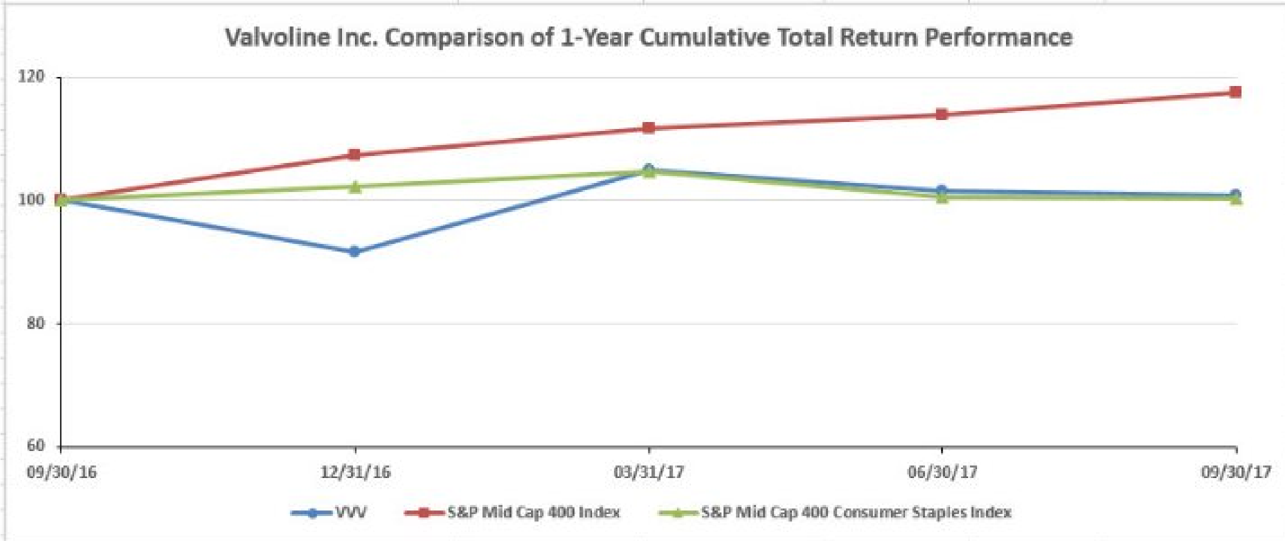
Dividend Policy

Valvoline paid quarterly cash dividends to the holders of its common stock for the year ended September 30, 2017; cash dividends paid quarterly were $0.049 per share for a total of $0.20 for the year. There were no dividends paid for the year ended September 30, 2016. Refer to Note 18 of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Annual Report on Form 10-K for additional details regarding the dividend activity for the year ended September 30, 2017.

Valvoline expects to continue to pay quarterly cash dividends to the holders of its common stock; however, the declaration and payment of dividends to holders of Valvoline common stock will be at the discretion of the Board in accordance with applicable law after taking into account various factors, including Valvoline’s financial condition, operating results, current and anticipated cash needs, cash flows, impact on Valvoline’s effective tax rate, indebtedness, legal requirements and other factors that the Board considers relevant. In addition, the instruments governing Valvoline’s indebtedness may limit its ability to pay dividends. Therefore, no assurance is given that Valvoline will pay any dividends to its stockholders, or as to the amount of any such dividends if the Board determines to do so.

Stock Performance Graph

The following graph compares the cumulative total stockholder return on a $100 investment in Valvoline common stock, the S&P Mid Cap 400 Index and the S&P Mid Cap 400 Consumer Staples Index for the period from September 30, 2016 (following the IPO) to September 30, 2017. This graph assumes an investment in the Valvoline common stock and each index were $100 on September 30, 2016 and that all dividends were reinvested.



Comparison of cumulative total returns	9/30/2016	12/31/2016	3/31/2017	6/30/2017	9/30/2017
Valvoline Inc.	$ 100	$ 92	$ 105	$ 102	$ 101
S&P Mid Cap 400 Index	$ 100	$ 107	$ 112	$ 114	$ 118
S&P Mid Cap 400 Consumer Staples Index	$ 100	$ 102	$ 105	$ 101	$ 100

Purchases of Company Common Stock

On April 24, 2017, the Company's Board of Directors approved and authorized a Share Repurchase Program, under which Valvoline may repurchase up to $150 million of the Company's common stock with the authorization through December 31, 2019. Under this program, shares may be repurchased on the open market, through Rule 10b5-1 trading plans, Rule 10b-18 repurchase programs and accelerated share acquisition programs. As of September 30, 2017, $100 million remains available for repurchase under this authorization.

Share repurchase activity during the three months ended September 30, 2017 was as follows:

Issuer Purchases of Equity Securities [(a)]				
Monthly Period	**Total Number of Shares Purchased**	**Average Price Paid per Share, including commission**	**Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs**	**Dollar Value of Shares That May Yet Be Purchased Under the Plans or Programs (in millions) [(a)]**
July 1, 2017 to July 31, 2017	—	$ —	—	$ 100
August 1, 2017 to August 31, 2017	—	$ —	—	$ 100
September 1, 2017 to September 30, 2017	—	$ —	—	$ 100
Total	—		—	$ 100

(a) Further information regarding the Company's share repurchases can be found in Note 18 of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Annual Report on Form 10-K.

ITEM 6. SELECTED FINANCIAL DATA

Valvoline Inc. and Consolidated Subsidiaries

Five-Year Selected Financial Information [a]

(In millions)	2017	2016	2015	2014	2013
	For the years ended September 30				
Summary of operations					
Sales	$ 2,084	$ 1,929	$ 1,967	$ 2,041	$ 1,996
Gross profit	$ 778	$ 761	$ 685	$ 632	$ 658
Operating income	$ 532	$ 431	$ 323	$ 264	$ 381
Net income	$ 304	$ 273	$ 196	$ 173	$ 246
Common stock information					
Basic earnings per share [b]	$ 1.49	$ 1.60	$ 1.15	$ 1.02	$ 1.45
Diluted earnings per share [b]	$ 1.49	$ 1.60	$ 1.15	$ 1.02	$ 1.45
Dividends per common share	$ 0.20	$ —	$ —	$ —	$ —
Cash flow information					
Cash flows from operating activities	$ (130)	$ 311	$ 330	$ 170	$ 273
Less: Additions to property, plant and equipment	(68)	(66)	(45)	(37)	(41)
Plus: Discretionary contributions to pension plans	394	—	—	—	—
Free cash flow [c]	$ 196	$ 245	$ 285	$ 133	$ 232

(In millions)	2017	2016	2015	2014	2013
	As of September 30				
Balance sheet information					(unaudited)
Total assets	$ 1,915	$ 1,825	$ 978	$ 1,083	$ 1,062
Long-term debt and capital lease obligations (including current portion)	$ 1,075	$ 749	$ 4	$ 4	$ 3
Stockholders' (deficit) equity	$ (117)	$ (330)	$ 617	$ 725	$ 684

Unaudited (In millions)	2017	2016	2015	2014	2013
	For the years ended September 30				
Other financial data					
Lubricant sales volume (gallons)	179.7	174.5	167.4	162.6	158.4
Company-owned same-store sales growth [d]	7.0%	6.2%	7.5%	4.5%	1.9%
Franchisee same-store sales growth [d][e]	7.5%	8.0%	7.8%	5.5%	2.2%
EBITDA [f]	$ 574	$ 468	$ 335	$ 301	$ 416
Adjusted EBITDA [f]	$ 517	$ 457	$ 421	$ 368	$ 342

(a) During the periods presented, Valvoline experienced certain changes in the composition of its assets and liabilities affecting the comparability of financial information between years. These changes include, but are not limited to, the transfer of assets and liabilities from Ashland in 2016, separation from Ashland in 2017, an IPO in 2016, establishing a stand-alone capital structure in 2016, and the impact of immediately recognizing actuarial gains and losses for defined benefit pension and other postretirement benefit plan remeasurements. During the five years ended September 30 presented above, Valvoline recognized a remeasurement gain of $68 million in 2017, a gain of $18 million in 2016, a loss of $46 million in 2015, a loss of $61 million in 2014, and a gain of $74 million in 2013.

(b) The Company corrected an immaterial error in the net earnings per share (“EPS”) calculations for periods prior to and including September 30, 2016, and the amounts included in the table above reflect the revised EPS calculations for the prior year periods. EPS was originally reported based on a weighted average common shares outstanding of 204.5 million, which reflected both the 170 million shares issued to Ashland in the reorganization as well as the 34.5 million shares issued in the IPO on September 28, 2016. EPS for the periods prior to and including September 30, 2016 have been revised based on an adjusted weighted average common shares outstanding amount that includes the IPO shares only for the period they were outstanding. The impact of this change resulted in an increase in previously reported EPS of $0.27, $0.19, $0.18, and $0.25 for the years ended September 30, 2016, 2015, 2014, and 2013, respectively. Refer to Note 17 of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Annual Report on Form 10-K for additional information.

(c) In addition to cash flows from operating activities determined in accordance with U.S. GAAP, Valvoline uses free cash flow as a non-GAAP metric of cash flow generation. By deducting capital expenditures from operating cash flows and adding discretionary contributions to pension plans, the Company is able to provide a better indication of the ongoing cash being generated that is ultimately available for both debt and equity holders as well as other investment opportunities. Unlike cash flow from operating activities, free cash flow includes the impact of capital expenditures, providing a more complete picture of cash generation. Free cash flow has certain limitations, including that it does not reflect adjustments for certain non-discretionary cash flows, such as allocated costs, and includes the pension and other postretirement plan remeasurement losses and gains. The amount of mandatory versus discretionary expenditures can vary significantly between periods. Valvoline’s results of operations are presented based on its management structure and internal accounting practices. The structure and practices are specific to Valvoline; therefore, its financial results and free cash flow are not necessarily comparable with similar information for other comparable companies. Free cash flow has limitations as an analytical tool and should not be considered in isolation from, or as an alternative to, or more meaningful than, cash flows provided by operating activities as determined in accordance with U.S. GAAP. In evaluating free cash flow, be aware that in the future Valvoline may incur expenses similar to those for which adjustments are made in calculating free cash flow. Valvoline's presentation of free cash flow should not be construed as a basis to infer that its future results will be unaffected by unusual or nonrecurring items. Because of these limitations, one should rely primarily on cash flows provided by operating activities as determined in accordance with U.S. GAAP and use free cash flow only as a supplement.

(d) Valvoline determines same-store sales growth on a fiscal year basis, with new stores excluded from the metric until the completion of their first full fiscal year in operation.

(e) Valvoline franchisees are distinct legal entities and Valvoline does not consolidate the results of operations of its franchisees.

(f) In addition to net income determined in accordance with U.S. GAAP, Valvoline evaluates operating performance using certain non-GAAP measures including EBITDA, which Valvoline defines as net income, plus income tax expense (benefit), net interest and other financing expenses, and depreciation and amortization, and Adjusted EBITDA, which Valvoline defines as EBITDA adjusted for losses (gains) on pension and other postretirement plans remeasurements, impairment of equity investment, and other items, which can include costs related to the separation from Ashland, impact of significant acquisitions or divestitures, restructuring costs, or other income/costs related to corporate or non-operational matters not directly attributable to the underlying business. Valvoline believes the use of non-GAAP measures on a consolidated and reportable segment basis assists investors in understanding the ongoing operating performance of its business by presenting comparable financial results between periods. The non-GAAP information provided is used by management and may not be comparable to similar measures disclosed by other companies, because of differing methods used by other companies in calculating EBITDA and Adjusted EBITDA. EBITDA and Adjusted EBITDA provide a supplemental presentation of Valvoline's operating performance on a consolidated and reportable segment basis. Adjusted EBITDA generally includes adjustments for unusual, non-operational or restructuring-related activities.

The consolidated financial statements include actuarial gains and losses for defined benefit pension and other postretirement benefit plans recognized annually in the fourth quarter of each fiscal year and whenever a plan is determined to qualify for a remeasurement during a fiscal year. Actuarial gains and losses occur when actual experience differs from the estimates used to allocate the change in value of pension and other postretirement benefit plans to expense throughout the year or when assumptions change, as they may each year. Significant factors that can contribute to the recognition of actuarial gains and losses include changes in discount rates used to remeasure pension and other postretirement obligations on an annual basis or upon a qualifying remeasurement, differences between actual and expected returns on plan assets and other changes in actuarial assumptions, such as the life expectancy of plan participants. Management believes Adjusted EBITDA provides investors with a meaningful supplemental presentation of Valvoline's operating performance, which includes the expected return on pension plan assets and excludes both the actual return on pension plan assets and the impact of actuarial gains and losses. Though classified in operating income, management believes these actuarial gains and losses are more reflective of changes in current conditions in global financial markets (and in particular interest rates) that are not directly related to the operations of the underlying business and that do not have an immediate, corresponding impact on the compensation and benefits provided to eligible employees and retirees.

EBITDA and Adjusted EBITDA each have limitations as analytical tools and should not be considered in isolation from, or as an alternative to, or more meaningful than, net income as determined in accordance with U.S. GAAP. Because of these limitations, one should rely primarily on net income as determined in accordance with U.S. GAAP and use EBITDA and Adjusted EBITDA only as supplements. In evaluating EBITDA and Adjusted EBITDA, one should be aware that in the future Valvoline may incur expenses similar to those for which adjustments are made in calculating EBITDA and Adjusted EBITDA. Valvoline's presentation of EBITDA and Adjusted EBITDA should not be construed as a basis to infer that future results will be unaffected by unusual or nonrecurring items.

The following table reconciles net income to EBITDA and Adjusted EBITDA for the periods presented.

	For the years ended September 30				
(In millions)	2017	2016	2015	2014	2013
Net income	$ 304	$ 273	$ 196	$ 173	$ 246
Income tax expense	186	148	101	91	135
Net interest and other financing expense	42	9	—	—	—
Depreciation and amortization	42	38	38	37	35
EBITDA	574	468	335	301	416
Separation costs	32	6	—	—	—
Adjustment associated with Ashland tax indemnity	(16)	—	—	—	—
Change in estimate - insurance reserves	(5)	—	—	—	—
(Gain) loss on pension and other postretirement plan remeasurements	(68)	(18)	46	61	(74)
Net loss on acquisition and divestiture	—	1	26	—	—
Impairment of equity investment	—	—	14	—	—
Restructuring	—	—	—	6	—
Adjusted EBITDA	$ 517	$ 457	$ 421	$ 368	$ 342

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

The following discussion should be read in conjunction with the consolidated financial statements and the accompanying Notes to Consolidated Financial Statements included in Item 8 of Part II of this Annual Report on Form 10-K.

BUSINESS OVERVIEW

Valvoline is a worldwide producer, marketer and supplier of engine and automotive maintenance products and services. In the United States and Canada, Valvoline's products and services are sold to retailers with over 30,000 retail outlets, to installer customers with over 12,000 locations, and through 1,127 Valvoline branded franchised and company-owned stores. Valvoline also has a strong international presence with products sold in approximately 140 countries. Valvoline serves its customer base through an extensive sales force and technical support organization, allowing Valvoline to leverage its technology portfolio and customer relationships globally, while meeting customer demands locally. This combination of scale and strong local presence is critical to the Company's success.

Valvoline is one of the most recognized and respected premium consumer brands in the global automotive lubricant industry, known for high quality products and superior levels of service. Established in 1866, Valvoline's heritage spans over 150 years, during which it has developed powerful name recognition across multiple product and service channels. Valvoline also has a history of leading innovation with revolutionary products such as All Climate ™, DuraBlend ™, and MaxLife ™. In addition to the iconic Valvoline-branded passenger car motor oils and other automotive lubricant products, Valvoline provides a wide array of lubricants used in heavy duty equipment, as well as automotive chemicals and fluids designed to improve engine performance and lifespan. Valvoline's premium branded product offerings enhance its high quality reputation and provide customers with solutions that address a wide variety of needs.

Valvoline's fiscal year ends on September 30 of each year, and Valvoline has three reportable segments: Core North America, Quick Lubes, and International, with certain corporate and non-operational items included in Unallocated and Other to reconcile to consolidated results. Refer to Item 1 included in Part I of this Annual Report on Form 10-K for a description of Valvoline's reportable segments.

2017 OVERVIEW

Separation from Ashland

On May 12, 2017, Ashland completed the distribution of 170 million shares of common stock of Valvoline to Ashland stockholders (the "Distribution") through a pro rata dividend on shares of Ashland common stock outstanding at the close of business on the record date of May 5, 2017. Based on the shares of Ashland common stock outstanding as of May 5, 2017, each share of Ashland common stock received 2.745338 shares of Valvoline common stock in the Distribution, marking the completion of Valvoline's separation from Ashland. Effective upon the Distribution, Ashland no longer owned any shares of Valvoline common stock, and Valvoline was no longer a controlled and consolidated subsidiary of Ashland.

Valvoline incurred certain costs related to the separation from Ashland, which are recorded within Separation costs in the Consolidated Statements of Comprehensive Income included in Item 8 of Part II of this Annual Report on Form 10-K. During the years ended September 30, 2017 and 2016, Valvoline recognized separation costs of $ 32 million and $ 6 million , respectively, which were primarily related to nonrecurring expenses, including legal, consulting, accounting, and other professional fees, including a success fee related to completing the Distribution, as well as employee costs and expenses to separate information technology platforms. Valvoline expects to incur nominal costs related to the separation from Ashland in fiscal 2018.

Quick Lubes Acquisitions

During the year ended September 30, 2017, Valvoline acquired 43 company-owned stores within the Quick Lubes reportable segment, including 28 stores related to the acquisition of the business assets from Time-It Lube LLC and Time-It Lube of Texas, LP ("Time-It Lube") in the second fiscal quarter of 2017. Refer to Note 4 of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Annual Report on Form 10-K for additional information on the acquisitions completed during fiscal 2017.

Pension De-Risking Actions

During the fourth fiscal quarter of 2017, the Company took a number of actions to reduce the risk and volatility associated with the U.S. qualified pension plan that was transferred from Ashland to Valvoline in fiscal 2016 prior to Valvoline's IPO.

- Valvoline made a discretionary contribution of $394 million to the U.S. qualified pension plan funded by the net proceeds from the issuance of 4.375% senior unsecured notes due 2025 (the “2025 Notes”) with an aggregate principal amount of $400 million as described further in Note 11 of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Annual Report on Form 10-K.

- In addition, Valvoline purchased a non-participating annuity contract using plan assets for an insurer to pay and administer future pension benefits for approximately 6,000 participants within the qualified U.S. pension plan. As a result, Valvoline transferred $585 million of pension benefit obligations in exchange for a similar amount of plan assets.

- Finally, given the impact these actions had on the funded status of the U.S. qualified pension plan, the Company also shifted its target asset allocation toward more fixed income securities to better match asset duration to that of the pension plan liabilities.

These actions have been leverage neutral to the Company and as a result of improved funded status, management does not expect significant required cash contributions to the U.S. qualified pension plan for several years and expects administrative costs to be reduced. These actions resulted in meaningful cash tax savings due to the Company's ability to reduce U.S. taxable income for these contributions. These significant cash tax savings will continue in future periods as the Company utilizes the net operating loss carryforward in 2017 to offset future U.S. taxable income generated from operations. At the end of fiscal 2017, total pension benefit and other postretirement obligations were $2.4 billion compared to $3.2 billion at the end of fiscal 2016 and total funded status improved to 85% in 2017 from 72% in 2016. For further information regarding these actions and the Company's pension and other postretirement obligations, refer to Note 14 of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Annual Report on Form 10-K.

BUSINESS STRATEGY

Valvoline’s key business and growth strategies include:

- growing and strengthening Valvoline’s quick lube network through organic store expansion, opportunistic, high-quality acquisitions in both core and new markets within the VIOC system and strong sales efforts to partner with new Express Care operators, in addition to continued same-store sales growth and profitability within Valvoline’s existing VIOC system stores by attracting new customers and increasing customer satisfaction, customer loyalty and average transaction size;

- accelerating international growth across key markets where demand for premium lubricants is growing, such as China, India and select countries in Latin America, by building strong distribution channels in under-served geographies, replacing less successful distributors and improving brand awareness among installer customers in those regions; and

- leveraging innovation, both in terms of product development, packaging, marketing and the implementation of Valvoline’s new digital infrastructure, to strengthen market share and profitability.

Use of Non-GAAP Measures

Valvoline has included within this document several non-GAAP measures, on both a consolidated and reportable segment basis, which are not defined within U.S. GAAP and do not purport to be alternatives to net income or cash flows from operating activities as measures of operating performance or cash flows. The following are the non-GAAP measures management has included and how management defines them:

- EBITDA, which management defines as net income, plus income tax expense/benefit, net interest and other financing expenses, and depreciation and amortization;
- EBITDA margin, which management defines as EBITDA divided by sales;
- Adjusted EBITDA, which management defines as EBITDA adjusted for losses/gains on pension and other postretirement plan remeasurements, impairment of equity investment, and other items (which can include costs related to the separation from Ashland, impact of significant acquisitions or divestitures, restructuring costs, or other non-operational income/costs not directly attributable to the underlying business);

- Adjusted EBITDA margin, which management defines as Adjusted EBITDA divided by sales; and
- Free cash flow, which management defines as operating cash flows less capital expenditures and certain other adjustments as applicable.

These measures are not prepared in accordance with U.S. GAAP, contain management's best estimates of cost allocations and shared resource costs. Management believes the use of non-GAAP measures on a consolidated and reportable segment basis assists investors in understanding the ongoing operating performance of Valvoline's business by presenting comparable financial results between periods. The non-GAAP information provided is used by Valvoline's management and may not be comparable to similar measures disclosed by other companies, because of differing methods used by other companies in calculating EBITDA and Adjusted EBITDA. EBITDA and Adjusted EBITDA provide a supplemental presentation of Valvoline's operating performance on a consolidated and reportable segment basis.

Adjusted EBITDA generally includes adjustments for unusual, non-operational or restructuring-related activities. Valvoline's consolidated financial statements include actuarial gains and losses for defined benefit pension and other postretirement benefit plans recognized annually in the fourth quarter of each fiscal year and whenever a plan is determined to qualify for a remeasurement during a fiscal year. Actuarial gains and losses occur when actual experience differs from the estimates used to allocate the change in value of pension and other postretirement benefit plans to expense throughout the year or when assumptions change, as they may each year. Significant factors that can contribute to the recognition of actuarial gains and losses include changes in discount rates used to remeasure pension and other postretirement obligations on an annual basis or upon a qualifying remeasurement, differences between actual and expected returns on plan assets and other changes in actuarial assumptions, such as the life expectancy of plan participants. Management believes Adjusted EBITDA provides investors with a meaningful supplemental presentation of Valvoline's operating performance, which includes the expected return on pension plan assets and excludes both the actual return on pension plan assets and the impact of actuarial gains and losses. Though classified in operating income, management believes these actuarial gains and losses are more reflective of changes in current conditions in global financial markets (and in particular interest rates) that are not directly related to the underlying business and that do not have an immediate, corresponding impact on the compensation and benefits provided to eligible employees and retirees. For further information on the actuarial assumptions and plan assets referenced above, see "Critical Accounting Policies-Employee benefit obligations" within this Item 7 and Note 12 of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Annual Report on Form 10-K.

Management uses free cash flow as an additional non-GAAP metric of cash flow generation. By deducting capital expenditures and adding discretionary contributions to pension plans, management is able to provide a better indication of the ongoing cash being generated that is ultimately available for both debt and equity holders as well as other investment opportunities. Unlike cash flow from operating activities, free cash flow includes the impact of capital expenditures, providing a more complete picture of cash generation. Free cash flow has certain limitations, including that it does not reflect adjustments for certain non-discretionary cash flows, such as allocated costs and mandatory debt repayments . The amount of mandatory versus discretionary expenditures can vary significantly between periods.

Valvoline's results of operations are presented based on Valvoline's management structure and internal accounting practices. The structure and practices are specific to Valvoline; therefore, Valvoline's financial results, EBITDA, Adjusted EBITDA and free cash flow are not necessarily comparable with similar information for other comparable companies. EBITDA, Adjusted EBITDA and free cash flow each have limitations as analytical tools and should not be considered in isolation from, or as an alternative to, or more meaningful than, net income and cash flows from operating activities as determined in accordance with U.S. GAAP. Because of these limitations, you should rely primarily on net income and cash flows from operating activities as determined in accordance with U.S. GAAP and use EBITDA, Adjusted EBITDA, and free cash flow only as supplements. In evaluating EBITDA, Adjusted EBITDA, and free cash flow, you should be aware that in the future Valvoline may incur expenses similar to those for which adjustments are made in calculating EBITDA, Adjusted EBITDA, and free cash flow. Valvoline's presentation of EBITDA, Adjusted EBITDA, and free cash flow should not be construed as a basis to infer that Valvoline's future results will be unaffected by unusual or nonrecurring items.

The following table reconciles EBITDA and Adjusted EBITDA to net income for the three annual periods presented.

	For the years ended September 30		
(In millions)	2017	2016	2015
Net income	$ 304	$ 273	$ 196
Income tax expense	186	148	101
Net interest and other financing expense	42	9	—
Depreciation and amortization	42	38	38
EBITDA	574	468	335
Separation costs	32	6	—
Adjustment associated with Ashland tax indemnity	(16)	—	—
Change in estimate - insurance reserves	(5)	—	—
(Gain) loss on pension and other postretirement plan remeasurements	(68)	(18)	46
Net loss on acquisition and divestiture	—	1	26
Impairment of equity investment	—	—	14
Adjusted EBITDA [(a)]	$ 517	$ 457	$ 421

(a) Includes recurring net periodic pension and other postretirement cost/income, which consists of service cost, interest cost, expected return on plan assets and amortization of prior service credit. Fiscal 2017 included income of $68 million, fiscal 2016 included income of $7 million, and the impact in fiscal 2015 was less than $1 million. Net periodic pension and other postretirement income is disclosed in further detail in Note 14 of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Annual Report on Form 10-K.

EBITDA and Adjusted EBITDA

The increase in Adjusted EBITDA of $60 million in 2017 was primarily due to an increase in pension and other postretirement non-service income of $53 million in 2017, solid performance by the reportable segments led by Quick Lubes, and offset by investments in the Company's stand-alone public company infrastructure. The increase in Adjusted EBITDA of $36 million from 2015 to 2016 is primarily attributed to strong performance of the reportable segments, notably the mix and volume gains in Core North America and Quick Lubes as well as improved raw materials cost, partially offset by International primarily due to the negative impact of foreign currency exchange.

RESULTS OF OPERATIONS

Consolidated Review

A comparative analysis of the Consolidated Statements of Comprehensive Income by caption is provided as follows for the years ended September 30, 2017, 2016 and 2015.

(In millions)	2017	2016	2015	2017 Change	2016 Change
Sales	$ 2,084	$ 1,929	$ 1,967	$ 155	$ (38)

The following table provides a reconciliation of the change in sales between fiscal years 2017 and 2016 and between fiscal years 2016 and 2015.

(In millions)	2017 Change	2016 Change
Pricing	$ 37	$ (94)
Volume	57	68
Product mix	29	29
Currency exchange	2	(31)
Divestiture and acquisition, net	30	(10)
Change in sales	$ 155	$ (38)

2017 compared to 2016

Sales increased $155 million , or 8%, to $2,084 million in 2017. The primary drivers of this increase were higher volume levels and higher product pricing, which increased sales by $57 million, or 3% and $37 million, or 2%, respectively. Favorable changes in product mix with increases in the percentage of sales for premium lubricants in Core North America and Quick Lubes and favorable foreign currency exchange increased sales by $29 million, or 2%, and $2 million, respectively. During 2017, lubricant gallons sold increased 3% to 179.7 million . Acquisitions within the Quick Lubes reportable segment increased sales by $30 million, or 2% during 2017.

2016 compared to 2015

Sales decreased $38 million, or 2%, to $1,929 million in 2016. Lower product pricing and unfavorable foreign currency exchange decreased sales by $94 million, or 5%, and $31 million, or 2%, respectively. Unfavorable foreign currency exchange was due to the U.S. dollar strengthening compared to various foreign currencies, primarily the Australian dollar, Euro and the Chinese Yuan. Higher volume levels and changes in product mix increased sales by approximately $68 million, or 3%, and approximately $29 million, respectively. During 2016, lubricant gallons sold increased 4% to 174.5 million. The net $10 million decrease due to divestitures and acquisitions is due to the divestiture of car care products within the Core North America reportable segment during fiscal 2015 which decreased sales by $45 million in 2016, net of increased sales of $35 million during 2016 from acquisitions within the Quick Lubes reportable segment.

(In millions)	2017	2016	2015	2017 Change	2016 Change
Cost of sales	$ 1,306	$ 1,168	$ 1,282	$ 138	$ (114)
Gross profit as a percent of sales	37.3%	39.5%	34.8%		

The following table provides a reconciliation of the changes in cost of sales between fiscal years 2017 and 2016 and between fiscal years 2016 and 2015.

(In millions)	2017 Change	2016 Change
Product cost	$ 54	$ (114)
Volume and product mix	50	65
Divestiture and acquisition, net	24	(14)
Pension benefit plans income (including remeasurements)	9	(28)
Currency exchange	1	(23)
Change in cost of sales	$ 138	$ (114)

2017 compared to 2016

Cost of sales increased $138 million during 2017 compared to 2016. Higher raw material costs increased cost of sales by $54 million primarily due to base oil prices increases in 2017. Changes in volume and product mix combined to increase cost of sales by $50 million. Additional sales generated by acquisitions of Quick Lubes locations increased cost of sales by $24 million. In addition, during 2017, cost of sales increased compared to 2016 due to a $9 million decrease in income related to the Company's pension benefit plans. Due to the freeze of U.S. pension benefits effective September 30, 2016, the only significant pension costs that are included in Cost of sales beginning in fiscal 2017 include the ongoing service costs and remeasurement adjustments related to certain international pension benefits. As a result, service costs in Cost of sales decreased $3 million year over year, and non-service income and remeasurement gains in Cost of sales decreased by $12 million. As a result of these matters, gross profit as a percent of sales declined driven largely by higher raw materials costs during 2017 as compared to 2016.

2016 compared to 2015

Cost of sales decreased $114 million during 2016 compared to 2015. Lower raw material costs decreased cost of sales by $114 million primarily due to declining base oil prices in 2016. Favorable foreign currency exchange decreased cost of sales by $23 million, while changes in volume and product mix combined to increase cost of sales by $65 million. The divestiture of car care products during fiscal 2015 decreased cost of sales by $38 million in 2016 and was partially offset by increased cost of sales of $24 million from the acquisition of OCH International Inc. (“Oil Can Henry’s”) during 2016. During 2016, cost of sales decreased compared to 2015 due to increased income of $28 million primarily related to pension and other postretirement benefit plan remeasurements. Gross profit as a percent of sales increased due to lower cost of sales driven largely by lower raw material costs during 2016 as compared to 2015.

(In millions)	2017	2016	2015	2017 Change	2016 Change
Selling, general and administrative expense	$ 375	$ 365	$ 348	$ 10	$ 17
Pension and other postretirement plan non-service income and remeasurement adjustments, net	(136)	(22)	22	(114)	(44)
Separation costs	32	6	—	26	6
Total operating expense	$ 271	$ 349	$ 370	$ (78)	$ (21)
As a percent of sales	13.0%	18.1%	18.8%		

2017 compared to 2016

Total operating expense decreased $78 million, or 22%, during 2017 as compared to 2016. Key drivers of this decrease were:

- a decrease of $114 million related to pension and other postretirement plan non-service income and remeasurement adjustments. Specifically, during 2017, remeasurement gains of $66 million were recognized along with pension and other postretirement plan non-service income of $70 million. This compared to remeasurement gains of $11 million and non-service income of $11 million in 2016;
- a $16 million benefit for a reduction in amounts due to Ashland under the Tax Matters Agreement as a result of Ashland's utilization of Valvoline tax attributes in the Ashland group income tax returns; and
- a $5 million benefit related to a change in estimate for insurance reserves.

These decreases were partially offset by increased separation costs of $26 million and approximately $3 million in costs from acquisitions. Additionally, overall spend compared to the prior year increased primarily as a result of establishing Valvoline as a stand-alone public company. The spend for people and professional assistance necessary to operate independently more than offset a decrease in allocated corporate costs from the Company's former parent.

2016 compared to 2015

Operating expense decreased $21 million, or 6%, during 2016 as compared to 2015. Key drivers of this decrease were:

- a decrease of $44 million related to the pension and other postretirement costs. Specifically, during 2016, remeasurement gains of $11 million were recognized along with pension and other postretirement plan non-service income of $11 million. This compared to remeasurement losses of $28 million and non-service income of $6 million in 2015;

- a decrease in spending of $6 million due to the divestiture of car care products; and
- a decrease of $5 million due to favorable currency exchange impacts.

These decreases were partially offset by the following significant increases:

- separation costs of $6 million;
- increased labor-related costs of $6 million related to the Company's investments in its infrastructure and teams;
- increased spend of $4 million related to operating costs associated with the acquisition of Oil Can Henry’s;
- increased consultant and technology cost of $4 million attributable to the Company's digital initiatives;
- increased advertising and sales promotion expenses of $4 million;
- increased research and development costs of $2 million; and
- increased bad debt related expense of $2 million.

(In millions)	2017	2016	2015	2017 Change	2016 Change
Equity and other income					
Equity income (loss)	$ 12	$ 12	$ (2)	$ —	$ 14
Other income	13	7	10	6	(3)
	$ 25	$ 19	$ 8	$ 6	$ 11

2017 compared to 2016

Equity and other income increased by $6 million during 2017 compared to 2016. Equity income was flat compared to 2016, while other income increased by $6 million primarily due to an increase in income generated by research and development testing and royalties from the Company's investments in joint ventures, which had increased volumes and revenues.

2016 compared to 2015

Equity income (loss) increased by $14 million during 2016 compared to 2015, primarily due to the $14 million impairment of a joint venture equity investment within Venezuela in 2015. For additional information, refer to Note 4 of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Annual Report on Form 10-K. Other income decreased by $3 million primarily due to a decrease in income due to divestitures and unfavorable currency impacts.

(In millions)	2017	2016	2015	2017 Change	2016 Change
Net interest and other financing expense	$ 42	$ 9	$ —	$ 33	$ 9

2017 compared to 2016

Net interest and other financing expense increased by $33 million during 2017 compared to 2016. This increase was largely driven by the timing of Valvoline's debt structure that was put into place in the fourth fiscal quarter of 2016, which included the term loan borrowing and issuance of 5.500% senior unsecured notes due 2024 with an aggregate principal amount of $375 million (“2024 Notes”), that drove higher year over year interest costs. In addition, there was an increase in interest associated with higher outstanding debt in 2017 primarily related to $75 million in new borrowings on the accounts receivable securitization facility entered into in the first fiscal quarter of 2017 and the 2025 Notes issuance in the aggregate principal amount of $400 million senior unsecured notes in the fourth fiscal quarter of 2017.

2016 compared to 2015

Net interest and other financing expense increased by $9 million during 2016 compared to 2015 due to Valvoline's debt structure that was put into place in the fourth fiscal quarter of 2016, including the issuance of the 2024 Notes and term loan borrowing. There was no outstanding debt in 2015.

(In millions)		2017		2016		2015		2017 Change		2016 Change
Net loss on acquisition and divestiture	$	—	$	1	$	26	$	(1)	$	(25)

The loss on acquisition and divestiture in 2016 represents costs to complete the acquisition of Oil Can Henry's while the 2015 amount represents the loss on the disposition of car care products. This loss was a result of the book value exceeding the sales price of the assets sold. There was no loss on acquisition and divestiture for 2017.

(In millions)		2017		2016		2015		2017 Change		2016 Change
Income tax expense	$	186	$	148	$	101	$	38	$	47
Effective tax rate		38.0%		35.2%		34.0%				

The effective tax rates in each year are generally in line with the U.S. statutory rate. The increase in the 2017 and 2016 effective tax rates is partially due to the increase in income from pension and other postretirement benefits that generated significant income amounts in higher tax rate jurisdictions. Additionally, in fiscal 2017, the effective tax rate was impacted by income tax expense resulting from the Tax Matters Agreement activity with Ashland, certain non-deductible separation costs, and the partial loss of certain tax deductions as a result of the $394 million voluntary contribution to the U.S. qualified pension plan, partially offset by a benefit from a state valuation allowance release. During fiscal years 2017, 2016 and 2015, the effective tax rate was impacted favorably by the lower tax rate on foreign earnings and net favorable permanent items. These favorable items are offset by the unfavorable impact of state taxes, and these adjustments net to an immaterial overall impact to the effective tax rate for each year.

Reportable Segment Review

Valvoline’s business is managed within three reportable segments: Core North America, Quick Lubes and International. Results of Valvoline’s reportable segments are presented based on how operations are managed internally, including how the results are reviewed by the chief operating decision maker. The structure and practices are specific to Valvoline; therefore, the financial results of its reportable segments are not necessarily comparable with similar information for other comparable companies. Valvoline allocates all costs to its reportable segments except for certain significant corporate and non-operational matters, including, but not limited to, company-wide restructuring activities and costs or adjustments that relate to former businesses that Valvoline no longer operates. The service cost component of pension and other postretirement benefit costs is allocated to each reportable segment on a ratable basis, while the remaining non-service and remeasurement components of pension and other postretirement benefits costs are recorded to Unallocated and other. Valvoline refines its expense allocation methodologies to the reportable segments from time to time as internal accounting practices are improved, more refined information becomes available and the industry or market changes. Revisions to Valvoline’s methodologies that are insignificant are applied on a prospective basis.

The EBITDA and Adjusted EBITDA amounts presented within this section are provided as a means to enhance the understanding of financial measurements that Valvoline has internally determined to be relevant measures of comparison for each reportable segment. Each of these non-GAAP measures is defined as follows: EBITDA (operating income plus depreciation and amortization), Adjusted EBITDA (EBITDA adjusted for key items, which may include adjustments for significant acquisitions or divestitures, as applicable), and Adjusted EBITDA margin (Adjusted EBITDA divided by sales). Valvoline does not generally allocate items to each reportable segment below operating income, such as interest expense and income taxes. As a result, reportable segment EBITDA and Adjusted EBITDA are reconciled directly to operating income since it is the most directly comparable Consolidated Statements of Comprehensive Income caption.

The following table shows sales, operating income and statistical operating information by reportable segment for the years ended September 30, 2017, 2016 and 2015.

	For the years ended September 30		
(In millions)	2017	2016	2015
Sales			
Core North America	$ 1,004	$ 979	$ 1,061
Quick Lubes	541	457	394
International	539	493	512
	$ 2,084	$ 1,929	$ 1,967
Operating income (loss)			
Core North America	$ 199	$ 212	$ 200
Quick Lubes	130	117	95
International	76	74	65
Total operating segments	405	403	360
Unallocated and other	127	28	(37)
	$ 532	$ 431	$ 323
Depreciation and amortization			
Core North America	$ 15	$ 16	$ 17
Quick Lubes	22	17	16
International	5	5	5
	$ 42	$ 38	$ 38
Operating information			
Core North America			
Lubricant sales gallons	99.4	101.2	99.9
Premium lubricants (percent of U.S. branded volumes)	45.8%	41.4%	36.6%
Gross profit as a percent of sales [(a)]	39.5%	41.2%	36.6%
Quick Lubes			
Lubricant sales gallons	22.5	20.2	17.4
Premium lubricants (percent of U.S. branded volumes)	59.9%	57.1%	54.5%
Gross profit as a percent of sales [(a)]	40.3%	41.6%	39.8%
International			
Lubricant sales gallons [(b)]	57.8	53.1	50.1
Lubricant sales gallons, including unconsolidated joint ventures	94.7	85.3	80.1
Premium lubricants (percent of lubricant volumes)	27.6%	29.0%	30.9%
Gross profit as a percent of sales [(a)]	29.8%	31.4%	30.2%

(a) Gross profit is defined as sales, less cost of sales.
(b) Excludes volumes from unconsolidated joint ventures.

Core North America

2017 compared to 2016

Core North America sales increased $25 million, or 3%, to $1,004 million in 2017. Higher product pricing and favorable changes in product mix increased sales by $21 million, or 2%, and $20 million, or 2%, respectively. Lower volume levels decreased sales by $16 million, or 2%.

Gross profit decreased $6 million during 2017 compared to 2016. Higher raw material costs, partially offset by higher product pricing and decreased gross profit by $14 million, while changes in volume and product mix combined for a net increase in gross profit by $8 million. Gross profit as a percent of sales (or gross profit margin) during the year decreased 1.7 percentage points to 39.5% driven largely by higher raw materials costs during 2017 as compared to 2016.

Selling, general and administrative expense increased $7 million during the current period, primarily as a result of $2 million of increased employee costs, and an $8 million increase of shared expenses partially due to stand-alone public company costs, net of a $3 million decrease in bad debts.

Operating income totaled $199 million in the current period as compared to $212 million in the prior year period. EBITDA decreased $14 million to $214 million in 2017. EBITDA margin decreased 2.0 percentage points to 21.3% in 2017.

2016 compared to 2015

Core North America sales decreased $82 million, or 8%, to $979 million in 2016. Lower product pricing and the disposition of car care products decreased sales by $68 million, or 6%, and $45 million, or 4%, respectively. Changes in product mix and higher volume levels increased sales by $27 million, or 3%, and $7 million, respectively. Unfavorable foreign currency exchange decreased sales by $3 million primarily due to the U.S. dollar strengthening compared to the Canadian dollar.

Gross profit increased $15 million during 2016 compared to 2015. Lower product costs, partially offset by lower product pricing, increased gross profit by $12 million, while changes in volume and product mix combined to increase gross profit by $11 million. The divestiture of car care products and unfavorable foreign currency exchange decreased gross profit by $7 million and $1 million, respectively. Gross profit as a percent of sales (or gross profit margin) during the current period increased 4.6 percentage points to 41.2%.

Selling, general and administrative expense (which, for reportable segment purposes, includes corporate expense allocation costs) increased $3 million during the current period, primarily as a result of $4 million of increased consulting and legal costs, $2 million of increased bad debt expense, $2 million of increased research and development expenses and $1 million of salaries expense. These increases were partially offset by cost savings from the divestiture of car care products of $6 million. Equity and other income remained consistent compared to the prior year.

Operating income totaled $212 million in the current period as compared to $200 million in the prior year period. EBITDA increased $11 million to $228 million in 2016. EBITDA margin increased 2.8 percentage points to 23.3% in 2016.

EBITDA and Adjusted EBITDA reconciliation

The following EBITDA presentation is provided as a means to enhance the understanding of financial measurements that Valvoline has internally determined to be relevant measures of comparison for the results of Core North America. There were no unusual or key items that affected comparability for Adjusted EBITDA for all periods presented herein.

	For the years ended September 30		
(In millions)	2017	2016	2015
Operating income	$ 199	$ 212	$ 200
Depreciation and amortization	15	16	17
EBITDA	$ 214	$ 228	$ 217

Quick Lubes

2017 compared to 2016

Quick Lubes sales increased $84 million, or 18%, to $541 million during 2017. Volume increased sales by $29 million as lubricant sales gallons increased to 22.5 million gallons during 2017. Acquisitions increased sales by $30 million and favorable product pricing increased sales by approximately $17 million. Favorable changes in product mix increased sales $8 million.

Gross profit increased $28 million during 2017 compared to 2016. Increases in volumes and higher premium product mix combined to increase gross profit by approximately $15 million. Favorable product pricing, partially offset by increased raw material costs, increased gross profit by $7 million, while acquisitions increased gross profit by $6 million. Gross profit margin during the current year decreased 1.3 percentage points to 40.3% driven largely by higher raw materials costs.

Selling, general and administrative expense increased $15 million during 2017. The increase was primarily a result of a $4 million increase in advertising and sales promotion costs, a $3 million increase in operating costs as a result of acquisitions, and an $8 million increase in shared expenses partially due to stand-alone public company costs. Equity and other income was essentially flat in 2017 compared to 2016.

Operating income totaled $130 million in 2017 as compared to $117 million in 2016. EBITDA increased $18 million to $152 million in 2016. EBITDA margin decreased 1.2 percentage points to 28.1% in 2017.

2016 compared to 2015

Quick Lubes sales increased $63 million, or 16%, to $457 million during 2016. Volume increased sales by $34 million as lubricant sales gallons increased to 20.2 million gallons during 2016. Acquisitions increased sales by $35 million, while unfavorable product pricing decreased sales by $8 million. Changes in product mix increased sales $2 million.

Gross profit increased $33 million during 2016 compared to 2015. Increases in volumes and changes in product mix combined to increase gross profit by $13 million. Lower raw material costs, partially offset by unfavorable product pricing, increased gross profit by $9 million, while the acquisition of Oil Can Henry's increased gross profit by $11 million. Gross profit margin during the current year increased 1.8 percentage points to 41.6%.

Selling, general and administrative expense increased $11 million during 2016. The increase was primarily a result of a $4 million increase in operating costs as a result of the acquisition of Oil Can Henry's, $4 million of increased allocated resource costs from Ashland, a $1 million increase in advertising and sales promotion costs and a $1 million increase in salaries and incentive compensation costs. Equity and other income was essentially flat in 2016 compared to 2015.

Operating income totaled $117 million in 2016 as compared to $95 million in 2015. EBITDA increased $23 million to $134 million in 2016. EBITDA margin increased 1.1 percentage points in to 29.3% in 2016.

Additional Sales and Growth Information

Quick Lubes sales are influenced by the number of company-owned stores and the business performance of those stores. Through Quick Lubes, Valvoline sells products to and receive royalty fees from VIOC franchisees. As a result, Quick Lubes sales are influenced by the number of units owned by franchisees and the business performance of franchisees. The following table provides supplemental information regarding company-owned stores and franchisees that Valvoline believes is relevant to an understanding of the Quick Lubes business.

	Company-owned		
	For the years ended September 30		
	2017	2016	2015
Beginning of period	342	279	272
Opened	3	3	1
Acquired	29	52	3
Conversions between company-owned and franchise	14	9	3
Closed	(4)	(1)	—
End of period	384	342	279
	Franchise*		
	For the years ended September 30		
	2017	2016	2015
Beginning of period	726	663	650
Opened	38	33	28
Acquired	—	42	—
Conversions between company-owned and franchise	(14)	(9)	(3)
Closed	(7)	(3)	(12)
End of period	743	726	663
Total VIOC Stores	1,127	1,068	942

The year over year change from 2017 to 2016 is primarily driven by the acquisition of business assets from Time-It Lube in the second quarter of 2017, which added 28 company-owned locations and other smaller acquisitions during 2017, including conversions from franchises that added 15 company-owned locations.

	For the years ended September 30		
	2017	2016	2015
Same-Store Sales Growth** - Company-owned	7.0%	6.2%	7.5%
Same-Store Sales Growth** - Franchisee*	7.5%	8.0%	7.8%
Same-Store Sales Growth** - Combined*	7.4%	7.5%	7.7%

* Valvoline's franchisees are distinct legal entities and Valvoline does not consolidate the results of operations of its franchisees.

** Valvoline determines same-store sales growth on a fiscal year basis, with new stores excluded from the metric until the completion of their first full fiscal year in operation.

EBITDA and Adjusted EBITDA reconciliation

The following EBITDA presentation is provided as a means to enhance the understanding of financial measurements that Valvoline has internally determined to be relevant measures of comparison for the results of Quick Lubes. There were no unusual or key items that affected comparability for Adjusted EBITDA for all periods presented herein.

	For the years ended September 30		
(In millions)	2017	2016	2015
Operating income	$ 130	$ 117	$ 95
Depreciation and amortization	22	17	16
EBITDA	$ 152	$ 134	$ 111

International

2017 compared to 2016

International sales increased $46 million, or 9%, to $539 million in 2017. Higher volume levels and changes in product mix combined to increase sales by a net $45 million, or 9%. Favorable foreign currency exchange increased sales by $2 million, while unfavorable product pricing decreased sales by $1 million due to pricing increases being put into place in the latter part of 2017.

Gross profit increased $6 million in 2017 compared to 2016. Increases in volumes and unfavorable changes in product mix combined to increase gross profit by $14 million. Favorable foreign currency exchange increased gross profit by $1 million, while higher product costs resulted in a $9 million decrease in gross profit. Gross profit margin during 2017 decreased 1.6 percentage points to 29.8% largely driven by higher raw materials costs, coupled with the timing of price increases and unfavorable changes in product mix.

Selling, general and administrative expense increased $7 million during the year, primarily as a result of $2 million of employee costs, $2 million of legal reserves and expenses related to the settlement of historical tax matters, $1 million related to foreign currency exchange and a $2 million increase in shared expenses partially due to stand-alone public company costs. Equity and other income increased $3 million compared to 2016 primarily as a result of increased royalty income from joint ventures during 2017.

Operating income totaled $76 million in 2017 as compared to $74 million in the prior year. EBITDA increased $2 million in 2017 to $81 million. EBITDA margin decreased 1.0 percentage points to 15.0% in the current year.

2016 compared to 2015

International sales decreased $19 million, or 4%, to $493 million in 2016. Unfavorable foreign currency exchange, primarily with the Yuan and Australian dollar, decreased sales by $28 million, or 5%. Higher volume levels increased sales by $27 million, or 5%. Lower product pricing decreased sales by $18 million.

Gross profit was essentially unchanged in 2016 compared to 2015. Unfavorable foreign currency exchange decreased gross profit by $7 million, while increases in volumes and changes in product mix combined to increase gross profit by $7 million. Lower product pricing was partially offset by lower product costs resulting in minimal gross profit impact. Gross profit margin during 2016 increased 1.2 percentage points to 31.4%.

Selling, general and administrative expense increased $2 million during the current period, primarily as a result of $1 million of salaries expense, $1 million of advertising and sales promotion costs, and $1 million of cost savings from resource costs allocated from Valvoline's parent company. Equity and other income (loss) increased $11 million compared to 2015 primarily as a result of the $14 million impairment of the Venezuelan equity method investment in 2015. For additional information, refer to Note 4 of the Notes to Consolidated Financial Statements.

Operating income totaled $74 million in 2016 as compared to $65 million in the prior year. EBITDA increased $9 million in 2016 to $79 million. Adjusted EBITDA decreased $5 million and Adjusted EBITDA margin decreased 0.4 percentage points to 16.0% in the current year.

EBITDA and Adjusted EBITDA reconciliation

The following EBITDA and Adjusted EBITDA presentation is provided as a means to enhance the understanding of financial measurements that Valvoline has internally determined to be relevant measures of comparison for the results of International. Adjusted EBITDA results have been prepared to illustrate the ongoing effects of Valvoline's operations, which exclude certain key items. The $14 million adjustment during the year ended September 30, 2015 is related to the impairment of an equity method investment within Venezuela.

	For the years ended September 30		
(In millions)	2017	2016	2015
Operating income	$ 76	$ 74	$ 65
Depreciation and amortization	5	5	5
EBITDA	81	79	70
Impairment of equity investment	—	—	14
Adjusted EBITDA	$ 81	$ 79	$ 84

Unallocated and Other

Unallocated and other generally includes items such as components of pension and other postretirement benefit plan expenses (excluding service costs, which are allocated to the reportable segments), certain corporate and other non-operational matters, such as company-wide restructuring activities and legacy costs, including those associated with the separation from Ashland.

The following table summarizes the key components of the Unallocated and other segment's operating income (expense) for the fiscal years ended September 30, 2017, 2016, and 2015.

	For the years ended September 30		
(In millions)	2017	2016	2015
Gain (loss) on pension and other postretirement plan remeasurements	$ 68	$ 18	$ (46)
Non-service pension and other postretirement net periodic income [(a)]	70	17	9
Separation costs	(32)	(6)	—
Adjustment associated with Ashland tax indemnity	16	—	—
Change in estimate - insurance reserves	5	—	—
Other	—	(1)	—
Total income (expense)	$ 127	$ 28	$ (37)

(a) Amounts exclude service costs of $2 million during 2017, $10 million during 2016 and $9 million during 2015, which are allocated to Valvoline's reportable segments.

Fiscal years ended September 30, 2017, 2016, and 2015

Unallocated and other recorded income of $127 million for 2017 and income of $28 million for 2016 compared to expense of $37 million for 2015. Unallocated and other includes pension and other postretirement non-service cost certain other corporate or non-operational costs that have not been allocated to the reportable segments.

In connection with Valvoline's separation from Ashland, the Company assumed pension and other postretirement benefit obligations and plan assets, of which a substantial portion relates to the U.S. pension and other postretirement plans. Before the transfer, these plans were accounted for by Valvoline as multiemployer plans. In 2015, Valvoline received an allocation of the cost for these benefits based on Valvoline employees' relative participation in the plans. However, as the responsibility for several of Ashland's pension and other postretirement plans transferred to Valvoline during 2016, the full amount of any costs or gains related to the transferred plans has been reflected within the Valvoline consolidated financial statements for the month of September 2016 and the year ended September 30, 2017. These pension and other postretirement plan costs include interest cost, expected return on assets and amortization of prior service credit, which resulted in income of $70 million during 2017, $17 million during 2016 and $9 million during 2015. Unallocated and other also includes gains and losses on pension and other postretirement plan remeasurements, which resulted in a gain of $68 million in 2017, a gain of $18 million in 2016 and a loss of $46 million in 2015. Fluctuations in these amounts from year to year result primarily from changes in the discount rate but are also partially affected by differences between the expected and actual return on plan assets during each year as well as other changes in other actuarial assumptions such as changes in demographic data or mortality assumptions.

In 2017, Unallocated and other also includes $32 million of separation costs, $16 million of income related to adjustments associated with the Ashland tax indemnity and $5 million of income from the release of previously-estimated insurance reserves. In 2016, Unallocated and other included $6 million of separation costs in 2016 and $1 million of other legacy costs allocated from Ashland to Valvoline.

EBITDA and Adjusted EBITDA reconciliation

The following EBITDA and Adjusted EBITDA presentation is provided as a means to enhance the understanding of financial measurements that Valvoline has internally determined to be relevant measures of comparison for the results of Unallocated and other. Adjusted EBITDA results have been prepared to illustrate the ongoing effects of Valvoline's operations, which exclude certain key items.

	For the years ended September 30		
(In millions)	2017	2016	2015
Operating income	$ 127	$ 28	$ (37)
Depreciation and amortization	—	—	—
Net loss on acquisition and divestiture	—	(1)	(26)
EBITDA	127	27	(63)
(Gain) loss on pension and other postretirement plan remeasurements	(68)	(18)	46
Separation costs	32	6	—
Adjustment associated with Ashland tax indemnity	(16)	—	—
Change in estimate - insurance reserves	(5)	—	—
Net loss on acquisition and divestiture	—	1	26
Adjusted EBITDA	$ 70	$ 16	$ 9

FINANCIAL POSITION, LIQUIDITY AND CAPITAL RESOURCES

Overview

In periods prior to Valvoline's IPO, the primary source of liquidity for Valvoline's business was the cash flow provided by operations, which was transferred to Ashland to support its overall centralized cash management strategy. Transfers of cash to and from Ashland's cash management system have been reflected in Ashland's net investment in the historical Consolidated Balance Sheets, Consolidated Statements of Cash Flows and Consolidated Statements of Stockholders' Equity (Deficit). In connection with Valvoline's reorganization and initial separation from Ashland's other businesses in fiscal 2016, the Company received $60 million in cash from Ashland. Since its IPO, Valvoline maintains its own cash management and financing functions for its operations.

Operating activities

The cash generated during each period is primarily driven by net earnings, adjusted for certain non-cash items such as depreciation and amortization and remeasurement adjustments to the pension and other postretirement plans, as well as changes in working capital, which are fluctuations within accounts receivable, inventory, trade payables and other accrued expenses. Valvoline continues to emphasize working capital management as a high priority and focus.

The following table sets forth the cash flows associated with Valvoline's operating activities:

(In millions)	For the years ended September 30 2017	2016	2015
Cash flows from operating activities			
Net income	$ 304	$ 273	$ 196
Adjustments to reconcile net income to cash flows from operating activities			
Depreciation and amortization	42	38	38
Debt issuance cost amortization	3	4	—
Deferred income taxes	117	13	(9)
Equity income from affiliates	(12)	(12)	(12)
Distributions from equity affiliates	8	16	18
Net loss on acquisition and divestiture	—	1	26
Impairment of equity method investment	—	—	14
Pension contributions	(412)	(2)	—
(Gain) loss on Valvoline pension and other postretirement plan remeasurements	(68)	(42)	2
Stock-based compensation expense	9	—	—
Change in assets and liabilities [(a)]			
Accounts receivable	(22)	(17)	53
Inventories	(35)	(4)	(6)
Payables and accrued liabilities	—	5	2
Other assets and liabilities	(64)	38	8
Total cash flows (used in) provided by operating activities	$ (130)	$ 311	$ 330

(a) Excludes changes resulting from operations acquired or sold.

Cash flows from operating activities decreased by $441 million in 2017. The decrease in cash flows from operating activities was primarily related to the Company's discretionary pension contribution of $394 million and other incremental pension contributions of $16 million, as well as incremental cash payments of $92 million related to interest and tax payments during 2017, which included tax-sharing payments to Ashland related to the pre-Distribution periods. These decreases were generally offset by improved net earnings and non-cash stock-based compensation expense.

Cash provided by operating activities decreased by $19 million in 2016 from 2015. The decrease in cash flows provided by operating activities was primarily related to a number of factors related to the separation and IPO, net of increased net income. These factors resulted in increased receivables, net of increased accrued expenses and other liabilities, and increased deferred income tax expense. The changes in working capital were primarily related to separation and financing activities in the fourth fiscal quarter of 2016 which increased payables and accrued expenses offset by increased receivables as customer payments on Valvoline receivables were collected by Ashland prior to year-end but were not remitted to Valvoline before September 30, 2016.

Investing activities

The following table sets forth the cash flows associated with Valvoline's investing activities:

(In millions)	For the years ended September 30 2017	2016	2015
Cash flows from investing activities			
Additions to property, plant and equipment	$ (68)	$ (66)	$ (45)
Proceeds from disposal of property, plant and equipment	1	1	1
Acquisitions, net of cash required	(68)	(83)	(5)
Proceeds from sale of operations	—	—	23
Total cash flows used in investing activities	$ (135)	$ (148)	$ (26)

Cash used in investing activities was $135 million in 2017 compared to $148 million in 2016 and $26 million for 2015. Acquisitions of $68 million during 2017 primarily relates to the acquisition of business assets from Time-It Lube and other small Quick Lubes locations. Acquisitions of $83 million during 2016 primarily relates to the acquisition of Oil Can Henry's as well as other small Quick Lubes locations, while the prior year periods included $5 million in 2015 for nominal Quick Lube acquisitions. Fiscal 2017 included cash outflows of $68 million and fiscal 2016 included cash outflows of $66 million for capital expenditures, both primarily related to the Company's investments leading up to full separation from Ashland to operate as a stand-alone public company, which included expenditures primarily related to buildings, leasehold improvements and related machinery and equipment, including computer equipment. This compares to capital expenditures of $45 million in 2015.

Financing activities

The following table sets forth the cash flows associated with Valvoline's financing activities:

	For the years ended September 30		
(In millions)	2017	2016	2015
Cash flows from financing activities			
Net transfers from (to) Ashland	$ 5	$ (1,504)	$ (304)
Cash contributions from Ashland	—	60	—
Proceeds from initial public offering, net offering costs of $40	—	719	—
Proceeds from borrowings, net of issuance costs of $5 in 2017 and $15 in 2016	470	1,372	—
Repayment on borrowings	(90)	(637)	—
Repurchase of common stock	(50)	—	—
Cash dividends paid	(40)	—	—
Total cash flows provided by (used in) financing activities	$ 295	$ 10	$ (304)

Cash flows from financing activities was an inflow of $295 million for 2017, an inflow of $10 million in 2016 and an outflow of $304 million in 2015. Cash flows provided by financing activities in 2017 were primarily related to net proceeds related to the issuance of the 2025 Notes in the aggregate principal amount of $400 million and the accounts receivable securitization facility of $75 million, offset by cash outflows related to payments on borrowings, the repurchase of common stock and the payment of dividends. Cash flows provided by financing activities in 2016 were related to the various financing activities that Valvoline executed in the fiscal fourth quarter of 2016 to establish borrowings and initial capitalization, net of remittances to Ashland for net cash transfers primarily from borrowing proceeds and net income through the date of the IPO of September 28, 2016. As Ashland managed Valvoline's cash and financing arrangements prior to the IPO, all excess cash generated through earnings were remitted to Ashland and all sources of cash were funded by Ashland.

Free cash flow and other liquidity information

The following table sets forth free cash flow for the disclosed periods and reconciles cash flows provided by operating activities to free cash flow. Free cash flow has certain limitations, including that it does not reflect adjustments for certain non-discretionary cash flows, such as allocated costs, and includes the pension and other postretirement plan remeasurement losses or gains. Refer to "Non-GAAP Performance Metrics" within this Item 7 for additional information regarding this non-GAAP measure.

	For the years ended September 30		
(In millions)	2017	2016	2015
Cash flows (used in) provided by operating activities	$ (130)	$ 311	$ 330
Adjustments:			
Additions to property, plant and equipment	(68)	(66)	(45)
Discretionary contributions to pension plans	394	—	—
Free cash flow	$ 196	$ 245	$ 285

At September 30, 2017, working capital (current assets minus current liabilities, excluding long-term debt due within one year) was $327 million, compared to $349 million in 2016 and $178 million at the end of 2015. Working capital is affected by Valvoline's use of the last-in, first-out ("LIFO") method of inventory valuation that valued inventories below their replacement costs by $33 million, $29 million and $31 million as of September 30, 2017, 2016 and 2015, respectively. Liquid assets (cash, cash equivalents, and accounts receivable) amounted to 123% of current liabilities at September 30, 2017 and 134% and 112% at September 30, 2016 and 2015, respectively.

Financial position

Valvoline had $201 million in cash and cash equivalents as of September 30, 2017, of which $102 million was held by foreign subsidiaries. Valvoline currently has no plans to repatriate any amounts for which additional taxes would need to be accrued.

Debt

The following summary reflects Valvoline's debt as of September 30:

(In millions)	2017	2016
Short-term debt	$ 75	$ —
Long-term debt (including current portion and debt issuance cost discounts) [(a)]	1,049	743
Total debt	$ 1,124	$ 743

(a) Amount includes $2 million of debt acquired through acquisitions, and is net of $13 million and $9 million of debt issuance cost discounts as of September 30, 2017 and 2016, respectively, which are direct reductions from the carrying amount of debt.

During August 2017, Valvoline completed the 2025 Notes issuance with an aggregate principal amount of $400 million, which is outstanding as of September 30, 2017. The net proceeds of the offering of approximately $394 million (after deducting initial purchasers' discounts and debt issuance costs) were used to make a voluntary contribution to the Company's U.S. qualified pension plan. This discretionary contribution significantly reduces the underfunded position of this plan and is expected to minimize risk and long-term volatility of the Company's underfunded obligation associated with this pension plan. As a result, overall balance sheet obligations have not materially changed.

During the first fiscal quarter of 2017, Valvoline entered into an accounts receivable securitization facility with an extendable one-year term, which makes available up to $125 million. Valvoline borrowed $75 million under this facility and applied the net proceeds to reduce term loan borrowings by the same amount, which is described further below. As of September 30, 2017, $75 million remains outstanding under this facility.

During 2016, Valvoline incurred $875 million in indebtedness under the 2016 Senior Credit Agreement, which provided for an aggregate principal amount of $1,325 million in senior secured credit facilities, comprised of (i) a five-year $875 million term loan and (ii) a five-year $450 million revolving credit facility (including a $100 million letter of credit sublimit). During 2016, Valvoline fully drew on the term loans, receiving approximately $865 million (after deducting fees and expenses) and borrowed $137 million under the revolving facility. These net proceeds were transferred to Ashland in 2016, and $500 million of term loan borrowings and all of the outstanding revolver borrowings were repaid in 2016 using proceeds from the Valvoline IPO. As noted above, during 2017, proceeds from the accounts receivable securitization facility of $75 million were utilized to reduce term loan borrowings, and Valvoline also made quarterly payments during 2017 for total principal payments of $15 million. As of September 30, 2017, $285 million of term loan borrowings remain outstanding.

As of September 30, 2017, Valvoline has outstanding the 2024 Notes with an aggregate principal amount of $375 million, which were issued in July 2016. The net proceeds from the offering of $370 million (after deducting initial purchasers’ discounts) were transferred to Ashland in 2016.

Refer to Note 11 of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Annual Report on Form 10-K for additional details regarding the Company’s debt instruments.

Debt covenant restrictions

Valvoline’s debt contains usual and customary representations and warranties, and usual and customary affirmative and negative covenants, including limitations on liens, additional indebtedness, investments, restricted payments, asset sales, mergers, affiliate transactions and other customary limitations, as well as financial covenants (including maintenance of a maximum consolidated leverage ratio and a minimum consolidated interest coverage ratio). As of the end of any fiscal quarter, the maximum consolidated net leverage ratio and minimum consolidated interest coverage ratio permitted under the 2016 Senior Credit Agreement are 4.5 and 3.0, respectively. As of September 30, 2017, Valvoline is in compliance with all covenants of its debt obligations.

Contractual obligations and other commitments

The following table sets forth Valvoline's obligations and commitments to make future payments under existing contracts at September 30, 2017. Excluded from the table are contractual obligations for which the ultimate settlement of quantities or prices are not fixed and determinable.

(In millions)	Total	Less than 1 Year	1-3 years	3-5 years	More than 5 years
Contractual obligations					
Long-term debt	$ 1,137	$ 90	$ 60	$ 211	$ 776
Interest payments [(a)]	308	47	92	82	87
Operating lease obligations	113	21	33	21	38
Capital lease and financing obligations	83	6	13	12	52
Employee benefit obligations [(b)]	139	21	31	26	61
Unrecognized tax benefits [(c)]	10	—	—	—	10
Total contractual obligations	$ 1,790	$ 185	$ 229	$ 352	$ 1,024

(a) Includes interest expense on both variable and fixed rate debt assuming no prepayments. Variable interest rates have been assumed to remain constant through the end of the term at the rates that existed as of September 30, 2017.

(b) Includes estimated funding of pension plans for 2017, as well as projected benefit payments through 2026 for Valvoline's unfunded pension plans. Excludes the benefit payments from the pension plan trust funds.

(c) Due to uncertainties in the timing of the effective settlement of tax positions with respect to taxing authorities, Valvoline is unable to determine the timing of payments related to noncurrent unrecognized tax benefits, including interest and penalties. Therefore, these amounts were included in the "More than 5 years" column.

Pension and other postretirement plan obligations

Prior to Valvoline's IPO, Ashland transferred certain pension and other postretirement benefit obligations to Valvoline, of which the most substantial portion was related to the U.S. qualified pension plan. The unfunded portion of total pension and other postretirement obligations as of September 30, 2017 was $357 million compared to $904 million at September 30, 2016.

No U.S. qualified pension plan contributions were required in 2017 and 2016; however, Valvoline made a discretionary contribution of $394 million to the U.S. qualified pension plan with the proceeds from the 2025 Notes. Valvoline also contributed approximately $18 million and $6 million to the U.S. non-qualified pension plans and non-U.S. pension plans during 2017 and 2016, respectively. During 2018, Valvoline expects to contribute approximately $14 million to its pension plans related to its U.S. non-qualified and non-U.S. pension plans. Refer to Note 14 of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Annual Report on Form 10-K for additional information regarding the Company's pension and other postretirement plans.

Tax-related commitments

Valvoline has been and generally will be included in Ashland income tax returns for historical periods through Distribution ("Interim Period"), which was completed on May 12, 2017. Under the Tax Matters Agreement, Ashland makes all necessary tax payments to the relevant tax authorities with respect to Ashland returns, and Valvoline makes tax-sharing payments to Ashland, which have been determined as if Valvoline and each of its relevant subsidiaries included in the Ashland returns file their own separate tax returns for the Interim Period.

For taxable periods after the Distribution, Valvoline is no longer included in any Ashland income tax returns and will file returns that include only Valvoline and/or its subsidiaries, as appropriate. Valvoline will not be required to make tax-sharing payments to Ashland for those taxable periods. Nevertheless, Valvoline has (and will continue to have following the Distribution) joint and several liability with Ashland to the IRS for the consolidated U.S. federal income taxes of the Ashland group for the taxable periods in which Valvoline was part of the Ashland consolidated group.

Pursuant to the terms of the Tax Matters Agreement, Valvoline has indemnified Ashland for certain U.S. federal, state or local taxes for any tax period prior to full separation and Distribution that arise on audit or examination and are directly attributable to neither the Valvoline business nor the Chemicals businesses. Any payment obligations that may arise as a result of Valvoline assuming liability for such taxes could negatively affect Valvoline's financial position and cash flows.

Stockholder dividends

Valvoline paid quarterly cash dividends to holders of its common stock for the year ended September 30, 2017 for a total of $40 million. Valvoline expects to pay quarterly cash dividends to the holders of its common stock; however, the declaration and payment of dividends to holders of Valvoline common stock will be at the discretion of the Board after taking into account various factors, including Valvoline's financial condition, operating results, current and anticipated cash needs, cash flows, impact on Valvoline's effective tax rate, indebtedness, legal requirements and other factors that the Board considers relevant.

On November 14, 2017, the Company's Board of Directors approved a quarterly cash dividend of $0.0745 per share of common stock. The dividend is payable December 15, 2017 to shareholders on record on December 1, 2017.

Share repurchases

On April 24, 2017, Valvoline's Board of Directors authorized a share repurchase program, under which Valvoline may repurchase up to $150 million of its common stock through December 31, 2019. During the year ended September 30, 2017, $50 million of this authorization was used to repurchase approximately 2 million shares of common stock. Repurchases were and will continue to be in accordance with all applicable securities laws and regulations and funded from available liquidity. As of September 30, 2017, $100 million of share repurchase authorization remains.

Summary

As of September 30, 2017, cash and cash equivalents totaled $201 million and total debt was $1.1 billion. Valvoline's ability to generate positive cash flows from operations is dependent on general economic conditions, and the competitive environment in the industry, and is subject to the business and other risk factors described in Item 1A of Part I of this Annual Report on Form 10-K. If the Company is unable to generate sufficient cash flows from operations, or otherwise comply with the terms of its credit facilities, Valvoline may be required to seek additional financing alternatives. Valvoline's financial position has enabled it to achieve a Moody's rating of Ba2 and a Standard & Poor's rating of BB+, which was upgraded in the fourth fiscal quarter of 2017. Subsequent changes to ratings may have an effect on Valvoline's borrowing rate or ability to access capital markets in the future. Borrowing capacity under the 2016 Senior Credit Agreement was $436 million (due to a $14 million reduction for letters of credit) and up to $50 million under the accounts receivable securitization facility as of September 30, 2017.

Management believes that the Company has sufficient liquidity based on its current cash position, cash generated from business operations and existing financing to meet its required pension and other postretirement plan contributions, debt servicing obligations, tax-related and other contractual commitments, as well as operating requirements for the next twelve months.

OFF-BALANCE SHEET ARRANGEMENTS

As of September 30, 2017, Valvoline has no contractual obligations that are reasonably likely to have a material effect on the Company's consolidated financial statements that are not fully recorded on the Consolidated Balance Sheets or fully disclosed in the Notes to Consolidated Financial Statements. As part of Valvoline's normal course of business, it is a party to certain financial guarantees and other commitments, and while these arrangements involve elements of performance and credit risk that are not included in the Consolidated Balance Sheets, such risk is not currently considered reasonably likely to have a material effect on the Company's consolidated financial statements. The possibility that Valvoline would have to make actual cash expenditures in connection with these obligations is largely dependent on the performance of the party whose obligations Valvoline guarantees, or the occurrence of future events.

NEW ACCOUNTING PRONOUNCEMENTS

For a discussion and analysis of recently issued and adopted accounting pronouncements and the impact on Valvoline, refer to Note 2 of the Notes to Consolidated Financial Statements in Item 8 of Part II of this Annual Report on Form 10-K.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of Valvoline's consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets, liabilities, sales and expenses, and the disclosures of contingent assets and liabilities. Significant items that are subject to such estimates and assumptions include, but are not limited to, long-lived assets (including goodwill), sales deductions, employee benefit obligations and income taxes. Although management bases its estimates on historical experience and various other assumptions that are believed to be reasonable under the circumstances, actual results could differ significantly from the estimates under different assumptions or conditions.

Long-lived Assets

Tangible assets

The cost of property, plant and equipment is depreciated on a straight-line basis over the estimated useful lives of the assets. Buildings are depreciated principally over 5 to 35 years and machinery and equipment principally over 5 to 15 years. As of September 30, 2017, Property, plant and equipment is approximately $390 million. Property, plant and equipment asset groups are evaluated for impairment whenever events or changes in circumstances indicate the carrying amount of an asset may not be recoverable. Examples of events or changes in circumstances could include, but are not limited to, a prolonged economic downturn, current period operating or cash flow losses combined with a history of losses or a forecast of continuing losses associated with the use of an asset group, or a current expectation that an asset group will be sold or disposed of before the end of its previously estimated useful life. Various factors are used in determining whether a trigger requiring impairment assessment have occurred, such as changes in the expected use of the assets, changes in technology or development of alternative assets, changes in economic conditions, changes in operating performance and changes in expected future cash flows.

Recoverability is based upon projections of anticipated future undiscounted cash flows associated with the use and eventual disposal of the property, plant and equipment asset groups, as well as specific appraisals in certain instances. These evaluations occur at the lowest level for which identifiable cash flows are largely independent of cash flows associated with other property, plant and equipment asset groups. This determination of the asset group to be tested for recoverability is based on company-specific operating characteristics, including shared cost structures and interdependency of revenues between assets, and the determination of future undiscounted cash flows includes estimates of forecasted revenue and costs that may be associated with an asset as well as the expected periods that the asset (or asset group) may be utilized.

If the future undiscounted cash flows result in a value that is less than the carrying value, then the long-lived asset is considered impaired and a loss is recognized based on the amount by which the carrying amount exceeds the estimated fair value. Fair value is determined based on the highest and best use of the assets considered from the perspective of market participants, which may be different than the Company's actual intended use of the asset (or asset group). Because judgment is involved in identifying long-lived asset impairment triggering events, determining asset groups, future undiscounted cash flows and the fair value of asset groups, there is risk that the carrying value of these assets may require adjustment in future periods.

Goodwill

Goodwill is tested at the reporting unit level for impairment on an annual basis during the fourth quarter as of July 1 or more frequently if certain events occur indicating that the carrying value of goodwill may be impaired. Judgment is involved in determining if an indicator of impairment has occurred. Such indicators may include a decline in expected cash flows, a significant adverse change in legal factors or in the business climate, a decision to sell a business, unanticipated competition, or slower growth rates, among others. Valvoline's reporting units are consistent with its reportable segments of Core North America ($89 million in goodwill as of September 30, 2017), Quick Lubes ($201 million in goodwill as of September 30, 2017), and International ($40 million in goodwill as of September 30, 2017).

In evaluating goodwill for impairment, Valvoline has the option to first perform a qualitative assessment to determine whether further impairment testing is necessary or to perform a quantitative assessment by comparing the fair value of a reporting unit to its carrying amount, including goodwill. Under the qualitative assessment, an entity is not required to calculate the fair value of a reporting unit unless the entity determines that it is more likely than not that its fair value is less than its carrying amount. Qualitative factors include macroeconomic conditions, industry and market conditions, cost factors, overall financial performance, among others. These factors require significant judgment and estimates, and application of alternative assumptions could produce different results.

If under the quantitative assessment, the fair value of a reporting unit is less than its carrying amount, then the amount of the impairment loss, if any, must be measured under step two of the impairment analysis. In step two of the analysis, an impairment loss will be recorded equal to the excess of the carrying value of the reporting unit's goodwill over its implied fair value. Fair values of the reporting units are estimated using a weighted methodology considering the output from both the income and market approaches. The income approach incorporates the use of a discounted cash flow ("DCF") analysis. A number of significant assumptions and estimates are involved in the application of the DCF model to forecast operating cash flows, including markets and market shares, sales volumes and prices, costs to produce, tax rates, capital spending, discount rate and working capital changes. Several of these assumptions vary among reporting units. The cash flow forecasts are generally based on approved strategic operating plans. The market approach is performed using the Guideline Public Companies method which is based on earnings multiple data. The Company also performs a reconciliation between market capitalization and the estimate of the aggregate fair value of the reporting units, including consideration of a control premium.

Valvoline elected to perform a qualitative assessment during the fiscal 2017 and determined that it is not more likely than not that the fair values of Valvoline's reporting units are less than carrying amounts. In fiscal 2016, a quantitative assessment indicated that each reporting unit had a fair value that exceeded book value by 300% and more.

Valvoline’s assessment of an impairment charge on goodwill could change in future periods if any or all of the following events were to occur with respect to a particular reporting unit: a significant change in projected business results, a divestiture decision, significant changes to certain cash flow assumptions, economic deterioration that is more severe or of a longer duration than anticipated, or other significant economic events.

Sales Deductions

Valvoline recognizes revenue when persuasive evidence of an arrangement exists, products are delivered or services are provided to customers, the sales price is fixed or determinable and collectability is reasonably assured. Provisions are made at the time of revenue recognition for sales rebates and discounts consisting primarily of promotion rebates and customer pricing discounts. These provisions are recorded as a reduction of revenue based on contract terms and the Company’s historical experience with similar programs and require management’s judgment with respect to estimating customer participation and performance levels. Differences between estimated expense and actual sales incentives provided are generally immaterial and are recognized in earnings in the period such differences are determined. The cost of these programs is recognized as incurred and recorded as a reduction of sales and totaled $360 million, $388 million and $345 million in the Consolidated Statements of Comprehensive Income for September 30, 2017, 2016 and 2015, respectively.

Employee benefit obligations

As a result of the transfer of pension and other postretirement liabilities from Ashland to Valvoline in fiscal 2016 prior to Valvoline's IPO, Valvoline assumed full responsibility as plan sponsor of these plans. From the point of transfer forward, Valvoline accounts for the plans as single-employer plans, recognizing net liabilities and the full amount of any costs or gains. Prior to the transfer of plan sponsorship, Valvoline had certain international single-employer pension plans and accounted for its participation in the Ashland sponsored plans as multiemployer plans whereby costs were allocated based on Valvoline employee plan participation. As of September 30, 2017, Valvoline’s net unfunded pension and other postretirement plan liabilities included in the Consolidated Balance Sheets totaled $357 million, and the U.S. plans represented 94% of this total employee benefit obligation. Total pension and other postretirement net periodic benefit costs included in the Consolidated Statements of Comprehensive Income were as follows for the year ended September 30, 2017:

(In millions)		2017
Service costs	$	2
Non-service pension and other postretirement net periodic income [(a)]		(70)
(Gains) losses on pension and other postretirement plans remeasurement		(68)
Subtotal		(138)
Total pension and other postretirement net periodic benefit (income) cost	$	(136)

(a) This non-service pension and other postretirement net periodic income includes the expected return on plan assets and amortization of prior service credit, net of interest costs.

Valvoline recognizes the change in the fair value of plan assets and net actuarial gains and losses annually in the fourth quarter of each fiscal year and whenever a plan is determined to qualify for a remeasurement. The remaining components of pension and other postretirement benefits cost are recorded ratably throughout the year. The service cost component of pension and other postretirement benefits costs is allocated to each reportable segment on a ratable basis, while the remaining non-service and remeasurement components of pension and other postretirement benefits costs are excluded from segment results and included in Unallocated and other as those items are not included in the evaluation of segment performance. Refer to Note 20 of the Notes to Consolidated Financial Statements included in Item 8 of Part II of this Annual Report on Form 10-K for a reconciliation of segment results to consolidated operating income.

Actuarial assumptions

The Company’s pension and other postretirement benefit costs and obligations are dependent on actuarial valuations and various assumptions that attempt to anticipate future events and are used in calculating the expense and liabilities relating to these plans. These assumptions include estimates and judgments the Company makes about interest rates, expected long-term investment return on plan assets, rate of increase in healthcare costs, rates of future compensation increases and mortality. Though management considers current market conditions and other relevant factors in establishing these assumptions, the actuarial assumptions used may differ materially from actual results due to changing market and economic conditions, longer or shorter life spans of participants, and differences between the actual and expected return on plan assets. These differences may result in a significant impact to the amount of pension or other postretirement benefits cost recorded or that may be recorded.

Under the Company's accounting policy, changes in the actual return on plan assets and the actuarial gains and losses recognized are calculated using updated actuarial assumptions as of the measurement date, which for Valvoline is September 30, unless a plan qualifies for an interim remeasurement during the year. Changes in assumptions or asset values may have a significant effect on the measurement of expense or income. Significant assumptions the Company must review and set annually and at each measurement date related to its pension and other postretirement benefit obligations are:

- Expected long-term return on plan assets — Based on long-term historical actual asset return information, the mix of investments that comprise plan assets and future estimates of long-term investment returns. The Company also deducts various expenses using the fair value of plan assets to estimate expense. The weighted-average long-term expected rate of return on assets assumption was 6.53% for 2017. In fiscal 2017, the global pension plan assets generated an actual weighted-average return of 7.10%, primarily driven by the market performance of U.S. plan assets. However, the expected return on plan assets is designed to be a long-term assumption, and therefore, actual returns will be subject to year-to-year variances. The U.S. pension plans comprise the most significant portion of plan assets, and for fiscal 2018, the expected rate of return on assets assumption for the U.S. pension plans will be 5.20%.

  Plan assets are invested in equity securities, government and agency securities, corporate debt, other non-traditional assets such as hedge funds. The investment goal of the U.S. pension plans is to achieve an adequate net investment return to provide for future benefit payments to its participants. U.S. target asset allocation percentages as of September 30, 2017 were 20% equity and 80% fixed income investments. The U.S. pension plans are managed by professional investment managers that operate under investment management contracts that include specific investment guidelines, requiring among other actions, adequate diversification and prudent use of risk management practices such as portfolio constraints relating to established benchmarks. Valvoline’s investment strategy and management practices relative to plan assets of non-U.S. plans generally are consistent except in those countries where investment of plan assets is dictated by applicable regulations.

- Discount rate — Reflects the rates at which benefits could effectively be settled and is based on current investment yields of high-quality corporate bonds. Consistent with the prior year, the Company uses an actuarially-developed full yield curve approach, the above mean yield curve, to match the timing of cash flows of expected future benefit payments from the plans by applying specific spot rates along the yield curve to determine the assumed discount rate. Valvoline’s 2017 expense, excluding actuarial gains and losses, for both U.S. and non-U.S. pension plans was determined using the spot discount rate as of the beginning of the fiscal year. The service cost and interest cost discount rates for 2017 pension expense were 2.15% and 2.84%, respectively, and 2.95% and 2.64%, respectively, for other postretirement expense. The weighted-average discount rate at the end of fiscal 2017 was 3.76% for the pension plans and 3.48% for the postretirement health and life plans.

- Mortality – Based on the Society of Actuaries RP-2014 mortality base tables with mortality improvements after 2006 removed and replaced with a mortality improvement scale based on the intermediate projection in the Social Security Administration’s Annual Trustees Report released in July 2017. Valvoline believes the updated mortality improvement scales provide a reasonable assessment of current mortality trends and is an appropriate estimate of future mortality projections.

- Rate of compensation increase — Effective for fiscal 2017, this assumption is no longer applicable to the U.S. pension plans due to the benefit accrual freeze as of September 30, 2016. In addition, some of the non-U.S. pension plans are also frozen, while those that remain open relate to areas where local laws require plans to operate within the applicable country. The weighted-average rate of compensation increase assumption for these non-U.S. plans was 2.99% for 2017.

- Healthcare cost trend rate — Because Valvoline’s retiree healthcare plans contain various caps that limit Valvoline’s contributions and because medical inflation is expected to continue at a rate in excess of these caps, the healthcare cost trend rate has not had a significant impact on Valvoline’s postretirement healthcare benefit costs.

The following table illustrates the estimated increases in pension and other postretirement expense that would have resulted from a one percentage point change in each of the following significant assumptions for 2017 and 2016:

(In millions)	2017	2016
Increase in pension costs from		
Decrease in the discount rate	$ 281	$ 352
Increase in the salary adjustment rate	1	1
Decrease in expected return on plan assets	21	23
Increase in other postretirement costs from		
Decrease in the discount rate	$ 6	$ 5

Based on the Company's investing strategy, plan assets hedge approximately 80% of the movement in liabilities related to changes in the discount rate.

For the year ended September 30, 2017, the asset and actuarial net gains on pension and other postretirement benefit plan remeasurements reflected in operating income was $68 million, which was primarily attributed to increases in discount rates, higher than expected returns on plan assets, and reduced mortality improvements.

Income Taxes

Valvoline is subject to income taxes in the United States and numerous foreign jurisdictions. Judgment in forecasting the taxable income using historical and projected future operating results is required in determining Valvoline’s provision for income taxes and the related assets and liabilities. The provision for income taxes includes current income taxes as well as deferred income taxes. Under U.S. GAAP, deferred tax assets and liabilities are determined based on differences between financial reporting and tax basis of assets and liabilities and are measured using enacted tax rates and laws that are expected to be in effect when the deferred assets or liabilities are expected to be settled or realized. The effect of changes in tax rates on deferred taxes is recognized in the period in which the enactment date changes.

Valuation allowances are established when necessary on a jurisdictional basis to reduce deferred tax assets to the amounts expected to be realized when it is more likely than not that some portion or all of a deferred tax asset will not be realized. The determination as to whether a deferred tax asset will be realized is based on the evaluation of positive and negative evidence, which includes historical profitability, future market growth, future taxable income, the expected timing of the reversals of existing temporary differences and tax planning strategies. The Company assesses deferred taxes and the adequacy or need for a valuation allowance on a quarterly basis. As of September 30, 2017, the Company had $281 million of net deferred tax assets, including $8 million in valuation allowances related to certain deferred income tax assets in jurisdictions where there is uncertainty as to ultimate realization of a benefit from those tax assets. If the Company is unable to generate sufficient future taxable income, or if there is a material change in the actual effective tax rates or the time period within which the underlying temporary differences become taxable or deductible, or if the tax laws change unfavorably, then Valvoline could be required to increase the valuation allowance against deferred tax assets, resulting in an increase in the effective tax rate. Each increase of $5 million to the valuation allowance as of September 30, 2017 would impact the fiscal 2017 effective tax rate by one percentage point.

The Company recognizes the tax benefit from an uncertain tax position only if it is more likely than not that the tax position will be sustained on examination by the taxing authorities, based on the technical merits of the position. The tax benefits recognized in the consolidated financial statements from such a position are measured based on the largest benefit that has a greater than fifty percent likelihood of being realized upon settlement. Interest and penalties related to uncertain tax positions are recognized as part of the provision for income taxes and are accrued beginning in the period that such interest and penalties would be applicable under relevant tax law until such time that the related tax benefits are recognized. The provision for income taxes may change period-to-period based on nonrecurring events, such as the settlement of income tax audits and changes in tax laws, as well as recurring factors including the geographic mix of income before taxes, state and local taxes and the effects of various income tax strategies. The Company is subject to ongoing tax examinations and assessments in various jurisdictions, including those in pre-Distribution periods where Valvoline may be required to indemnify Ashland. The Company's ongoing assessments of its tax positions require judgment and can materially increase or decrease the effective tax rate, as well as impact the operating results.

For the periods prior to the Distribution, Valvoline’s operating results are included in Ashland’s consolidated U.S., state, and in certain Ashland international subsidiaries' income tax returns. For these periods, the income tax provision in these Consolidated Statements of Comprehensive Income has been calculated on a separate return basis as if Valvoline was operating on a stand-alone basis and filed separate tax returns in the jurisdictions in which it operates. Accordingly, Valvoline’s tax results as presented include estimates due to the timing of completion and filing of income tax returns and may not necessarily be reflective of actual results or the results that Valvoline would have generated on a stand-alone basis.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Valvoline is exposed to market risks arising from adverse changes in:

- Foreign currency exchange rates;
- Inflation and changing prices;
- Interest rates; and
- Credit risk.

Foreign Currency Exchange Risk

Since a significant portion of Valvoline's operations and revenue occur outside the U.S., and in currencies other than the U.S. Dollar, results can be significantly impacted by changes in foreign currency exchange rates. Valvoline's foreign currency risk is primarily limited to the Euro, Australian Dollar, Canadian Dollar and Chinese Yuan with respect to sales, profits, and assets and liabilities denominated in currencies other than the U.S. Dollar. Although the Company uses financial instruments to hedge certain foreign currency risks, Valvoline is not fully protected against foreign currency fluctuations and reported results of operations could be affected by changes in foreign currency exchange rates. Valvoline believes its foreign currency risk is limited as 72% of Valvoline's revenue during the years ended September 30, 2017 and 2016 and 71% of Valvoline's revenue during the year ended September 30, 2015 was based in U.S. dollars. Valvoline does not have material exposures to market risk with respect to investments.

To manage exposures and mitigate the impact of currency fluctuations on the operations of foreign subsidiaries, the Company uses derivatives not designated as hedging instruments consisting primarily of forward contracts to hedge foreign currency denominated balance sheet exposures. For these derivatives, changes in the fair value are recognized in income to offset the gain or loss on the hedged item in the same period as the remeasurement losses and gains of the related foreign currency-denominated exposures. The Company utilizes derivative instruments that are purchased exclusively from highly rated financial institutions. These contracts are recorded on the Consolidated Balance Sheets as assets or liabilities at fair market value based upon market price quotations. The Company did not enter into non-exchange traded contracts that require the use of fair value estimation techniques, and Valvoline did not transact or have open any hedging contracts with respect to commodities or any related raw material requirements as of and for the year ended September 30, 2017, nor does Valvoline employ derivatives for trading or speculative purposes.

For purposes of analyzing potential risk, sensitivity analysis is used to quantify potential impacts that market rate changes may have on the fair values of the Company's derivative portfolio. The sensitivity analysis represents the hypothetical changes in value of the derivative and does not reflect the related gain or loss on the forecasted underlying exposure. A 10% appreciation or depreciation in the value of the U.S. Dollar against foreign currencies from the prevailing market rates would have resulted in a corresponding increase or decrease of $4 million as of September 30, 2017 in the fair value of open derivative contracts. The Company expects that any increase or decrease in the fair value of the portfolio would be substantially offset by increases or decreases in the underlying exposures.

The U.S. Dollar was weaker in 2017 compared to 2016 based on comparable weighted averages for the Company's functional currencies. This had a favorable impact of 0.1% on 2017 revenue versus 2016 revenue. This excludes the effects of derivative activities and, therefore, does not reflect the actual impact of fluctuations in exchange rates on the Company's operating income.

Inflation and Changing Prices

Valvoline's financial statements are prepared on the historical cost method of accounting in accordance with U.S. GAAP and, as a result, do not reflect changes in the purchasing power of the U.S. dollar. Monetary assets (such as cash, cash equivalents and accounts receivable) lose purchasing power as a result of inflation, while monetary liabilities (such as accounts payable and indebtedness) result in a gain, because they can be settled with dollars of diminished purchasing power. As of September 30, 2017 , Valvoline's monetary assets exceed its monetary liabilities, leaving it currently more exposed to the effects of future inflation. However, given the recent consistent stability of inflation in the United States in the past several years as well as forward economic outlooks, current inflationary pressures seem moderate.

Certain of the industries in which Valvoline operates are capital-intensive, and replacement costs for Valvoline's plants and equipment generally would substantially exceed their historical costs. Accordingly, depreciation and amortization expense would be greater if it were based on current replacement costs. However, because replacement facilities would reflect technological improvements and changes in business strategies, such facilities would be expected to be more productive than existing facilities, mitigating at least part of the risk of changing prices.

Valvoline uses the LIFO method to value a portion of its inventories to provide a better matching of revenues with current costs. However, LIFO values such inventories below their replacement costs during inflationary periods.

Interest Rate Risk

The Company is subject to interest rate risk principally in relation to variable-rate debt. Approximately 68% of the Company's outstanding borrowings as of September 30, 2017 had fixed rates. The increase in pre-tax interest expense for the year ended September 30, 2017 from a hypothetical 100 basis point increase in variable interest rates would be approximately $4 million.

Concentrations of Credit Risk

The Company is potentially subject to concentrations of credit risk on accounts receivable and financial instruments, such as derivative instruments and cash and cash equivalents. Credit risk includes the risk of nonperformance by counterparties. The maximum potential loss may exceed the amount recognized on the balance sheet. Exposure to credit risk is managed through credit approvals, credit limits, selecting major international financial institutions as counterparties to derivative transactions and monitoring procedures. Valvoline's business often involves large transactions with customers for which the Company does not require collateral. If one or more of those customers were to default in its obligations under applicable contractual arrangements, the Company could be exposed to potentially significant losses. Moreover, a prolonged downturn in the global economy could have an adverse impact on the ability of customers to pay their obligations on a timely basis. The Company believes that the reserves for potential losses are adequate. As of September 30, 2017, there was not a significant concentration of credit risk related to financial instruments.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Report of Independent Registered Public Accounting Firm

The Board of Directors and Stockholders of
Valvoline Inc. and Consolidated Subsidiaries

We have audited the accompanying consolidated balance sheets of Valvoline Inc. and Consolidated Subsidiaries (the "Company") as of September 30, 2017 and 2016, and the related consolidated statements of comprehensive income, shareholders' deficit and cash flows for each of the three years in the period ended September 30, 2017. Our audits also included the financial statement schedule listed in the Index at Item 15(a). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audits provide a reasonable basis for our opinion.

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Valvoline Inc. and Consolidated Subsidiaries at September 31, 2017 and 2016, and the consolidated results of its operations and its cash flows for each of the three years in the period ended September 30, 2017, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the related financial statement schedule, when compared in relation to the basic financial statements taken as a whole, present fairly in all material respects the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Valvoline Inc. and Consolidated Subsidiaries' internal control over financial reporting as of September 30, 2017, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework) and our report dated November 17, 2017, expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Cincinnati, Ohio
November 17, 2017

Valvoline Inc. and Consolidated Subsidiaries

Consolidated Statements of Comprehensive Income

(In millions except per share amounts)	Years ended September 30 2017	2016	2015
Sales	$ 2,084	$ 1,929	$ 1,967
Cost of sales	1,306	1,168	1,282
Gross profit	778	761	685
Selling, general and administrative expense	375	365	348
Pension and other postretirement plan non-service income and remeasurement adjustments, net	(136)	(22)	22
Separation costs	32	6	—
Equity and other income	(25)	(19)	(8)
Operating income	532	431	323
Net interest and other financing expense	42	9	—
Net loss on acquisition and divestiture	—	1	26
Income before income taxes	490	421	297
Income tax expense	186	148	101
Net income	$ 304	$ 273	$ 196
NET INCOME PER SHARE (a)			
Basic	$ 1.49	$ 1.60	$ 1.15
Diluted	$ 1.49	$ 1.60	$ 1.15
WEIGHTED AVERAGE COMMON SHARES OUTSTANDING (a)			
Basic	204	170	170
Diluted	204	170	170
DIVIDENDS PAID PER COMMON SHARE	$ 0.20	$ —	$ —
COMPREHENSIVE INCOME			
Net income	$ 304	$ 273	$ 196
Other comprehensive income (loss), net of tax			
Unrealized translation gain (loss)	7	8	(34)
Pension and other postretirement obligation adjustment	(8)	(1)	—
Other comprehensive (loss) income	(1)	7	(34)
Comprehensive income	$ 303	$ 280	$ 162

(a) Refer to Note 17 for additional information regarding revisions to prior period earnings per share (“EPS”) calculations.

See Notes to Consolidated Financial Statements.

Valvoline Inc. and Consolidated Subsidiaries

Consolidated Balance Sheets

(In millions except per share amounts)	At September 30 2017	2016
Assets		
Current assets		
Cash and cash equivalents	$ 201	$ 172
Accounts receivable, net	385	363
Inventories, net	175	139
Other current assets	29	56
Total current assets	790	730
Noncurrent assets		
Net property, plant and equipment	391	324
Goodwill and intangibles	335	267
Equity method investments	30	26
Deferred income taxes	281	389
Other noncurrent assets	88	89
Total noncurrent assets	1,125	1,095
Total assets	$ 1,915	$ 1,825
Liabilities and Stockholders' Deficit		
Current liabilities		
Short-term debt	$ 75	$ —
Current portion of long-term debt	15	19
Trade and other payables	192	177
Accrued expenses and other liabilities	196	204
Total current liabilities	478	400
Noncurrent liabilities		
Long-term debt	1,034	724
Employee benefit obligations	342	886
Deferred income taxes	—	2
Other noncurrent liabilities	178	143
Total noncurrent liabilities	1,554	1,755
Commitments and contingencies		
Stockholders' deficit		
Preferred stock, no par value, 40 shares authorized; no shares issued and outstanding	—	—
Common stock, par value $0.01 per share, 400 shares authorized, 203 and 205 shares issued and outstanding at September 30, 2017 and 2016, respectively	2	2
Paid-in capital	5	710
Retained deficit	(167)	—
Ashland's net investment	—	(1,039)
Accumulated other comprehensive income (loss)	43	(3)
Total stockholders ' deficit	(117)	(330)
Total liabilities and stockholders' deficit	$ 1,915	$ 1,825

See Notes to Consolidated Financial Statements.

Valvoline Inc. and Consolidated Subsidiaries

Consolidated Statements of Stockholders' Deficit

(In millions except per share amounts)	Common stock Shares	Common stock Amount	Paid-in capital	Retained deficit	Accumulated other comprehensive (loss) income	Ashland's net investment	Total
Balance at September 30, 2014	—	$ —	$ —	$ —	$ (27)	$ 751	$ 724
Net income	—	—	—	—	—	196	196
Currency translation adjustments	—	—	—	—	(34)	—	(34)
Net transfers to Ashland	—	—	—	—	—	(269)	(269)
Balance at September 30, 2015	—	—	—	—	(61)	678	617
Net income	—	—	—	—	—	273	273
Net transfers to Ashland	—	—	—	—	—	(1,500)	(1,500)
Contribution of net liabilities from Ashland	—	—	—	—	51	(490)	(439)
Issuance of common stock to Ashland and in connection with initial public offering, net of offering costs	205	2	710	—	—	—	712
Currency translation adjustments	—	—	—	—	8	—	8
Amortization of pension and other postretirement prior service credits in income	—	—	—	—	(1)	—	(1)
Balance at September 30, 2016	205	2	710	—	(3)	(1,039)	(330)
Net income	—	—	—	304	—	—	304
Contribution of net liabilities from Ashland	—	—	—	(55)	47	(2)	(10)
Net transfers from Ashland	—	—	—	—	—	5	5
Distribution of Ashland's net investment	—	—	(710)	(326)	—	1,036	—
Currency translation adjustments	—	—	—	—	7	—	7
Stock-based compensation	—	—	5	—	—	—	5
Amortization of pension and other postretirement prior service credits in income	—	—	—	—	(8)	—	(8)
Repurchase of common stock	(2)	—	—	(50)	—	—	(50)
Dividends paid, $0.049 per common share	—	—	—	(40)	—	—	(40)
Balance at September 30, 2017	203	$ 2	$ 5	$ (167)	$ 43	$ —	$ (117)

See Notes to Consolidated Financial Statements.

Valvoline Inc. and Consolidated Subsidiaries

Consolidated Statements of Cash Flows

(In millions)	Years ended September 30 2017	2016	2015
Cash flows from operating activities			
Net income	$ 304	$ 273	$ 196
Adjustments to reconcile to cash flows from operations			
Depreciation and amortization	42	38	38
Debt issuance cost amortization	3	4	—
Deferred income taxes	117	13	(9)
Equity income from affiliates	(12)	(12)	(12)
Distributions from equity affiliates	8	16	18
Net loss on acquisition and divestiture	—	1	26
Impairment of equity investment	—	—	14
Pension contributions	(412)	(2)	—
(Gain) loss on Valvoline pension and other postretirement plan remeasurements	(68)	(42)	2
Stock-based compensation expense	9	—	—
Change in assets and liabilities [(a)]			
Accounts receivable	(22)	(17)	53
Inventories	(35)	(4)	(6)
Payables and accrued liabilities	—	5	2
Other assets and liabilities	(64)	38	8
Total cash (used in) provided by operating activities	(130)	311	330
Cash flows from investing activities			
Additions to property, plant and equipment	(68)	(66)	(45)
Proceeds from disposal of property, plant and equipment	1	1	1
Acquisitions, net of cash required	(68)	(83)	(5)
Proceeds from sale of operations	—	—	23
Total cash used in investing activities	(135)	(148)	(26)
Cash flows from financing activities			
Net transfers from (to) Ashland	5	(1,504)	(304)
Cash contributions from Ashland	—	60	—
Proceeds from initial public offering, net of offering costs of $40	—	719	—
Proceeds from borrowings, net of issuance costs of $5 in 2017 and $15 in 2016	470	1,372	—
Repayments on borrowings	(90)	(637)	—
Repurchase of common stock	(50)	—	—
Cash dividends paid	(40)	—	—
Total cash provided by (used in) financing activities	295	10	(304)
Effect of currency exchange rate changes on cash and cash equivalents	(1)	(1)	—
Increase in cash and cash equivalents	29	172	—
Cash and cash equivalents - beginning of year	172	—	—
Cash and cash equivalents - end of year	$ 201	$ 172	$ —
Supplemental disclosures			
Interest paid	$ 35	$ —	$ —
Income taxes paid	$ 26	$ 17	$ —

[(a)] Excludes changes resulting from operations acquired or sold.

See Notes to Consolidated Financial Statements.

NOTE 1 – DESCRIPTION OF BUSINESS AND BASIS OF PRESENTATION

Description of Business

Valvoline Inc. ("Valvoline" or the "Company") is a worldwide producer, marketer, and supplier of engine and automotive maintenance products and services. Valvoline is one of the most recognized and respected premium consumer brands in the global automotive lubricant industry, known for its high quality products and superior levels of service. Established in 1866, Valvoline's heritage spans over 150 years, during which it has developed powerful name recognition across multiple product and service channels.

Valvoline was incorporated in May 2016 as a subsidiary of Ashland Global Holdings Inc. (which together with its predecessors and consolidated subsidiaries is referred to as "Ashland"). Prior to this time, Valvoline operated as an unincorporated commercial unit of Ashland. Following a series of restructuring steps prior to the initial public offering ("IPO") of Valvoline common stock, the Valvoline business was transferred from Ashland to Valvoline such that the Valvoline business included substantially all of the historical Valvoline business reported by Ashland, as well as certain other legacy Ashland assets and liabilities transferred to Valvoline from Ashland (the "Contribution"). In connection with the IPO on September 28, 2016, 34.5 million shares of Valvoline common stock were sold to investors and Ashland retained 170 million shares for 83% of the total outstanding shares of Valvoline common stock.

On May 12, 2017, Ashland distributed all of its remaining interest in Valvoline to Ashland stockholders (the "Distribution") through a pro rata dividend on shares of Ashland common stock outstanding at the close of business on the record date of May 5, 2017, marking the completion of Valvoline's separation from Ashland. Effective upon Distribution, Ashland no longer owns any shares of Valvoline common stock, and Valvoline is no longer a controlled and consolidated subsidiary of Ashland.

Basis of presentation and consolidation

The accompanying consolidated financial statements have been prepared in accordance with accounting principles generally accepted in the United States of America ("U.S. GAAP") and U.S. Securities and Exchange Commission ("SEC") regulations. The financial statements are presented on a consolidated basis for all periods presented and include the accounts of the Company and its majority-owned subsidiaries. All intercompany transactions and balances within Valvoline have been eliminated in consolidation. Certain prior period amounts have been reclassified in the accompanying consolidated financial statements and notes thereto to conform to the current period presentation. Refer to Note 17 for information regarding a revision to correct an immaterial error in the net earnings per share ("EPS") calculations previously reported in the consolidated financial statements for the periods prior to and including September 30, 2016.

The Contribution of the Valvoline business by Ashland to Valvoline was treated as a reorganization of entities under common Ashland control. As a result, Valvoline has retrospectively presented the consolidated financial statements of Valvoline and its subsidiaries for periods presented prior to the completion of the Contribution, which have been prepared on a stand-alone basis and derived from Ashland's consolidated financial statements and accounting records using the historical results of operations, and assets and liabilities attributed to Valvoline's operations, as well as allocations of expenses from Ashland. The consolidated financial statements for periods presented subsequent to the completion of the Contribution reflect the transfer of various assets and liabilities from Ashland on a carryover basis (historical cost) and the consolidated operations of Valvoline and its majority-owned subsidiaries as a separate, stand-alone entity.

All transactions and balances between Valvoline and Ashland have been reported in the consolidated financial statements. For periods prior to the IPO, these transactions were considered to be effectively settled for cash at the time the transactions were recorded. These transactions and net cash transfers to and from Ashland's centralized cash management system are reflected as a component of Ashland's net investment on the Consolidated Balance Sheets and as a financing activity within the accompanying Consolidated Statements of Cash Flows. In the Consolidated Statements of Stockholders' Deficit, Ashland's net investment on the Consolidated Balance Sheets represents the cumulative net investment by Ashland in Valvoline through the IPO, including net income through the completion of the IPO and net cash transfers to and from Ashland through Distribution. Valvoline's retained earnings from the IPO through September 30, 2017 were not material and accordingly, were not separately presented in the Consolidated Balance Sheets or Consolidated Statements of Stockholders' Deficit. Concurrent with the Distribution, Ashland's net investment in Valvoline was reduced to zero with a corresponding adjustment to Paid-in capital and Retained deficit.

Prior to the completion of the IPO, Valvoline utilized centralized functions of Ashland to support its operations, and in return, Ashland allocated certain of its expenses to Valvoline. Such expenses represent costs related, but not limited to, treasury, legal, accounting, insurance, information technology, payroll administration, human resources, stock incentive plans and other services. These costs, together with an allocation of Ashland overhead costs, are included within the Selling, general and administrative expense in the Consolidated Statements of Comprehensive Income and are disclosed in more detail in Note 19. Where it was possible to specifically attribute such expenses to activities of Valvoline, these amounts were charged or credited directly to Valvoline without allocation or apportionment. Allocation of all other such expenses was based on a reasonable reflection of the utilization of service provided or benefits received by Valvoline during the periods presented on a consistent basis, such as headcount, square footage, tangible assets or sales. However, the allocations of these shared expenses may not represent the amounts that would have been incurred had Valvoline operated autonomously or independently from Ashland in those periods. Actual costs that would have been incurred if Valvoline had been a stand-alone company would depend on multiple factors, including organizational structure and strategic decisions in various areas, including information technology and infrastructure. Upon completion of the IPO, Valvoline assumed responsibility for the costs of these functions.

NOTE 2 – SIGNIFICANT ACCOUNTING POLICIES

Valvoline's significant accounting policies, which conform to U.S. GAAP and are applied on a consistent basis in all years presented, except as indicated, are described below.

Use of estimates, risks and uncertainties

The preparation of financial statements in conformity with U.S. GAAP requires management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and the disclosures of contingent assets and liabilities. Significant items that are subject to such estimates and assumptions include, but are not limited to, long-lived assets (including goodwill), sales deductions, employee benefit obligations and income taxes. Although management bases its estimates on historical experience and various other assumptions that are believed to be reasonable under the circumstances, actual results could differ significantly from the estimates under different assumptions or conditions.

Cash and cash equivalents

All short-term, highly liquid investments having original maturities of three months or less are considered to be cash equivalents.

Accounts receivable and allowance for doubtful accounts

Valvoline records an allowance for doubtful accounts as a best estimate of the amount of probable credit losses for accounts receivable. Valvoline estimates the allowance for doubtful accounts based on a variety of factors, including the length of time receivables are past due, the financial health of its customers, macroeconomic conditions, past transaction history with the customer and changes in customer payment terms. If the financial condition of its customers deteriorates or other circumstances occur that result in an impairment of customers' ability to make payments, the Company records additional allowances as needed. The Company writes off uncollectible trade accounts receivable against the allowance for doubtful accounts when collections efforts have been exhausted and/or any legal action taken by the Company has concluded.

Inventories

Inventories are carried at the lower of cost or market value. Inventories are primarily stated at cost using the weighted-average cost method. Cost includes materials, labor and manufacturing overhead related to the purchase and production of inventories. In addition, certain lubricants are valued at cost using the last-in, first-out ("LIFO") method. The Company regularly reviews inventory quantities on hand and the estimated utility of inventory. Excess and obsolete reserves are established based on forecasted usage, product demand and life cycle, as well as utility.

Property, plant and equipment

The cost of property, plant and equipment is depreciated by the straight-line method over the estimated useful lives of the assets. Buildings are depreciated principally over 5 to 35 years and machinery and equipment principally over 5 to 15 years. Property, plant and equipment is relieved of the cost and related accumulated depreciation when assets are disposed of or otherwise retired. Gains or losses on the dispositions of property, plant and equipment are included in the Consolidated Statements of Comprehensive Income. Property, plant and equipment carrying values are evaluated for recoverability when impairment indicators are present and are conducted at the lowest identifiable level of cash flows. Such indicators could include, among other factors, operating losses, unused capacity, market value declines and technological obsolescence. Recorded values of asset groups of property, plant and equipment that are not expected to be recovered through undiscounted future net cash flows are written down to current fair value, which generally is determined from estimated discounted future net cash flows (assets held for use) or net realizable value (assets held for sale).

Business combinations

The financial results of the businesses that Valvoline has acquired are included in the Company's consolidated financial results based on the respective dates of the acquisitions. The Company allocates the purchase consideration to the identifiable assets acquired and liabilities assumed in the business combination based on their acquisition-date fair values. The excess of the purchase consideration over the amounts assigned to the identifiable assets and liabilities is recognized as goodwill. Factors giving rise to goodwill generally include synergies that are anticipated as a result of the business combination, including access to new customers and markets. The fair values of identifiable intangible assets acquired in business combinations are generally determined using an income approach, requiring financial forecasts and estimates as well as market participant assumptions.

Goodwill and other intangible assets

Valvoline tests goodwill for impairment annually as of July 1 or when events and circumstances indicate an impairment may have occurred. This annual assessment consists of Valvoline determining each reporting unit's current fair value compared to its current carrying value. Valvoline's reporting units are Core North America, Quick Lubes, and International.

In evaluating goodwill for impairment, Valvoline has the option to first perform a qualitative assessment to determine whether further impairment testing is necessary or to perform a quantitative assessment by comparing the fair value of a reporting unit to its carrying amount, including goodwill. Under the qualitative assessment, an entity is not required to calculate the fair value of a reporting unit unless the entity determines that it is more likely than not that its fair value is less than its carrying amount. Qualitative factors include macroeconomic conditions, industry and market conditions, cost factors, overall financial performance, among others.

If under the quantitative assessment, the fair value of a reporting unit is less than its carrying amount, then the amount of the impairment loss, if any, must be measured under step two of the impairment analysis. In step two of the analysis, an impairment loss will be recorded equal to the excess of the carrying value of the reporting unit's goodwill over its implied fair value. Fair values of the reporting units are estimated using a weighted methodology considering the output from both the income and market approaches. The income approach incorporates the use of a discounted cash flow ("DCF") analysis. A number of significant assumptions and estimates are involved in the application of the DCF model to forecast operating cash flows, including markets and market shares, sales volumes and prices, costs to produce, tax rates, capital spending, discount rate, weighted average cost of capital, terminal values and working capital changes. Several of these assumptions vary among reporting units. The cash flow forecasts are generally based on approved strategic operating plans. The market approach is performed using the Guideline Public Companies method which is based on earnings multiple data. The Company also performs a reconciliation between market capitalization and the estimate of the aggregate fair value of the reporting units, including consideration of a control premium.

Valvoline elected to perform a qualitative assessment during the fiscal 2017 and determined that it is not more likely than not that the fair values of Valvoline's reporting units are less than carrying amounts. In fiscal 2016, a quantitative assessment indicated that each reporting unit had a fair value that exceeded book value by 300% and more.

Acquired finite-lived intangible assets principally consist of certain trademarks and trade names, intellectual property, and customer relationships. Intangible assets acquired in an asset acquisition are carried at cost, less accumulated amortization. For intangible assets acquired in a business combination, the estimated fair values of the assets acquired are used to establish the carrying value, which is determined using common techniques, and the Company employs assumptions developed using the perspective of a market participant. These intangible assets are amortized on a straight-line basis over their estimated useful lives. Valvoline reviews finite-lived intangible assets for impairment whenever events or changes in circumstances indicate the carrying amount of an asset may not be recoverable and any not expected to be recovered through undiscounted future net cash flows and assets are written down to current fair value.

Equity method investments

Investments in companies, including joint ventures, where Valvoline has the ability to exert significant influence, but not control, over operating and financial policies of the investee are accounted for under the equity method of accounting. As of September 30, 2017 and 2016, Valvoline's investments in these unconsolidated affiliates were $30 million and $26 million , respectively. Judgment regarding the level of influence over each investment includes considering key factors such as the Company's ownership interest, representation on the board of directors, and participation in policy-making decisions. The Company's proportionate share of the net income or loss of these companies is included in the Consolidated Statements of Comprehensive Income.

The Company evaluates equity method investments for impairment whenever events or changes in circumstances indicate that the carrying amount of the investment might not be recoverable. Factors considered by the Company when reviewing an equity method investment for impairment include the length of time and extent to which the fair value of the equity method investment has been less than cost, the investee’s financial condition and near-term prospects, and the intent and ability to hold the investment for a period of time sufficient to allow for anticipated recovery. An impairment that is other-than-temporary is recognized in the period identified.

Pension and other postretirement benefit plans

Prior to the Contribution in fiscal 2016, Valvoline employees were eligible to participate in pension and other postretirement benefit plans sponsored by Ashland in many of the countries where the Company does business. Prior to the Contribution, the Company accounted for its participation in Ashland-sponsored pension and other postretirement benefit plans as a participation in a multiemployer plan, and recognized its allocated portion of net periodic benefit cost based on Valvoline-specific plan participants. In conjunction with the Contribution, certain of Ashland's pension and other postretirement benefit obligations and plan assets were transferred to and assumed by the Company, for which Valvoline accounts for as single-employer plans prospectively from the Contribution in late fiscal 2016. As single-employer plans, Valvoline recognizes the net liabilities and the full amount of any costs or gains. Valvoline also had certain international single-employer pension plans prior to the Contribution for which the net liabilities and associated costs have been recognized in the historical periods.

The majority of U.S. pension plans have been closed to new participants since January 1, 2011 and effective September 30, 2016, the accrual of pension benefits for participants were frozen. In addition, most foreign pension plans are closed to new participants while those that remain open relate to areas where local laws require plans to operate within the applicable country. In addition, Valvoline sponsors healthcare and life insurance plans for certain qualifying retired or disabled employees. During March 2016, these other postretirement benefit plans were amended to reduce retiree life and medical benefits effective October 1, 2016 and January 1, 2017, respectively.

The funded status of Valvoline’s pension and other postretirement benefit plans is recognized in the Consolidated Balance Sheets. The funded status is measured as the difference between the fair value of plan assets and the benefit obligation at September 30, the measurement date, and whenever a remeasurement is triggered. The fair value of plan assets represents the current market value of assets held by irrevocable trust funds for the sole benefit of participants. For defined benefit pension plans, the benefit obligation is the projected benefit obligation (“PBO”) and for other postretirement benefit plans, the benefit obligation is the accumulated postretirement benefit obligation (“APBO”). The PBO represents the actuarial present value of benefits expected to be paid upon retirement based on estimated future compensation levels. The APBO represents the actuarial present value of other postretirement benefits attributed to employee services already rendered. The measurement of the benefit obligations is based on estimates and actuarial valuations. These valuations reflect the terms of the plans and use participant-specific information such as compensation, age and years of service, as well as certain key assumptions that require significant judgment, including, but not limited to, estimates of discount rates, expected return on plan assets, rate of compensation increases, interest rates and mortality rates.

Valvoline recognizes the change in the fair value of plan assets and net actuarial gains and losses annually in the fourth quarter of each fiscal year and whenever a plan is determined to qualify for a remeasurement. Such gains and losses may be related to actual results that differ from assumptions as well as changes in assumptions, which may occur each year. The remaining components of pension and other postretirement benefits expense are recorded ratably on a quarterly basis. The service cost component of pension and other postretirement benefits costs is allocated to each reportable segment on a ratable basis, while the remaining non-service and remeasurement components of pension and other postretirement benefits costs are excluded from segment results and included in Unallocated and other as those items are not included in the evaluation of segment performance.

Commitments and contingencies

Liabilities for loss contingencies arising from claims, assessments, litigation, fines, penalties and other sources are recorded when it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Legal costs such as outside counsel fees and expenses are charged to expense in the period incurred and are recorded in Selling, general and administrative expense in the Consolidated Statements of Comprehensive Income.

Valvoline partially insures its workers’ compensation claims and other general business insurance needs. Prior to the IPO, Ashland charged Valvoline for the applicable portion of costs. As part of the Contribution, Valvoline was transferred certain active and legacy Ashland insurance reserves. Valvoline records accrued liabilities related to these costs based upon specific claims filed and loss development factors, which contemplate a number of factors including claims history and expected trends. These loss development factors are developed in consultation with external actuaries.

Revenue recognition

Sales generally are recognized when persuasive evidence of an arrangement exists, products are delivered or services are provided to customers, the sales price is fixed or determinable and collectability is reasonably assured. Valvoline reports all sales net of tax assessed by qualifying governmental authorities. Certain shipping and handling costs paid by the customer are recorded in sales, while those costs paid by Valvoline are recorded in cost of sales.

Sales rebates and discounts, consisting primarily of promotional rebates and customer pricing discounts, are offered through various programs to customers. Sales are recorded net of these rebates and discounts totaling $360 million , $388 million and $345 million in the Consolidated Statements of Comprehensive Income for the years ended September 30, 2017, 2016 and 2015, respectively. Sales rebates and discounts are recognized as incurred, generally at the time of the sale, or over the term of the sales contract. Valvoline bases its estimates on historical rates of customer discounts and rebates as well as the specific identification of discounts and rebates expected to be realized.

Franchise revenue is also included within sales and was $28 million , $25 million , and $22 million during 2017, 2016, and 2015, respectively. Franchise revenue generally consists of initial franchise fees and royalties. Initial franchise fees are recognized when all material obligations have been substantially performed and the store has opened for business. Franchise royalties are based upon a percentage of monthly sales of the franchisees and are recognized in the month such sales occur.

Expense recognition

Cost of sales include material and production costs, as well as the costs of inbound and outbound freight, purchasing and receiving, inspection, warehousing, internal transfers and all other distribution network costs. Selling, general and administrative expenses are expensed as incurred and include sales and marketing costs, advertising, customer support, environmental remediation, and administrative costs, including allocated corporate charges from Ashland for periods prior to the IPO. Advertising costs ($61 million in 2017, $58 million in 2016 and $56 million in 2015) and research and development costs ($13 million in each 2017 and 2016, and $11 million in 2015) are expensed as incurred.

Stock-based compensation

For the periods prior to the Distribution, share-based awards for key Valvoline employees and directors were principally settled in Ashland common stock and expense was allocated to Valvoline based on the awards and terms previously granted. In connection with the Distribution, outstanding Ashland share-based awards held by Valvoline employees were converted to equivalent share-based awards of Valvoline. Stock-based compensation expense is generally recognized based on the grant date fair value of new or modified awards over the requisite vesting period . The Company’s outstanding stock-based compensation awards are primarily classified as equity, with certain liability-classified awards based on award terms and conditions. Valvoline accounts for forfeitures when they occur and recognizes stock-based compensation expense within the Selling, general and administrative expense caption of the Consolidated Statements of Comprehensive Income.

Income taxes

For the periods prior to Distribution, Valvoline’s operating results are included in Ashland’s consolidated U.S., state, and certain Ashland international subsidiaries' income tax returns. For these periods, the income tax provision in these Consolidated Statements of Comprehensive Income has been calculated as if Valvoline was operating on a stand-alone basis and filed separate tax returns in the jurisdictions in which it operates.

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

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

Derivatives

Valvoline's derivative instruments consist of foreign currency exchange contracts, which are accounted for as either assets or liabilities in the Consolidated Balance Sheets at fair value and the resulting gains or losses are recognized as adjustments to earnings. Valvoline does not currently have any derivative instruments that are designated and qualify as hedging instruments.

Fair value measurements

Fair value is defined as an exit price, representing an amount that would be received to sell an asset or the amount paid to transfer a liability in an orderly transaction between market participants at the measurement date. As such, fair value is a market-based measurement determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, the guidance prioritizes the inputs used to measure fair value into the three-tier fair value hierarchy. The fair value hierarchy gives the highest priority to quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). An instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the instrument's fair value measurement.

Except for pension plan assets, which are reviewed on annual basis, the Company reviews the fair value hierarchy classification on a quarterly basis. Changes to the observability of valuation inputs may result in a reclassification of levels for certain securities within the fair value hierarchy. Valvoline measures its financial assets and financial liabilities at fair value based on one or more of the following three valuation techniques:

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

The Company generally uses a market approach, when practicable, in valuing financial instruments. In certain instances, when observable market data is lacking, the Company uses valuation techniques consistent with the income approach whereby future cash flows are converted to a single discounted amount. The Company uses multiple sources of pricing as well as trading and other market data in its process of reporting fair values. The fair values of cash and cash equivalents, trade receivables and accounts payable approximate their carrying values due to the relatively short-term nature of the instruments.

Foreign currency translation

Operations outside the United States are measured primarily using the local currency as the functional currency. Upon consolidation, the results of operations of the subsidiaries and affiliates whose functional currency is other than the U.S. dollar are translated into U.S. dollars at the average exchange rates for the year while assets and liabilities are translated at year-end exchange rates. Adjustments to translate assets and liabilities into U.S. dollars are recorded in the stockholders' equity section of the Consolidated Balance Sheets as a component of accumulated other comprehensive loss and are included in net earnings only upon sale or substantial liquidation of the underlying foreign subsidiary or affiliated company.

Earnings per share

Basic EPS is calculated by dividing net income by the weighted-average number of shares outstanding during the reported period. The calculation of diluted EPS is similar to basic EPS, except that the weighted-average number of shares outstanding includes the additional dilution from potential common stock such as stock-based compensation awards. Refer to Note 17 for information regarding a revision to correct an immaterial error in the net EPS calculations previously reported in the consolidated and condensed consolidated financial statements for the periods prior to and including September 30, 2016. While there were no shares of common stock outstanding prior to Valvoline's IPO, the weighted average number of shares outstanding in these historical periods are based on the 170 million shares of common stock issued to Ashland.

New accounting pronouncements

Accounting Standards Updates Recently Adopted

In April 2015, the Financial Accounting Standards Board (the “FASB”) issued accounting guidance to help entities evaluate the accounting for fees paid by a customer in a cloud computing arrangement. Cloud computing arrangements represent the delivery of hosted services over the internet which includes software, platforms, infrastructure and other hosting arrangements. Under the guidance, customers that gain access to software in a cloud computing arrangement account for the software as internal-use software only if the arrangement includes a software license. Valvoline adopted this standard on a prospective basis on October 1, 2016, and as a result, certain costs related to these arrangements will be expensed when incurred. The adoption of this guidance did not have a material impact on the Company's financial condition, results of operations or cash flows.

In May 2015, the FASB issued accounting guidance which removed the requirement to categorize within the fair value hierarchy all investments for which fair value is measured using the net asset value per share practical expedient. Valvoline adopted this standard on October 1, 2016. Accordingly, certain investments that were measured using the net asset value per share practical expedient have not been categorized within the fair value hierarchy tables and have been separately disclosed. This guidance does not impact the valuation or recognition of these investments, and relevant disclosure amendments have been retrospectively applied to all periods presented in the Notes to Consolidated Financial Statements. Refer to Note 14 for additional information.

In March 2016, the FASB issued new accounting guidance for certain aspects of share-based payments to employees, which includes multiple provisions intended to simplify various aspects of the accounting for share-based payments. In particular, the tax effects of all stock-based compensation awards will be included in income, windfall tax benefits and deficiencies will be reported as discrete items in the interim period when they arise, all tax-related cash flows from share-based payments will be reported as operating activities in the statement of cash flows, the classification of awards as liabilities or equity due to tax withholdings may change, and accounting for forfeitures may change. This guidance is effective for the Company beginning October 1, 2017; however, Valvoline elected to early adopt this guidance in the quarter ended June 30, 2017, with all relevant adjustments applied as of the beginning of the fiscal year. This guidance also allows entities to make an accounting policy election to either estimate the number of awards that are expected to vest or account for forfeitures when they occur. The Company has elected to recognize forfeitures as they occur rather than estimate a forfeiture rate. The impact on Valvoline's consolidated financial statements as a result of adopting this new guidance was not material.

Accounting Standards Updates Issued But Not Yet Effective

In May 2014, the FASB issued accounting guidance outlining a single comprehensive five step model for entities to use in accounting for revenue arising from contracts with customers (ASC 606, Revenue from Contracts with Customers). The new guidance supersedes most current revenue recognition guidance, in an effort to converge the revenue recognition principles within U.S. GAAP. This new guidance also requires entities to disclose certain quantitative and qualitative information regarding the nature, amount, timing and uncertainty of qualifying revenue and cash flows arising from contracts with customers. Entities have the option of using a full retrospective or a modified retrospective approach to adopt the new guidance. This guidance becomes effective for Valvoline on October 1, 2018. Valvoline is in the process of evaluating its revenue streams, as well as the available implementation options, and cannot currently estimate the financial statement impact of adoption, though certain reclassifications are expected to be required in presentation of the Consolidated Statements of Comprehensive Income. The Company expects to complete its implementation assessment in early 2018 and will provide updated disclosures of the anticipated impact of adoption in future filings.

In July 2015, the FASB issued accounting guidance to simplify the subsequent measurement of certain inventories by replacing the current lower of cost or market test with a lower of cost and net realizable value test. The guidance applies only to inventories for which cost is determined by methods other than LIFO and the retail inventory method. This guidance became effective prospectively for Valvoline on October 1, 2017. Valvoline utilizes LIFO to value approximately 72% of its gross inventory and does not expect there to be material differences in the Company's current valuation methodology for its remaining inventory using lower of cost or market to net realizable value.

In February 2016, the FASB issued new accounting guidance related to lease transactions. The primary objective of this guidance is to increase transparency and comparability among organizations by requiring lessees to recognize assets and liabilities on the balance sheet for the rights and obligations created by leases and to disclose key information about leasing arrangements. The presentation of the Consolidated Statements of Comprehensive Income and the Consolidated Statements of Cash Flows is largely unchanged under this guidance. This guidance retains a distinction between finance leases and operating leases, and the classification criteria for distinguishing between finance leases and operating leases are substantially similar to the classification criteria for distinguishing between capital leases and operating leases in the current accounting literature. The guidance will become effective for Valvoline on October 1, 2019. Valvoline is currently evaluating the impact this guidance will have on Valvoline’s consolidated financial statements and developing specific assessment and implementation plans. The Company currently expects that most of its operating lease commitments will be subject to the new standard and recognized as operating lease liabilities and right-of-use assets upon adoption. Thus, the Company expects adoption will result in a material increase to the assets and liabilities on the Consolidated Balance Sheets.

In January 2017, the FASB issued accounting guidance which simplifies the subsequent measurement of goodwill by eliminating the second step of the two-step impairment test under which the implied fair value of goodwill is determined as if the reporting unit were being acquired in a business combination. The guidance instead requires entities to compare the fair value of a reporting unit with its carrying amount and recognize an impairment charge for any amount by which the carrying amount exceeds the reporting unit's fair value. This guidance must be applied prospectively and will become effective for Valvoline on October 1, 2020, with early adoption permitted for interim or annual goodwill impairment tests performed on testing dates after January 1, 2017. Valvoline's annual evaluation of goodwill for impairment is performed as of July 1. As this guidance simplifies the process for measuring impairment, management does not expect there will be an impact on the consolidated financial statements given the Company's historical excess fair value of its reporting units.

In March 2017, the FASB issued accounting guidance that will change how employers who sponsor defined benefit pension and/or postretirement benefit plans present the net periodic benefit cost in the Consolidated Statements of Comprehensive Income. This guidance requires employers to present the service cost component of net periodic benefit cost in the same caption within the Consolidated Statements of Comprehensive Income as other employee compensation costs from services rendered during the period. All other components of the net periodic benefit cost will be presented separately outside of the operating income caption. This guidance must be applied retrospectively and will become effective for Valvoline on October 1, 2018, with early adoption being optional. Valvoline adopted this guidance on October 1, 2017, which will have a significant impact on the presentation of the Consolidated Statements of Comprehensive Income as it will result in a reclassification of current and historical Pension and other postretirement plan non-service income and remeasurement adjustments, net from within operating income to non-operating income beginning with the Quarterly Report on Form 10-Q that will be filed for the first fiscal quarter of 2018.

The FASB issued other accounting guidance during the period that is not currently applicable or expected to have a material impact on Valvoline's financial statements, and therefore, is not described above.

NOTE 3 – FAIR VALUE MEASUREMENTS

Valvoline uses applicable guidance for defining fair value, the initial recording and periodic remeasurement of certain assets and liabilities measured at fair value, and related disclosures for instruments measured at fair value. Fair value accounting guidance establishes a fair value hierarchy, which prioritizes the inputs to valuation techniques used to measure fair value into three broad levels. An instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the instrument's fair value measurement. Valvoline measures assets and liabilities using inputs from the following three levels of fair value hierarchy:

Level 1 - Observable inputs such as unadjusted quoted prices in active markets for identical assets or liabilities.

Level 2 - Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly. These include quoted prices for similar assets or liabilities in active markets and quoted prices for identical or similar assets or liabilities in markets that are not active.

Level 3 - Unobservable inputs for the asset or liability for which there is little, if any, market activity at the measurement date. Unobservable inputs reflect Valvoline's own assumptions about what market participants would use to price the asset or liability. The inputs are developed based on the best information available in the circumstances, which may include Valvoline's own financial data such as internally developed pricing models, DCF methodologies, as well as instruments for which the fair value determination requires significant management judgment.

For assets that are measured using quoted prices in active markets (Level 1), the total fair value is the published market price per unit multiplied by the number of units held without consideration of transaction costs. Assets and liabilities that are measured using significant other observable inputs (Level 2) are primarily valued by reference to quoted prices of similar assets or liabilities in active markets, adjusted for any terms specific to that asset or liability. For all other assets and liabilities for which unobservable inputs are used (Level 3), fair value is derived by using fair value models, such as a DCF model or other standard pricing models that Valvoline considers reasonable.

The following table sets forth, by level within the fair value hierarchy, the Company's financial assets and liabilities that were accounted for at fair value on a recurring basis.

	September 30, 2017		September 30, 2016	
		Quoted prices in active markets for identical assets		Quoted prices in active markets for identical assets
(In millions)	Fair Value	Level 1	Fair Value	Level 1
Assets				
Cash equivalents	$ 46	$ 46	$ 12	$ 12
Foreign currency derivatives	1	1	—	—
Non-qualified trust	30	30	34	$ 34
Total assets at fair value	$ 77	$ 77	$ 46	$ 46
Liabilities				
Foreign currency derivatives	$ 1	$ 1	$ —	$ —
Total liabilities at fair value	$ 1	$ 1	$ —	$ —

There were no Level 2 or 3 financial assets or liabilities that were accounted for at fair value on a recurring basis in fiscal 2017 or 2016. Furthermore, there were no transfers between levels of the fair value hierarchy during fiscal 2017 or 2016.

Cash equivalents

Cash equivalents are included in Cash and cash equivalents on the Consolidated Balance Sheets. The Company's policy is to consider all highly liquid investments with an original maturity of three months or less at the Company's date of purchase to be cash equivalents. The carrying value of cash equivalents approximates fair value because of the short-term maturity of these instruments.

Derivatives

Until the IPO, Valvoline participated in Ashland's centralized derivative programs that engage in certain hedging activities, which Ashland used to manage its exposure to fluctuations in foreign currencies. Gains and losses related to a hedge were either recognized in Ashland's income immediately to offset the gain or loss on the hedged item, or deferred and recorded in the equity section of Ashland's balance sheet as a component of accumulated other comprehensive loss and subsequently recognized in Ashland's income when the underlying hedged item was recognized in earnings. Gains or losses on hedges during the year ended September 30, 2016 were not material and are reflected in Valvoline's Consolidated Statements of Comprehensive Income through allocation from Ashland in Selling, general and administrative expense.

Valvoline began its own derivative program in September 2016 to manage exposure to fluctuations in foreign currency as a result of its global operating activities. The Company uses derivatives not designated as hedging instruments consisting primarily of forward contracts to hedge foreign currency denominated balance sheet exposures and exchange one foreign currency for another for a fixed rate at a future date of twelve months or less. For these derivatives, changes in the fair value are recognized in Selling, general and administrative expense in the Consolidated Statements of Comprehensive Income to offset the gain or loss on the hedged item in the same period as the remeasurement losses and gains of the related foreign currency-denominated exposures. Gains and losses recognized during the years ended September 30, 2017 and 2016 related to changes in fair value of these instruments were not material. The Company utilizes derivative instruments that are purchased exclusively from highly rated financial institutions. The Company had outstanding contracts with notional values of $47 million and $10 million as of September 30, 2017 and 2016, respectively. The fair value of these outstanding contracts were recorded on the Consolidated Balance Sheets as assets or liabilities in Other current assets or Accrued expense and other liabilities, respectively, as shown above at fair market value based upon market price quotations.

Non-qualified trust funds

The Company maintains a non-qualified trust to fund benefit payments for certain of its U.S. non-qualified pension plans, which primarily consists of highly liquid fixed income U.S. government bonds and are classified as Other noncurrent assets in the Consolidated Balance Sheets. Gains and losses related to these investments are immediately recognized within the Consolidated Statements of Comprehensive Income. Fair value measurements for these investments are based on quoted market prices in active markets and are categorized as Level 1.

Long-term debt

The Company's outstanding senior notes consist of $375 million of fixed rate senior unsecured notes issued in July 2016 (the “2024 Notes”) and $400 million of fixed rate senior unsecured notes issued in August 2017 (the “2025 Notes”).

The fair values shown in the table below are based on the prices at which the bonds have recently traded in the market as well as the overall market conditions on the date of valuation, stated coupon rates, the number of coupon payments each year and the maturity dates. The fair value of the debt is included in the Consolidated Balance Sheets at carrying value, rather than fair value, and is therefore excluded from the fair value table above. The fair value of the 2024 Notes and the 2025 Notes is based on quoted market prices, which are Level 1 inputs within the fair value hierarchy. Carrying values shown in the following table are net of unamortized discounts and issuance costs.

	September 30, 2017			September 30, 2016		
(In millions)	Fair value	Carrying value	Unamortized discount and issuance costs	Fair value	Carrying value	Unamortized discount and issuance costs
2024 Notes	$ 401	$ 370	$ 5	$ 394	$ 369	$ 6
2025 Notes	408	394	6	—	—	—
Total	$ 809	$ 764	$ 11	$ 394	$ 369	$ 6

Refer to Note 11 for details of other debt instruments that have variable interest rates, and accordingly, their carrying amounts approximate fair value.

Pension plan assets

Pension plan assets must be measured at least annually in accordance with accounting guidance on employers' accounting for pensions. The fair value measurement guidance requires that the valuation of plan assets comply with its definition of fair value, which is based on the notion of an exit price and the maximization of observable inputs. The fair value measurement guidance does not apply to the calculation of pension and other postretirement obligations since the liabilities are not measured at fair value. Refer to Note 14 for disclosures regarding the fair value of plan assets, including fair value and classification within the fair value hierarchy.

NOTE 4 – ACQUISITIONS AND DIVESTITURES

2017 Acquisitions

During fiscal 2017, Valvoline completed several acquisitions in the Quick Lubes reportable segment, including the acquisition of several stores from Time-It Lube LLC and Time-It Lube of Texas, LP (collectively, “Time-It Lube”) on January 31, 2017. In total, Valvoline acquired 43 locations for an aggregate purchase price of $72 million , of which $4 million was paid in fiscal 2016. Of the $72 million , approximately $66 million was allocated to goodwill and the remainder was allocated to working capital, customer relationships and trade names.

Goodwill is calculated as the excess of the consideration transferred over the net assets acquired and represents the future economic benefits arising from other assets acquired that could not be individually identified and separately recognized. The factors contributing to the recognition of goodwill were based on strategic benefits that are expected to be realized from these acquisitions. All of the goodwill is expected to be deductible for income tax purposes.

2016 Acquisitions

During fiscal 2016, Valvoline completed several acquisitions in the Quick Lubes reportable segment, including the acquisition of OCH International, Inc. (“Oil Can Henry’s”) on February 1, 2016. In total, Valvoline acquired 104 locations, 42 of which were franchise locations. The aggregate purchase price, net of cash acquired for all acquisitions in fiscal 2016 was $79 million . Of the $79 million , $94 million was allocated to goodwill, $16 million to other assets, including working capital; property, plant and equipment; intangible assets; and other noncurrent assets. Valvoline also assumed $11 million of debt, $11 million of current liabilities and $9 million of other noncurrent liabilities.

The factors contributing to the recognition of goodwill were based on strategic benefits that are expected to be realized from these acquisitions. Approximately $83 million of the goodwill recognized in 2016 was not deductible for income tax purposes.

From the date of acquisition through September 30, 2016, the total revenue for Oil Can Henry's company-owned and franchise locations totaled $34 million with operating income of $2 million .

Car Care Products Divestiture

During 2015, Ashland entered into a definitive sale agreement to sell Valvoline's car care product assets within the Core North America reportable segment for $24 million , which included Car Brite™ and Eagle One™ automotive appearance products. Prior to the sale, Valvoline recognized a pre-tax loss of $26 million in 2015 to recognize the assets at fair value less cost to sell, using Level 2 nonrecurring fair value measurements. The loss is reported within the Net loss on acquisition and divestiture caption within the Consolidated Statements of Comprehensive Income. The transaction closed on June 30, 2015 and Valvoline received net proceeds of $19 million after adjusting for certain customary closing costs and final working capital amounts.

The sale of Valvoline's car care product assets did not qualify for discontinued operations treatment since it did not represent a strategic shift that had or will have a major effect on Valvoline's operations and financial results.

Venezuela Equity Method Investment Divestiture

During 2015, Valvoline sold the equity method investment in Venezuela within the International reportable segment. Prior to the sale, Valvoline recognized a $14 million impairment in 2015, for which there was no tax effect, using Level 2 nonrecurring fair value measurements within the Equity and other income caption of the Consolidated Statements of Comprehensive Income.

Valvoline's decision to sell the equity investment and the resulting impairment charge recorded during 2015 was reflective of the continued devaluation of the Venezuelan currency (Bolivar) based on changes to the Venezuelan currency exchange rate mechanisms during the fiscal year. In addition, the continued lack of exchangeability between the Venezuelan bolivar and U.S. dollar had restricted the equity method investee's ability to pay dividends and obligations denominated in U.S. dollars. These exchange regulations and cash flow limitations, combined with other recent Venezuelan regulations and the impact of declining oil prices on the Venezuelan economy, had significantly restricted Valvoline's ability to conduct normal business operations through the joint venture arrangement. Valvoline determined this divestiture did not represent a strategic shift that had or will have a major effect on Valvoline's operations and financial results, and thus, it did not qualify for discontinued operations treatment.

NOTE 5 – EQUITY METHOD INVESTMENTS

Summarized financial information for companies accounted for on the equity method is presented in the following table, along with a summary of the amounts recorded in the consolidated financial statements. The results of operations and amounts recorded by Valvoline as of and for the years ended September 30, 2017 , 2016 and 2015 include results for the Valvoline equity method investment within Venezuela prior to its divestiture in 2015. Refer to Note 4 for further information on this divestiture in 2015. Valvoline has a strategic relationship with Cummins Inc. ("Cummins"), a leading heavy duty engine manufacturer for co-branding products in the heavy duty business and has a 50% interest in joint ventures in India and China and smaller joint ventures in select countries in South America and Asia.

At September 30, 2017 and 2016 , Valvoline's stockholders' deficit included $28 million and $26 million , respectively, of undistributed earnings from affiliates accounted for on the equity method. The summarized financial information for all companies accounted for on the equity method by Valvoline is as of and for the years ended September 30, 2017 , 2016 and 2015 as follows:

(In millions)	2017	2016	2015
Financial position			
Current assets	$ 105	$ 86	
Current liabilities	(69)	(55)	
Working capital	36	31	
Noncurrent assets	25	24	
Noncurrent liabilities	(1)	(2)	
Stockholders' equity	$ 60	$ 53	
Results of operations			
Sales	$ 289	$ 255	$ 275
Income from operations	53	46	48
Net income	25	23	24
Amounts recorded by Valvoline			
Investments and advances	$ 30	$ 26	$ 29
Equity income (loss) [a]	12	12	(2)
Distributions received	8	16	18

(a) 2015 includes a $14 million impairment of the equity method investment in Venezuela as further discussed in Note 4.

NOTE 6 - ACCOUNTS RECEIVABLE

The following summarizes Valvoline's accounts receivable as of the Consolidated Balance Sheet dates:

(In millions)	September 30, 2017	September 30, 2016
Trade and other accounts receivable	$ 390	$ 368
Less: Allowance for doubtful accounts	(5)	(5)
	$ 385	$ 363

Prior to the Distribution in May 2017, Ashland was party to an agreement to sell certain Valvoline customer accounts receivable in the form of drafts or bills of exchange to a financial institution. Each draft constituted an order to pay for obligations of the customer to Ashland arising from the sale of goods to the customer. The intention of the arrangement was to decrease the time accounts receivable is outstanding and increase cash flows as Ashland in turn remitted payment to Valvoline. During fiscal 2017 and prior to the Distribution, there was $40 million of accounts receivable sold, and during the year ended September 30, 2016, there was $126 million of accounts receivable sold to the financial institution under this agreement.

Following the Distribution, Valvoline became party to the arrangement to sell certain customer accounts receivable in the form of draft or bills of exchange to the financial institution. Following Distribution through the remainder of the year ended September 30, 2017 , Valvoline sold $50 million of accounts receivable to the financial institution.

NOTE 7 – INVENTORIES

Inventories are carried at the lower of cost or market value. Inventories are primarily stated at cost using the weighted-average cost method. In addition, certain lubricants with a replacement cost of $83 million at September 30, 2017 and $68 million at September 30, 2016 are valued at cost using the LIFO method.

The following summarizes Valvoline's inventories in the Consolidated Balance Sheets as of September 30:

(In millions)	2017	2016
Finished products	$ 180	$ 149
Raw materials, supplies and work in process	31	21
LIFO reserves	(33)	(29)
Excess and obsolete inventory reserves	(3)	(2)
	$ 175	$ 139

NOTE 8 – PROPERTY, PLANT AND EQUIPMENT

The following table summarizes the various components of property, plant and equipment within the Consolidated Balance Sheets as of September 30:

(In millions)	2017	2016
Land	$ 51	$ 50
Buildings [(a)]	286	216
Machinery and equipment	442	382
Construction in progress	44	79
Total property, plant and equipment	823	727
Accumulated depreciation [(b)]	(432)	(403)
Net property, plant and equipment	$ 391	$ 324

(a) Includes $28 million and $7 million of assets under capitalized leases as of September 30, 2017 and September 30, 2016 respectively.
(b) Includes $4 million and $2 million for assets under capitalized leases as of September 30, 2017 and September 30, 2016 , respectively.

Non-cash accruals included in total property, plant and equipment totaled $39 million and $25 million for the years ended September 30, 2017 and 2016, respectively. There were no non-cash accruals included in total property, plant and equipment in 2015.

The following summarizes property, plant and equipment charges included within the Consolidated Statements of Comprehensive Income.

(In millions)	2017	2016	2015
Depreciation (includes capital leases)	$ 42	$ 38	38

NOTE 9 – GOODWILL AND OTHER INTANGIBLES

Goodwill

The following summarizes the changes in the carrying amount of goodwill for each reportable segment and in total during 2017 and 2016 :

(In millions)	Core North America	Quick Lubes	International	Total
Balance at September 30, 2015	$ 89	$ 41	$ 40	$ 170
Acquisitions [(a)]	—	94	—	94
Balance at September 30, 2016	89	135	40	264
Acquisitions [(b)]	—	66	—	66
Balance at September 30, 2017	$ 89	$ 201	$ 40	$ 330

(a) Relates to the acquisition of Oil Can Henry's in 2016, as well as other smaller Quick Lubes acquisitions in 2016.
(b) Relates to the acquisition of the business assets of Time-It Lube of $44 million and $22 million for the acquisition of 15 additional locations within the Quick Lubes reportable segment during 2017.

Other intangible assets

Valvoline's purchased intangible assets were specifically identified when acquired and have finite lives. These assets are reported in Goodwill and intangibles in the Consolidated Balance Sheets. The following summarizes the gross carrying amounts and accumulated amortization of the Company's intangible assets as of September 30:

	2017			2016		
(In millions)	Gross carrying amount	Accumulated amortization	Net carrying amount	Gross carrying amount	Accumulated amortization	Net carrying amount
Definite-lived intangible assets						
Trademarks and trade names	$ 2	(1)	$ 1	$ 1	$ —	$ 1
Customer relationships	5	(2)	3	3	$ (2)	1
Other intangible assets	1	—	1	1	$ —	1
Total definite-lived intangible assets	$ 8	$ (3)	$ 5	$ 5	$ (2)	$ 3

Amortization expense recognized on intangible assets during the years ended September 30, 2017 and 2016, as well as the expected amortization expense for the next five years is immaterial in each period and in the aggregate.

NOTE 10 – OTHER NONCURRENT ASSETS AND CURRENT AND NONCURRENT LIABILITIES

The following table provides the components of Other noncurrent assets in the Consolidated Balance Sheets as of September 30:

(In millions)	2017	2016
Non-qualified trust investments	$ 30	$ 34
Notes receivable from customers	35	26
Customer incentive programs	11	16
Other	12	13
	$ 88	$ 89

The following table provides the components of Accrued expenses and other liabilities in the Consolidated Balance Sheets as of September 30:

(In millions)	2017	2016
Sales deductions and rebates	$ 54	$ 67
Accrued pension and other postretirement plans	20	24
Incentive compensation	23	21
Accrued vacation	20	18
Accrued taxes (excluding income taxes)	6	14
Accrued payroll	10	9
Accrued interest	7	4
Other current taxes payable	1	5
Other	55	42
	$ 196	$ 204

The following table provides the components of Other noncurrent liabilities in the Consolidated Balance Sheets as of September 30:

(In millions)	2017	2016
Obligations to Ashland [(a)]	$ 74	$ 71
Self-insurance reserves	17	25
Deferred compensation	14	8
Unfavorable leasehold interest	6	7
Capitalized lease obligations	25	6
Financing obligations	33	19
Other	9	7
	$ 178	$ 143

(a) Principally includes amounts due to Ashland under the terms of the Tax Matters Agreement further described in Note 13. Under the Tax Matters Agreement, amounts due to Ashland include the value of certain tax attributes as well as amounts payable to Ashland for various uncertain tax positions and tax-related indemnification obligations.

NOTE 11 – DEBT

The following table summarizes Valvoline’s short-term borrowings and long-term debt at September 30:

(In millions)	2017	2016
2025 Notes	$ 400	$ —
2024 Notes	375	$ 375
Term Loans	285	375
2017 Accounts Receivable Securitization	75	—
Revolver	—	—
Other [(a)]	(11)	(7)
Total debt	$ 1,124	$ 743
Short-term debt	75	—
Current portion of long-term debt	15	19
Long-term debt	$ 1,034	$ 724

(a) At September 30, 2017, Other includes $13 million of debt issuance costs and discounts and $2 million of debt acquired through acquisitions. At September 30, 2016, Other included $9 million of debt issuance costs cost discounts and $2 million of debt acquired through acquisitions.

Senior Notes Due 2025

During August 2017, Valvoline completed the issuance of 4.375% senior unsecured notes due 2025 with an aggregate principal amount of $400 million . The 2025 Notes are guaranteed by each of Valvoline's subsidiaries that guarantee obligations under the existing senior secured credit facility. The net proceeds of the offering of $394 million (after deducting initial purchasers' discounts and debt issuance costs) were used to make a voluntary contribution to the Company's qualified U.S. pension plan.

The 2025 Notes contain customary events of default for similar debt securities, which if triggered may accelerate payment of principal, premium, if any, and accrued but unpaid interest on the 2025 Notes. Such events of default include non-payment of principal and interest, non-performance of covenants and obligations, default on other material debt, and bankruptcy or insolvency. If a change of control repurchase event occurs, Valvoline may be required to offer to purchase the 2025 Notes from the holders thereof. The 2025 Notes are not otherwise required to be repaid prior to maturity, although they may be redeemed at the option of Valvoline at any time prior to their maturity in the manner specified in the indentures governing the 2025 Notes.

Senior Notes Due 2024

During July 2016, Valvoline completed the issuance of 5.500% senior unsecured notes due 2024 with an aggregate principal amount of $375 million . The 2024 Notes are guaranteed by each of Valvoline's subsidiaries that guarantee obligations under the existing senior secured credit facility. The net proceeds of the offering of $370 million (after deducting initial purchasers’ discounts and debt issuance costs) were transferred to Ashland.

The 2024 Notes contain customary events of default for similar debt securities, which if triggered may accelerate payment of principal, premium, if any, and accrued but unpaid interest on the 2024 Notes. Such events of default include non-payment of principal and interest, non-performance of covenants and obligations, default on other material debt, and bankruptcy or insolvency. If a change of control repurchase event occurs, Valvoline may be required to offer to purchase the 2024 Notes from the holders thereof. The 2024 Notes are not otherwise required to be repaid prior to maturity, although they may be redeemed at the option of Valvoline at any time prior to their maturity in the manner specified in the indentures governing the 2024 Notes.

Senior Credit Agreement

The 2016 Senior Credit Agreement provides for an aggregate principal amount of $1,325 million in senior secured credit facilities (“2016 Credit Facilities”), comprised of (i) a five -year $875 million term loan A facility (“Term Loans”) and (ii) a five -year $450 million revolving credit facility (including a $100 million letter of credit sublimit) (“Revolver”).

On September 26, 2016, Valvoline borrowed the full $875 million available under the Term Loans, resulting in approximately $865 million of net proceeds (after deducting fees and expenses). On September 27, 2016, Valvoline borrowed $137 million under the Revolver. The net proceeds of these borrowings under the Term Loans and Revolver were transferred to Ashland. On September 28, 2016, Valvoline used $637 million of the net proceeds received from the IPO to repay $500 million of the $875 million outstanding under the Term Loans and the full $137 million balance outstanding under the Revolver. The 2016 Credit Facilities are guaranteed by Valvoline's existing and future subsidiaries (other than certain immaterial subsidiaries, joint ventures, special purpose financing subsidiaries, regulated subsidiaries, foreign subsidiaries and certain other subsidiaries), and are secured by a first-priority security interest in substantially all the personal property assets, and certain real property assets, of Valvoline and the guarantors, including all or a portion of the equity interests of certain of Valvoline's domestic subsidiaries and first-tier foreign subsidiaries. The 2016 Credit Facilities may be prepaid at any time without premium.

At Valvoline's option, the loans issued under the 2016 Senior Credit Agreement bear interest at either LIBOR or an alternate base rate, in each case plus the applicable interest rate margin. The interest rate fluctuates between LIBOR plus 1.500% per annum and LIBOR plus 2.500% per annum (or between the alternate base rate plus 0.500% per annum and the alternate base rate plus 1.500% annum), based upon Valvoline's corporate credit ratings or the consolidated first lien net leverage ratio (as defined in the 2016 Senior Credit Agreement).

The 2016 Senior Credit Agreement contains usual and customary representations and warranties, and usual and customary affirmative and negative covenants, including limitations on liens, additional indebtedness, investments, restricted payments, asset sales, mergers, affiliate transactions and other customary limitations, as well as financial covenants (including maintenance of a maximum consolidated leverage ratio and a minimum consolidated interest coverage ratio). As of the end of any fiscal quarter, the maximum consolidated leverage ratio and minimum consolidated interest coverage ratio permitted under the 2016 Senior Credit Agreement are 4.5 and 3.0 , respectively.

As of September 30, 2017 , Valvoline is in compliance with all covenants under the 2016 Senior Credit Agreement. As of September 30, 2017 and 2016, there were no amounts outstanding on the Revolver. Total borrowing capacity remaining under the 2016 Senior Credit Agreement was $436 million under the Revolver, due to a reduction of $14 million for letters of credit at September 30, 2017 .

Accounts Receivable Securitization

In November 2016, Valvoline entered into a $125 million accounts receivable securitization facility (the "2017 Accounts Receivable Securitization") with various financial institutions. The Company may from time to time, obtain up to $125 million (in the form of cash or letters of credit) through the sale of an undivided interest in its accounts receivable. The agreement has a term of one year but is extendable at the discretion of the Company and the financial institutions. The Company accounts for the 2017 Accounts Receivable Securitization as secured borrowings, which are classified as Short-term debt, and the receivables sold remain in Accounts receivable in the Consolidated Balance Sheets.

During the first quarter of 2017, Valvoline borrowed $75 million under the 2017 Accounts Receivable Securitization and used the net proceeds to repay an equal amount of the Term Loans. As a result, the Company recognized an immaterial charge related to the accelerated amortization of previously capitalized debt issuance costs, which is included in Net interest and other financing expense in the Consolidated Statements of Comprehensive Income for the year ended September 30, 2017. At September 30, 2017, $75 million was outstanding and the total borrowing capacity remaining under the 2017 Accounts Receivable Securitization was up to $50 million . The weighted average interest rate for this instrument was 1.8% for the year ended September 30, 2017.

Deferred Debt Issuance Costs and Discounts

As of September 30, 2017 and 2016, Valvoline had approximately $16 million and $13 million , respectively, in deferred debt issuance costs and discounts, comprised of $3 million in both periods in Other noncurrent assets related to the Revolver as there was no balance outstanding and the remainder recorded in Long-term debt as a direct reduction to the related debt obligations on the Consolidated Balance Sheets. During fiscal 2017, Valvoline recorded an additional $6 million in deferred debt issuance costs and discounts related to the 2025 Notes and $3 million in amortization expense in Net interest and other financing expense in the Consolidated Statements of Comprehensive Income, which included $1 million of accelerated amortization due to the repayment on the Term Loans in connection with the 2017 Accounts Receivable Securitization borrowing. During fiscal 2016, Valvoline deferred debt issuance costs and discounts of $17 million , of which approximately $4 million of amortization was accelerated as a result of the repayment on the Term Loans. Debt issuance costs and discounts that are incurred by the Company in connection with the issuance of debt are deferred and generally amortized to interest expense using the effective interest method over the contractual term of the underlying indebtedness.

Long-term Debt Maturities

The future estimated maturities of long-term debt, excluding debt issuance costs and discounts, are as follows:

(In millions) **Year ending September 30**		
2018	$	90
2019		30
2020		30
2021		211
2022		—
Thereafter		776
Total	$	1,137

NOTE 12 – LEASE COMMITMENTS

Valvoline and its subsidiaries are lessees of office buildings, Quick Lubes stores, transportation equipment, warehouses and storage facilities, other equipment, and other facilities and properties under leasing agreements that expire at various dates. Capitalized lease obligations are primarily included in Other noncurrent liabilities while capital lease assets are included in Net property, plant and equipment.

As of September 30, 2017, future minimum rental payments for operating leases, capital leases and other financing obligations are as follows:

(In millions)		Operating leases [a]		Capital leases and financing obligations
2018	$	21	$	6
2019		19		6
2020		14		7
2021		11		6
2022		10		6
Thereafter		38		52
Total future minimum lease payments	$	113	$	83

(a) Minimum payments have not been reduced by minimum sublease rentals of $5 million due in the future under noncancelable subleases.

Rental expense under operating leases for operations was as follows for the years ended September 30:

(In millions)		2017		2016		2015
Minimum rentals (including rentals under short-term leases)	$	18	$	15	$	12
Contingent rentals		2		2		2
Sublease rental income		(1)		(1)		(1)
	$	19	$	16	$	13

NOTE 13 – INCOME TAXES

For the years ended September 30, income tax expense consisted of the following:

(In millions)	2017	2016	2015
Current			
Federal	$ 47	$ 99	$ 81
State	8	24	16
Foreign	14	12	13
	69	135	110
Deferred			
Federal [(a)]	106	14	(5)
State [(b)]	12	2	(1)
Foreign	(1)	(3)	(3)
	117	13	(9)
Income tax expense	$ 186	$ 148	$ 101

(a) Federal deferred income taxes of $106 million net of $96 million operating loss generated in the current year.
(b) State deferred income taxes of $12 million net of $10 million operating loss generated in the current year and a $4 million valuation allowance release.

Deferred income taxes are provided for income and expense items recognized in different years for tax and financial reporting purposes. As of September 30, 2017 , management intends to indefinitely reinvest approximately $47 million of foreign earnings. Because these earnings are considered indefinitely reinvested, no U.S. tax provision has been accrued related to the repatriation of these earnings, and it is not practicable to estimate the amount of U.S. tax that might be payable if these earnings were ever to be remitted.

Temporary differences that give rise to significant deferred tax assets and liabilities are presented in the following table as of September 30:

(In millions)	2017	2016
Deferred tax assets		
Federal net operating loss carryforwards [a]	$ 96	$ —
Foreign net operating loss carryforwards [b]	1	1
State net operating loss carryforwards [c]	28	18
Employee benefit obligations	132	351
Compensation accruals	29	17
Environmental, self-insurance and litigation reserves (net of receivables)	6	10
Credit carryforwards [d]	13	20
Other items	7	5
Valuation allowances [e]	(8)	(12)
Total deferred tax assets	304	410
Deferred tax liabilities		
Goodwill and other intangibles [f]	3	—
Property, plant and equipment	17	21
Unremitted earnings	3	2
Total deferred tax liabilities	23	23
Net deferred tax asset	$ 281	$ 387

(a) Gross federal net operating loss carryforwards of $273 million will expire in 2037.
(b) Gross foreign net operating loss carryforwards of $5 million will expire in the years 2020 to 2037.
(c) Apportioned net operating loss carryforwards of $620 million will expire in future years as follows: $8 million in 2019, and the remaining balance in the years 2020 to 2037.
(d) Credit carryforwards consist primarily of foreign tax credits of $5 million expiring in 2027, research and development credits of $7 million expiring in the years 2034 to 2037 and alternative minimum tax credits of $1 million with no expiration date.
(e) Valuation allowances primarily relate to certain state and foreign net operating loss carryforwards, and certain other deferred tax assets.
(f) The total gross amount of goodwill as of September 30, 2017 expected to be deductible for tax purposes is $79 million .

As of September 30, 2017 and 2016 , valuation allowances of $8 million and $12 million , respectively, were recorded on the Consolidated Balance Sheets related to deferred tax assets that are not expected to be realized or realizable.

The U.S. and foreign components of income before income taxes and a reconciliation of the statutory federal income tax with the provision for income taxes follow.

(In millions)	2017	2016	2015
Income before income taxes			
United States [(a)]	$ 433	$ 382	$ 245
Foreign	57	39	52
Total income before income taxes	$ 490	$ 421	$ 297
Income taxes computed at U.S. statutory rate (35%)	$ 171	$ 147	$ 104
Increase (decrease) in amount computed resulting from			
Uncertain tax positions	2	3	1
State taxes	17	16	9
International rate differential	(7)	(5)	(8)
Permanent items [(b)]	(8)	(11)	(5)
Tax Matters Agreement activity	10	—	—
Other items	1	(2)	—
Income tax expense	$ 186	$ 148	$ 101

(a) A significant component of the fluctuations within this caption relates to the remeasurements of the U.S. pension and other postretirement plans.
(b) Permanent items in each year relate primarily to the domestic manufacturing deduction and income from equity affiliates. Further, 2017 includes adjustments related to certain non-deductible separation costs of $2 million , and 2015 includes adjustments related to the sale of the Venezuela joint venture of $6 million .

Income tax expense for the year ended September 30, 2017 was $186 million or an effective tax rate of 38.0% compared to an expense of $148 million or an effective tax rate of 35.2% for the year ended September 30, 2016 and expense of $101 million or an effective tax rate of 34.0% for the year ended September 30, 2015. The increase in the 2017 and 2016 effective tax rates is partially due to the increase in income from pension and other postretirement benefits that generated significant income amounts in higher tax rate jurisdictions. Additionally, in fiscal 2017, the effective tax rate was impacted by income tax expense resulting from the Tax Matters Agreement activity with Ashland, certain non-deductible separation costs, and the partial loss of certain tax deductions from the $394 million voluntary contribution to the U.S. qualified pension plan, partially offset by a benefit from a state valuation allowance release. For fiscal years 2017 through 2015, the effective tax rate was impacted favorably by the lower tax rate on foreign earnings and net favorable permanent items. These favorable items are offset by the unfavorable impact of state taxes, and these adjustments net to an immaterial overall impact to the effective tax rate for each year.

Unrecognized tax benefits

U.S. GAAP prescribes a recognition threshold and measurement attribute for the accounting and financial statement disclosure of tax positions taken or expected to be taken in a tax return. The evaluation of a tax position is a two-step process. The first step requires Valvoline to determine whether it is more likely than not that a tax position will be sustained upon examination based on the technical merits of the position. The second step requires Valvoline to recognize in the financial statements each tax position that meets the more likely than not criteria, measured at the amount of benefit that has a greater than 50% likelihood of being realized. Valvoline had $10 million and $8 million of unrecognized tax benefits at September 30, 2017 and 2016 , respectively. As of September 30, 2017 , the total amount of unrecognized tax benefits that, if recognized, would affect the tax rate was $10 million . The remaining unrecognized tax benefits relate to tax positions for which ultimate deductibility is highly certain but for which there is uncertainty as to the timing of such deductibility. Recognition of these tax benefits would not have an impact on the effective tax rate.

Valvoline recognizes interest and penalties related to uncertain tax positions as a component of income tax expense in the Consolidated Statements of Comprehensive Income. Such interest and penalties were immaterial in each of the years ended September 30, 2017 , 2016 and 2015 . Valvoline had $1 million in interest and penalties related to unrecognized tax benefits accrued as of September 30, 2017 and 2016 .

The table below is a rollforward of the changes in gross unrecognized tax benefits for the past three fiscal years:

(In millions)		
Balance at September 30, 2014	$	4
Increases related to positions taken on items from prior years		1
Balance at September 30, 2015		5
Increases related to positions taken on items from prior years		2
Increases related to positions taken in the current year		1
Balance at September 30, 2016		8
Increases related to positions taken in the current year		2
Balance at September 30, 2017	$	10

From a combination of statute expirations and audit settlements in the next twelve months, Valvoline expects no significant decrease in the amount of accrual for uncertain tax positions. For the remaining balance as of September 30, 2017 , it is reasonably possible that there could be changes to the amount of uncertain tax positions due to activities of the taxing authorities, settlement of audit issues, reassessment of existing uncertain tax positions, or the expiration of applicable statute of limitations; however, Valvoline is not able to estimate the impact of these items at this time.

Valvoline or one of its subsidiaries files income tax returns in the U.S. federal jurisdiction and various state and foreign jurisdictions, or it is included in a consolidated return in these jurisdictions. Foreign taxing jurisdictions significant to Valvoline include Australia, Canada, Mexico, China, Singapore, India and the Netherlands. Valvoline is subject to U.S. federal income tax examinations, either directly or as part of a consolidated return, by tax authorities for periods after September 30, 2011 and U.S. state income tax examinations by tax authorities for periods after September 30, 2006. With respect to countries outside of the United States, with certain exceptions, Valvoline's foreign subsidiaries are subject to income tax audits for years after 2006.

Tax Matters Agreement

For the periods prior to the separation from Ashland and Distribution, Valvoline is included in Ashland's consolidated U.S. and state income tax returns and in tax returns of certain Ashland international subsidiaries (collectively, the "Ashland Group Returns"). Under the Tax Matters Agreement between Valvoline and Ashland that was entered into on September 22, 2016, Ashland will generally make all necessary tax payments to the relevant tax authorities with respect to Ashland Group Returns, and Valvoline will make tax sharing payments to Ashland, inclusive of tax attributes utilized. The amount of the tax sharing payments will generally be determined as if Valvoline and each of its relevant subsidiaries included in the Ashland Group Returns filed their own consolidated, combined or separate tax returns for the period from the IPO to Distribution that include only Valvoline and/or its relevant subsidiaries, as the case may be. During fiscal 2017, Valvoline made $48 million in net tax-sharing payments to Ashland for the period prior to Distribution. In addition, Valvoline recognized a $16 million benefit in Selling, general and administrative expense for a reduction in amounts due to Ashland under the Tax Matters Agreement as a result of Ashland's estimated utilization of Valvoline tax attributes in the Ashland Group Returns. This benefit was offset by additional income tax expense of $16 million .

For taxable periods that begin on or after the day after the date of Distribution, Valvoline is not included in any Ashland Group Returns and will file tax returns that include only Valvoline and/or its subsidiaries, as appropriate. Valvoline will not be required to make tax sharing payments to Ashland for those taxable periods. Nevertheless, Valvoline has (and will continue to have following Distribution) joint and several liability with Ashland to the U.S. Internal Revenue Service ("IRS") for the consolidated U.S. federal income taxes of the Ashland consolidated group for the taxable periods in which Valvoline was part of the Ashland consolidated group.

The Tax Matters Agreement also generally provides that Valvoline has indemnified Ashland for the following items:

- Taxes of Valvoline for all taxable periods that begin on or after the day after the date of the Distribution;
- Taxes of Valvoline for the period between the IPO and full separation from Ashland and Distribution that are not attributable to Ashland Group Returns;
- Taxes for the pre-IPO period that arise on audit or examination and are directly attributable to the Valvoline business;
- Certain U.S. federal, state or local taxes for the pre-IPO period of Ashland and/or its subsidiaries for that period that arise on audit or examination and are directly attributable to neither the Valvoline business nor the Ashland chemicals business;
- Certain tax attributes inherited from Ashland as the result of the Contribution from Ashland; and
- Transaction Taxes (as defined below) that are allocated to Valvoline under the Tax Matters Agreement.

Total liabilities related to these and other obligations owed to Ashland under the Tax Matters Agreement are $62 million and $66 million at September 30, 2017 and 2016, respectively. The net liability at September 30, 2017 consisted of $1 million recorded in Accrued expenses and other liabilities and $61 million recorded in Other noncurrent liabilities in the Consolidated Balance Sheets. As of September 30, 2016, the net liability consisted of $5 million of receivables recorded in Other current assets and $71 million recorded in Other noncurrent liabilities in the Consolidated Balance Sheets.

The Tax Matters Agreement also provides that Valvoline indemnify Ashland for any taxes (and reasonable expenses) resulting from the failure of the Distribution to qualify for non-recognition of gain and loss or certain reorganization transactions related to the Contribution or the Distribution to qualify for their intended tax treatment ("Transaction Taxes"), where the taxes result from (1) breaches of covenants (including covenants containing the restrictions described below that are designed to preserve the tax-free nature of the Stock Distribution), (2) the application of certain provisions of U.S. federal income tax law to the Distribution with respect to acquisitions of Valvoline's common stock or (3) any other actions that Valvoline knows or reasonably should expect would give rise to such taxes. The Tax Matters Agreement also requires Valvoline to indemnify Ashland for a portion of certain other Transaction Taxes allocated to Valvoline based on Valvoline's market capitalization relative to the market capitalization of Ashland.

Valvoline will have either sole control, or joint control with Ashland, over any audit or examination related to taxes for which Valvoline is required to indemnify Ashland.

The Tax Matters Agreement imposes certain restrictions on Valvoline and its subsidiaries (including restrictions on share issuances or repurchases, business combinations, sales of assets and similar transactions) that are designed to preserve the tax-free nature of the Distribution. These restrictions will apply for the two - year period after the Distribution. However, Valvoline will be able to engage in an otherwise restricted action if Valvoline obtains an appropriate opinion from counsel or ruling from the IRS.

NOTE 14 – EMPLOYEE BENEFIT PLANS

Pension and other postretirement plans

Prior to the Contribution in fiscal 2016, Valvoline employees were eligible to participate in pension and other postretirement benefit plans sponsored by Ashland in many of the countries where the Company does business. Prior to the Contribution, the Company accounted for its participation in Ashland-sponsored pension and other postretirement benefit plans as a participation in a multiemployer plan, and recognized its allocated portion of net periodic benefit cost based on Valvoline-specific plan participants. In conjunction with the Contribution, certain of Ashland's pension and other postretirement benefit obligations and plan assets were transferred to and assumed by the Company, for which Valvoline accounts for as single-employer plans prospectively from the Contribution in late fiscal 2016. As single-employer plans, Valvoline recognizes the net liabilities and the full amount of any costs or gains. Valvoline also had certain international single-employer pension plans prior to the Contribution for which the net liabilities and associated costs have been recognized in the historical periods.

Valvoline recognizes the funded status of each applicable plan on the Consolidated Balance Sheets whereby each underfunded plan is recognized as a liability. Changes in the fair value of plan assets and net actuarial gains or losses are recognized upon remeasurement, which is at least annually in the fourth quarter of each year.

The majority of U.S. pension plans have been closed to new participants since January 1, 2011 and effective September 30, 2016, the accrual of pension benefits for participants were frozen. In addition, most foreign pension plans are closed to new participants while those that remain open relate to areas where local laws require plans to operate within the applicable country.

In addition, Valvoline sponsors healthcare and life insurance plans for certain qualifying retired or disabled employees. During March 2016, these other postretirement benefit plans were amended to reduce retiree life and medical benefits effective October 1, 2016 and January 1, 2017, respectively. The effect of these plan amendments resulted in a remeasurement gain of $8 million within Pension and other postretirement plan non-service income and remeasurement adjustments, net in the Consolidated Statements of Comprehensive Income during the first fiscal quarter of 2017. These plans have limited the annual per capita costs to an amount equivalent to base year per capita costs, plus annual increases of up to 1.5% per year for costs incurred. As a result, health care cost trend rates do not have a significant impact on the Company's future obligations for these plans. The assumed pre-65 health care cost trend rate as of September 30, 2017 was 7.9% and continues to be reduced to 4.5% in 2037 and thereafter.

Pension annuity programs

On August 29, 2017, Valvoline used pension assets to purchase a non-participating annuity contract from an insurer that will pay and administer future pension benefits for approximately 6,000 participants within the qualified U.S. pension plan. Valvoline transferred approximately $585 million of the outstanding pension benefit obligation in exchange for pension trust assets whose value approximated the liability value.

On September 15, 2016, Valvoline used pension assets to purchase a non-participating annuity contract from an insurer that will pay and administer future pension benefits for 14,800 participants within the qualified U.S. pension plan. Valvoline transferred approximately $378 million of the outstanding pension benefit obligation in exchange for pension trust assets whose value approximated the liability value.

The annuity purchase transactions did not generate a material settlement adjustment during 2017 or 2016. The insurers have unconditionally and irrevocably guaranteed the full payment of benefits to plan participants associated with the annuity purchase and benefit payments will be in the same form that was in effect under the plan. The insurers have also assumed all investment risk associated with the pension assets that were delivered as annuity contract premiums.

Components of net periodic benefit costs (income)

For segment reporting purposes, service cost is allocated to each reportable segment, while all other net periodic benefit costs are recorded within Unallocated and other. The following table summarizes the components of pension and other postretirement plans net periodic benefit costs (income) and the assumptions used in this determination for the years ended September 30:

	Pension benefits			Other postretirement benefits		
(In millions)	2017	2016	2015	2017	2016	2015
Net periodic benefit (income) costs						
Service cost	$ 2	$ 3	$ 1	$ —	$ —	$ —
Interest cost	86	11	3	1	—	—
Expected return on plan assets	(145)	(17)	(3)	—	—	—
Amortization of prior service credit (a)	—	—	—	(12)	(1)	—
Actuarial (gain) loss	(63)	(42)	2	(5)	—	—
Pre-separation allocation from Ashland (b)	—	21	43	—	—	—
	$ (120)	$ (24)	$ 46	$ (16)	$ (1)	$ —
Weighted-average plan assumptions (c)						
Discount rate for service cost (d)	2.15%	4.10%	4.08%	2.95%	4.25%	—
Discount rate for interest cost (d)	2.84%	3.23%	4.08%	2.64%	2.92%	—
Rate of compensation increase	2.99%	3.23%	3.15%	—	—	—
Expected long-term rate of return on plan assets	6.56%	6.77%	5.34%	—	—	—

(a) Other postretirement plan changes announced in March 2016 resulted in negative plan amendments that are being amortized within this caption during 2017 and 2016.

(b) The pre-Contribution allocation from Ashland are costs in fiscal 2015 and 2016 until the transfer of plans to Valvoline at September 1, 2016. The allocation during 2016 and 2015 is comprised of service cost of $7 million and $8 million , respectively; non-service income of $10 million and $9 million , respectively; and actuarial losses of $24 million and $44 million , respectively.

(c) The plan assumptions are a blended weighted-average rate for Valvoline’s U.S. and non-U.S. plans. The assumptions for 2015 only reflect Valvoline stand-alone plans. The 2016 assumptions reflect a combination of a full year of Valvoline stand-alone plans and one month for the plans transferred to Valvoline on September 1, 2016. The U.S. pension plans represented approximately 97% of the total pension benefits projected benefit obligation at September 30, 2017. Other postretirement benefit plans consist of U.S. and Canada, with the U.S. plan representing approximately 76% of the total other postretirement projected benefit obligation at September 30, 2017. Non-U.S. plans use assumptions generally consistent with those of U.S. plans.

(d) Weighted-average discount rates reflect the adoption of the full yield curve approach in 2016.

The following table shows the amortization of prior service cost (credit) recognized in accumulated other comprehensive loss.

	Pension benefits		Other postretirement benefits	
(In millions)	2017	2016	2017	2016
Transfer in of unrecognized prior service cost (credit)	$ —	$ 1	$ —	$ (81)
Amortization of prior service credit	—	—	12	1
Total amount recognized in accumulated other comprehensive income	—	1	12	(80)
Net periodic benefit income	(120)	(24)	(16)	(1)
Total amount recognized in net periodic benefit income and accumulated other comprehensive income	$ (120)	$ (23)	$ (4)	$ (81)

Amounts to be Recognized

The following table shows the amount of prior service credit in accumulated other comprehensive loss at September 30, 2017 that is expected to be recognized as a component of net periodic benefit cost (income) during the fiscal 2018:

(In millions)	Pension benefits	Other postretirement benefits
Prior service credit	$ —	$ (12)

Obligations and funded status

Summaries of the change in benefit obligations, plan assets, funded status of the plans, amounts recognized in the balance sheet, and assumptions used to determine the benefit obligations for 2017 and 2016 follow for the Valvoline-sponsored pension and other postretirement benefit plans included within the Consolidated Balance Sheets.

(In millions)	Pension benefits 2017	Pension benefits 2016	Other postretirement benefits 2017	Other postretirement benefits 2016
Change in benefit obligations				
Benefit obligations at October 1	$ 3,138	$ 59	$ 73	$ —
Transfer from Ashland	—	3,523	—	75
Service cost	2	3	—	—
Interest cost	86	11	1	—
Participant contributions	—	—	3	1
Benefits paid	(210)	(20)	(16)	(3)
Actuarial (gain)	(60)	(66)	(5)	—
Foreign currency exchange rate changes	4	1	1	—
Transfers in	6	—	—	—
Curtailment/Settlement	(585)	(373)	—	—
Benefit obligations at September 30	$ 2,381	$ 3,138	$ 57	$ 73
Change in plan assets				
Value of plan assets at October 1	$ 2,307	$ 46	$ —	$ —
Transfer from Ashland	—	2,653	—	—
Actual return on plan assets	148	(7)	—	—
Employer contributions	412	6	13	2
Participant contributions	—	—	3	1
Benefits paid	(210)	(20)	(16)	(3)
Foreign currency exchange rate changes	3	2	—	—
Curtailment/Settlement	(585)	(373)	—	—
Transfers in	6	—	—	—
Value of plan assets at September 30	$ 2,081	$ 2,307	$ —	$ —
Unfunded status of the plans	$ (300)	$ (831)	$ (57)	$ (73)
Amounts recognized in the Consolidated Balance Sheets				
Current benefit liabilities	$ (11)	$ (11)	(8)	(11)
Noncurrent benefit liabilities	(289)	(820)	(49)	(62)
Net amount recognized	$ (300)	$ (831)	$ (57)	$ (73)
Amounts recognized in accumulated other comprehensive income (loss)				
Prior service cost (credit)	$ 2	$ 2	$ (68)	$ (80)
Total amount in accumulated other comprehensive income (loss)	$ 2	$ 2	$ (68)	$ (80)
Weighted-average plan assumptions				
Discount rate	3.76%	3.54%	3.48%	2.92%
Rate of compensation increase	3.13%	3.10%	—	—

The accumulated benefit obligation for all pension plans was $2.4 billion at September 30, 2017 and $3.1 billion at September 30, 2016 . Information for pension plans with a benefit obligation in excess of plan assets follows for the plans included within the Consolidated Balance Sheets as of September 30:

	2017		2016	
(In millions)	Benefit Obligation	Plan Assets	Benefit Obligation	Plan Assets
Plans with projected benefit obligation in excess of plan assets	$ 2,381	$ 2,081	$ 3,138	$ 2,307
Plans with accumulated benefit obligation in excess of plan assets	2,368	2,072	3,125	2,298

Plan assets

The weighted average expected long-term rate of return on pension plan assets was 6.56% and 6.77% for 2017 and 2016 , respectively. The basis for determining the expected long-term rate of return is a combination of future return assumptions for various asset classes in Valvoline's investment portfolio, historical analysis of previous returns, market indices and a projection of inflation.

The following table summarizes the various investment categories that the pension plan assets are invested in and the applicable fair value hierarchy that the financial instruments are classified within these investment categories as of September 30, 2017 . For additional information and a detailed description of each level within the fair value hierarchy, refer to Note 3.

(In millions)	Total fair value	Quoted prices in active markets for identical assets Level 1	Significant other observable inputs Level 2	Significant unobservable inputs Level 3
Cash and cash equivalents	$ 13	$ 13	$ —	$ —
U.S. government securities	339	207	132	—
Other government securities	86	—	86	—
Corporate debt instruments	1,197	934	263	—
Corporate stocks	16	—	16	—
Other investments	16	—	—	16
Total assets in fair value hierarchy	$ 1,667	$ 1,154	$ 497	$ 16
Investments measured at net asset value:				
Private equity and hedge funds	$ 414			
Total investments measured at net asset value	$ 414	$ —	$ —	$ —
Total assets at fair value	$ 2,081	$ 1,154	$ 497	$ 16

The following table summarizes the various investment categories that the pension plan assets are invested in and the applicable fair value hierarchy that the financial instruments are classified within these investment categories as of September 30, 2016 .

(In millions)	Total fair value	Quoted prices in active markets for identical assets Level 1	Significant other observable inputs Level 2	Significant unobservable inputs Level 3
Cash and cash equivalents	$ 81	$ 81	$ —	$ —
U.S. government securities	85	—	85	—
Other government securities	73	—	73	—
Corporate debt instruments	1,077	877	200	—
Corporate stocks	242	134	108	—
Other investments	23	—	—	23
Total assets in fair value hierarchy	$ 1,581	$ 1,092	$ 466	$ 23
Investments measured at net asset value:				
Private equity and hedge funds	$ 726			
Total investments measured at net asset value	$ 726	$ —	$ —	$ —
Total assets at fair value	$ 2,307	$ 1,092	$ 466	$ 23

Valvoline's pension plans hold a variety of investments designed to diversify risk. Investments classified as a Level 1 fair value measure principally represent marketable securities priced in active markets. Cash and cash equivalents and public equity and debt securities are well diversified and invested in U.S. and international small-to-large companies across various asset managers and styles. Investments classified as a Level 2 fair value measure principally represent fixed-income securities in U.S. treasuries and agencies and other investment grade corporate bonds and debt obligations.

Investments measured at net asset value primarily consist of private equity and hedge funds and are not categorized within the fair value hierarchy. Valvoline's investments in these funds are primarily valued using the net asset value per share of underlying investments as determined by the respective individual fund administrators on a daily, weekly or monthly basis, depending on the fund. These investments have redemption notice periods that generally range from 5 to 90 days and various redemption frequencies, ranging from monthly to annually. Valvoline's pension plans also hold Level 3 investments primarily within real estate investments subject to valuation techniques based on unobservable valuation methodologies and data employed by the fund manager to value these investments. Such valuations are reviewed by portfolio managers who determine the estimated value of the collective funds based on these inputs. The following table provides a reconciliation of the beginning and ending balances for these Level 3 assets.

(In millions)	Total Level 3 assets
Balance at September 30, 2015	$ —
Transfer in	23
Balance at September 30, 2016	$ 23
Actual return on plan assets related to assets held at September 30, 2017	(7)
Balance at September 30, 2017	$ 16

Investments and Strategy

In developing an investment strategy for its defined benefit plans, Valvoline has considered the following factors: the nature of the plans' liabilities, the allocation of liabilities between active, deferred and retired members, the funded status of the plans, the applicable investment horizon, the respective size of the plans and historical and expected investment returns. Valvoline's U.S. pension plan assets are managed by outside investment managers, which are monitored against investment return benchmarks and Valvoline's established investment strategy. Investment managers are selected based on an analysis of, among other things, their investment process, historical investment results, frequency of management turnover, cost structure and assets under management. Assets are periodically reallocated between investment managers to maintain an appropriate asset mix and diversification of investments and to optimize returns.

The current target asset allocation for the U.S. plan is 80% fixed securities and 20% equity securities. Fixed income securities primarily include long duration high grade corporate debt obligations. Risk assets include both traditional equity as well as a mix of non-traditional assets such as hedge funds and private equity. Investment managers may employ a limited use of derivatives to gain efficient exposure to markets.

Valvoline's investment strategy and management practices relative to plan assets of non-U.S. plans generally are consistent with those for U.S. plans, except in those countries where investment of plan assets is dictated by applicable regulations. The weighted-average asset allocations for Valvoline's U.S. and non-U.S. plans at September 30, 2017 and 2016 by asset category follow.

	Target	2017	2016
Plan assets allocation			
Equity securities	10-30%	20%	46%
Debt securities	70-90%	78%	52%
Other	0-20%	2%	2%
		100%	100%

Funding and Benefit Payments

During fiscal 2017 and 2016, Valvoline contributed $412 million and $6 million , respectively, to its pension plans. The 2017 contributions include $394 million of discretionary contributions made to the U.S. qualified pension plan funded by the proceeds received from the 2025 Notes described in Note 11. Valvoline does not plan to contribute to the U.S. qualified pension plan in 2018, but expects to contribute approximately $14 million to its U.S. non-qualified and non-U.S. pension plans during 2018.

The following benefit payments, which reflect future service expectations, are projected to be paid in each of the next five years and in aggregate for five years thereafter.

(In millions)	Pension benefits	Other postretirement benefits
2018	$ 145	$ 8
2019	145	6
2020	146	4
2021	147	3
2022	148	3
Thereafter	737	15
Total	$ 1,468	$ 39

Other plans

During 2017, Valvoline began sponsoring its own savings plan. This plan provides matching contributions subject to a maximum percentage. Expense associated with this plan in 2017 was $14 million . For 2016 and 2015, qualifying Valvoline employees were eligible to participate in Ashland's qualified savings plan, and Valvoline's allocated expense related to these defined contributions was $11 million in each 2016 and 2015. After the IPO, Valvoline sponsors various other benefit plans, some of which are required by different countries. Total current and noncurrent liabilities associated with these plans were $1 million and $4 million , respectively, as of September 30, 2017, and $2 million and $4 million , respectively, as of September 30, 2016.

NOTE 15 – LITIGATION, CLAIMS AND CONTINGENCIES

From time to time Valvoline is involved in claims and legal actions that arise in the ordinary course of business. While Valvoline cannot predict with certainty the outcome, costs recognized with respect to such actions were immaterial during the year ended September 30, 2017. Valvoline does not have any currently pending claims or litigation which Valvoline believes, individually or in the aggregate, will have a material adverse effect on its financial position, results of operations, liquidity or capital resources. While

Valvoline cannot predict with certainty the outcome of such matters, it believes that adequate reserves have been recorded, where appropriate, which were immaterial as of September 30, 2017 and 2016 . There is a reasonable possibility that a loss exceeding amounts already recognized may be incurred related to these matters; however, Valvoline believes that such potential losses will not be material.

NOTE 16 - STOCK-BASED COMPENSATION PLANS

Prior to the Distribution, share-based awards for key Valvoline employees and directors were principally settled in Ashland common stock and granted through participation in Ashland's stock incentive plans, primarily in the form of stock appreciation rights ("SARs"), restricted stock, performance shares and other nonvested stock awards. In periods preceding the Distribution, stock-based compensation expense was allocated to Valvoline based on the awards and terms previously granted. In connection with the Distribution on May 12, 2017, outstanding Ashland share-based awards held by Valvoline employees and directors were converted to equivalent share-based awards of Valvoline based on an exchange ratio of Ashland's fair market value prior to Distribution in relation to Valvoline's fair market value post-Distribution.

The 2016 Valvoline Inc. Incentive Plan (the "Valvoline Incentive Plan") was adopted by Valvoline's Board of Directors, effective October 1, 2016, after having been approved by Ashland as controlling stockholder on September 27, 2016. Share-based awards granted under the Valvoline Incentive Plan contain similar terms and conditions as those granted under the Ashland stock incentive plans. A total of 7 million shares are authorized to be issued under the Valvoline Incentive Plan, with approximately 5 million remaining available for issuance as of September 30, 2017.

Valvoline recognizes stock-based compensation expense within the Selling, general and administrative expense caption of the Consolidated Statements of Comprehensive Income. In the periods following the Distribution, Valvoline recognizes stock-based compensation expense based on the grant date fair value of new or modified awards over the requisite vesting period. Stock-based compensation expense was $10 million , $11 million , and $9 million for the years ended September 30, 2017 , 2016 and 2015, respectively. During the prior year periods, this expense was based on an allocation from Ashland, and during the year ended September 30, 2017 , these allocations were $4 million . Included in the total stock-based compensation expense below is approximately $1 million for the year ended September 30, 2017 related to certain awards that are cash-settled and liability-classified; therefore, fair value is remeasured at the end of each reporting period until settlement.

The following is a summary of stock-based compensation expense recognized by the Company during the year ended September 30, 2017 :

(In millions)	2017
Stock appreciation rights	$ 3
Nonvested stock awards	5
Performance awards	2
Total stock-based compensation expense, pre-tax	10
Tax benefit	(4)
Total stock-based compensation expense, net of tax	$ 6

Stock Appreciation Rights

Through Valvoline's participation in Ashland's stock incentive plans, SARs were granted to certain Valvoline employees to provide award holders with the ability to profit from the appreciation in value of a set number of shares of Ashland's common stock over a period of time by exercising their award and receiving the sum of the increase in shares. SARs were granted at a price equal to the fair market value of the stock on the date of grant and typically vest and become exercisable over a period of one to three years. Unexercised SARs lapse ten years and one month after the date of grant.

In connection with the Distribution, Ashland SARs held by Valvoline employees were converted to equivalent Valvoline SARs based on the exchange ratio described above, which modified the number of SARs outstanding as well as the exercise price. The conversion was treated as a modification for accounting purposes, and accordingly, Valvoline estimated its pre- and post-modification fair value using the Black-Scholes option pricing model, which resulted in an immaterial increase in the incremental fair value of the awards. This model requires several assumptions, which were developed and updated based on historical trends and current market observations.

The following table illustrates the weighted average of key assumptions used within the Black-Scholes option-pricing model to estimate fair value of the modified SARs at Distribution.

Weighted average fair value per share of SARs	$	7.44
Assumptions (weighted average)		
Risk-free interest rate [(a)]		1.7%
Expected dividend yield		0.9%
Expected volatility [(b)]		22.8%
Expected term (in years) [(c)]		7.45

(a) The range of risk-free interest rates used for the SARs converted to Valvoline shares at Distribution was 1.1% to 1.9% .
(b) The range of expected volatility used for the SARs converted to Valvoline shares at Distribution was 21.5% to 24.4% .
(c) For SARs that were fully vested at Distribution, the expected term is based on the mid-point of the Distribution date and the expiration date.

The risk-free interest rate assumptions were based on the U.S. Treasury yield curve in effect at the time of the modification for the expected term of the instrument. The dividend yield reflected the assumption at the time that the current dividend payout will continue with no anticipated increases. Due to the lack of historical data for Valvoline, the volatility assumption was calculated by utilizing average volatility of peer companies with look-back periods commensurate with the expected term for each tranche of awards. The expected term is based on the vesting period and contractual term for each vesting tranche of awards, which generally utilized the mid-point between the vesting date and the expiration date as the expected term.

The following table summarizes the activity relative to SARs for the year ended September 30, 2017 :

	Number of Shares (in thousands)	Weighted Average Exercise Price Per Share	Weighted Average Remaining Term (in years)	Aggregate Intrinsic Value (in millions)
SARs outstanding at September 30, 2016	—	$ —		$ —
Conversion of Ashland awards to awards in Valvoline stock	1,896	17.53		
Exercised [(a)]	(45)	17.93		—
Forfeited	(27)	20.24		
SARs outstanding at September 30, 2017	1,824	$ 17.48	7.1 years	$ 11
SARs exercisable at September 30, 2017	975	$ 14.90	5.6 years	$ 8

(a) The aggregate intrinsic value of awards exercised was less than $1 million .

As of September 30, 2017 , there was $2 million of total unrecognized compensation costs related to SARs, which is expected to be recognized over a weighted average period of 2.0 years.

Nonvested stock awards

Primarily through Valvoline's participation in Ashland's stock incentive plans, nonvested stock awards in the form of Restricted Stock Awards ("RSAs") and Restricted Stock Units ("RSUs") were granted to certain Valvoline employees and directors. These awards were granted at a price equal to the fair market value of the underlying common stock on the grant date, generally vest over a one to three -year period, and are subject to forfeiture upon termination of service before the vesting period ends. These awards were primarily granted as RSUs that settle in shares upon vesting, while RSAs result in share issuance at grant, which entitle award holders to voting rights that are restricted until vesting. Dividends on nonvested stock awards granted are in the form of additional units or shares of nonvested stock awards, which are subject to vesting and forfeiture provisions.

In connection with the Distribution, Ashland nonvested stock awards held by Valvoline employees were converted to equivalent Valvoline awards based on the exchange ratio described above, which modified the number of awards outstanding. The conversion was treated as a modification for accounting purposes, and accordingly, Valvoline determined its pre- and post-modification fair value, which resulted in an immaterial increase in the incremental fair value of the awards that will be expensed ratably over the remaining vesting period of each award.

The following table summarizes nonvested share activity for the year ended September 30, 2017 :

	Number of Shares (in thousands)		Weighted Average Modified Grant Date Fair Value per Share
Outstanding balance at September 30, 2016	—	$	—
Conversion of Ashland service-based awards to Valvoline awards	843		22.65
Granted	447		22.82
Vested and distributed	(7)		22.65
Forfeitures	(8)		22.55
Outstanding shares at September 30, 2017	1,275	$	22.71

As of September 30, 2017 , there was $12 million of total unrecognized compensation costs related to nonvested stock awards, which is expected to be recognized over a weighted average period of 2.7 years. The aggregate intrinsic value of the nonvested stock awards as of September 30, 2017 is $30 million .

Performance awards

Through Valvoline's participation in Ashland's stock incentive plans, performance shares/units were awarded to certain key Valvoline employees that were tied to Ashland's overall financial performance relative to the financial performance of selected industry peer groups and/or internal targets. Awards were granted annually, with each award covering a three -year performance and vesting period. Each performance share/unit is convertible to one share of common stock, and the actual number of shares issuable upon vesting is determined based upon actual performance compared to market and financial performance targets. Nonvested performance shares/units generally do not entitle employees to vote the shares or to receive any dividends thereon.

In connection with the Distribution, Ashland performance awards held by Valvoline employees were converted to equivalent Valvoline awards based on the exchange ratio described above, which modified the number of awards outstanding. In addition, certain terms and conditions of the original grants were modified relative to the performance and market measures and related performance periods. The conversion was treated as a modification for accounting purposes, and accordingly, Valvoline estimated its pre- and post-modification fair value, which resulted in an immaterial increase in the incremental fair value of the awards that will be expensed ratably over the remaining vesting period of each award.

For those awards with remaining post-Distribution performance and market conditions, Valvoline estimated its modified fair value of each award using a two-step approach to consider both the performance and market conditions. With regard to the performance conditions, the modified fair value is equal to the fair market value of Valvoline's common stock on the modification date, and compensation cost is recognized over the requisite service period when it is probable that the performance condition will be satisfied. For the market conditions, compensation cost is recognized regardless of whether the conditions are satisfied and based on the modified fair value that was estimated using a Monte Carlo simulation valuation model using key assumptions summarized in the following table:

Assumptions (weighted average)	
Risk-free interest rate (a)	1.2%
Expected dividend yield	1.0%
Expected volatility (b)	21.0%
Expected term (in years)	1.9

(a) The range of risk-free interest rates used for the performance awards converted to Valvoline shares at Distribution was 0.9% to 1.5% .
(b) The range of expected volatility used for the performance awards converted to Valvoline shares at Distribution was 18.9% to 22.4% .

The following table summarizes performance award activity for the year ended September 30, 2017 :

	Number of Shares (in thousands)	Weighted Average Modified Grant Date Fair Value per Share
Outstanding balance at September 30, 2016	—	$ —
Conversion of Ashland performance-based awards to Valvoline awards	258	18.44
Cancellations	(76)	7.15
Outstanding shares at September 30, 2017	182	$ 23.20

As of September 30, 2017 , there was $2 million of unrecognized compensation costs related to nonvested performance share awards, which is expected to be recognized over a weighted average period of approximately 1.6 years. The aggregate intrinsic value of the nonvested stock awards as of September 30, 2017 is $4 million .

NOTE 17 - EARNINGS PER SHARE

The Company corrected an immaterial error in the EPS calculations previously reported in the consolidated and condensed consolidated financial statements for the periods prior to and including September 30, 2016. EPS was previously reported in these periods based on weighted average common shares outstanding of 204.5 million , which included both the 170 million shares issued to Ashland in the Contribution as well as the 34.5 million shares issued in the IPO on September 28, 2016. The weighted average number of shares outstanding included in the EPS calculation have been revised for the respective prior year periods to include the IPO shares only for the period they were outstanding in the year ended September 30, 2016. The impact of this revision did not affect the fiscal 2017 financial statements or reported net income, financial position or cash flows for any previous period.

Basic and diluted EPS previously reported in the Annual Report on Form 10-K for the fiscal year ended September 30, 2016 were $1.33 , $0.96 and $0.84 for the years ended September 30, 2016, 2015 and 2014, respectively. After correction of the weighted average number of common shares outstanding, revised basic and diluted EPS were $1.60 , $1.15 and $1.02 for the years ended September 30, 2016, 2015 and 2014, respectively. The Company evaluated the impact of the revision on prior periods, assessing materiality quantitatively and qualitatively and concluded that the error was not material to any of the interim and annual periods previously presented. The referenced periods presented herein have been revised accordingly.

EPS is determined under the treasury stock method. The following is the summary of basic and diluted EPS for the years ended September 30:

(In millions except per share data)	2017	2016	2015
Numerator			
Net income	$ 304	$ 273	$ 196
Denominator			
Weighted average shares used to compute basic EPS [(a)]	204	170	170
Effect of dilutive securities [(b)]	—	—	—
Weighted average shares used to compute diluted EPS	204	170	170
Earnings per share			
Basic	$ 1.49	$ 1.60	$ 1.15
Diluted	$ 1.49	$ 1.60	$ 1.15

(a) The weighted average number of shares outstanding for the years ended September 30, 2016 and 2015 are based on the 170 million shares issued to Ashland in the Contribution.
(b) During the year ended September 30, 2017, share-based awards that were previously denominated in Ashland common stock were converted to Valvoline common stock at Distribution. As presented in the table, there was not a significant dilutive impact for the year ended September 30, 2017 from potential common shares.

NOTE 18 - STOCKHOLDERS' DEFICIT

Separation from Ashland

On May 12, 2017, Ashland completed the Distribution of all 170 million shares of Valvoline common stock as a pro rata dividend on shares of Ashland common stock outstanding at the close of business on the record date of May 5, 2017. Based on the shares of Ashland common stock outstanding on the record date, each share of Ashland common stock received 2.745338 shares of Valvoline common stock in the Distribution. Concurrent with the Distribution, Ashland's net investment in Valvoline was reduced to zero with a corresponding adjustment to Paid-in capital and Retained deficit. Refer to Note 1 for additional information regarding the separation from Ashland.

Stockholder dividends

The Company's dividend activity during the year ended September 30, 2017 was as follows:

Declaration Date	Record Date	Payment Date	Dividend Per Common Share	Cash Outlay (in millions)	Cash Paid to Ashland (in millions)
November 15, 2016	December 5, 2016	December 20, 2016	$ 0.049	$ 10	$ 8
January 24, 2017	March 1, 2017	March 15, 2017	$ 0.049	$ 10	$ 8
April 27, 2017	June 1, 2017	June 15, 2017	$ 0.049	$ 10	$ —
July 27, 2017	September 1, 2017	September 15, 2017	$ 0.049	$ 10	$ —

Share repurchases

On April 24, 2017, Valvoline's Board of Directors authorized a share repurchase program under which Valvoline may repurchase up to $150 million of shares of its common stock through December 31, 2019. During the year ended September 30, 2017 , $50 million was used to repurchase approximately 2 million shares of common stock, which were retired on repurchase and recorded as a reduction in Common stock for par value, with the price paid in excess of par value recorded as an increase in Retained deficit. As of September 30, 2017 , $100 million remains available for repurchase under this authorization.

Other comprehensive income (loss)

Components of other comprehensive income (loss) recorded in the Consolidated Statements of Comprehensive Income are presented in the following table, before tax and net of tax effects, for the years ended September 30:

	2017			2016		
(In millions)	Before tax	Tax benefit (expense)	Net of tax	Before tax	Tax benefit (expense)	Net of tax
Other comprehensive income (loss)						
Unrealized translation gain	$ 9	$ (2)	$ 7	$ 10	$ (2)	$ 8
Pension and other postretirement obligation adjustment:						
Amortization of unrecognized prior service credits included in net income (a)	(12)	4	(8)	(1)	—	(1)
Total other comprehensive income (loss)	$ (3)	$ 2	$ (1)	$ 9	$ (2)	$ 7

(a) Amortization of unrecognized prior service credits are included in net periodic benefit income for pension and other postretirement plans and are included in Pension and other postretirement plan non-service income and remeasurement adjustments, net in the Consolidated Statements of Comprehensive Income.

NOTE 19 – RELATED PARTY TRANSACTIONS

Ashland Transactions

Separation from Ashland

Immediately prior to the Distribution, Ashland owned 170 million shares of Valvoline common stock, representing approximately 83% of the outstanding shares of Valvoline common stock. Effective upon the Distribution, Ashland no longer holds any shares of Valvoline common stock. Refer to Note 1 for further information on the separation from Ashland. Also refer to Note 16 for information regarding the conversion of share-based awards from Ashland to Valvoline at Distribution.

Cash management and treasury

For periods prior to the IPO in 2016, Valvoline participated in Ashland’s centralized treasury and cash management processes. Accordingly, the cash and cash equivalents were held by Ashland at the corporate level and were not attributed to Valvoline. Transactions in periods prior to the IPO were considered to be effectively settled for cash at the time the transactions were recorded. These transactions and net cash transfers to and from Ashland’s centralized cash management system are reflected as a component of Ashland's net investment on the Consolidated Balance Sheets and as a financing activity within the accompanying Consolidated Statements of Cash Flows. In the Consolidated Statements of Stockholders’ Equity, Ashland's net investment on the Consolidated Balance Sheets represents the cumulative net investment by Ashland in Valvoline, including net income through the completion of the IPO and net cash transfers to and from Ashland. In the Consolidated Statement of Stockholders’ Deficit, Ashland's net investment represents the cumulative net investment by Ashland in Valvoline through IPO, including net cash transfers to and from Ashland through Distribution.

All significant transactions between Valvoline and Ashland have been included in the consolidated financial statements. In the periods preceding the IPO and Distribution, Valvoline also participated in certain of Ashland's treasury activities related to derivatives and accounts receivable factoring and securitization. Refer to Notes 3 and 6 for additional information.

Transition Services Agreements

Valvoline also entered into a Transition Services Agreement (“TSA”) and Reverse Transition Services Agreement (“RTSA”) and certain other agreements in connection with the Separation Agreement with Ashland to cover certain continued corporate services provided by Valvoline and Ashland to each other following the completion of Valvoline’s IPO. In connection with the IPO, Valvoline began to set up its own corporate functions, and pursuant to the TSA, Ashland provided various corporate support services, including certain accounting, human resources, information technology, office and building, risk, security, tax and treasury services. Pursuant to the RTSA, Valvoline provided various corporate support services, including certain human resources, information technology, office and building, security and tax services, as well as certain regulatory compliance services required during the period in which Valvoline remained a majority-owned subsidiary of Ashland. Additional services may be identified from time to time and also be provided under the TSA and RTSA. In general, these agreements began following the completion of the IPO and cover a period not expected to exceed 24 months. The charges associated with these services were not material during the years ended September 30, 2016 and 2017, and are consistent with expenses that Ashland has historically allocated or incurred with respect to such services, plus a mark-up of five percent.

Related party receivables and payables

At September 30, 2017 , Valvoline had total net obligations due to Ashland of $74 million , of which $2 million was recorded in Accrued expenses and other liabilities and the remainder was primarily recorded and Other noncurrent liabilities in the Consolidated Balance Sheets. These liabilities generally relate to net obligations due to Ashland under the Tax Matters Agreement as well as reimbursements payable to Ashland for certain other contractual obligations, including those related to transition services and other obligations that are intended to transfer to Valvoline as part of the Distribution. Refer to Note 13 for additional details regarding the Tax Matters Agreement and related obligations.

At September 30, 2016 , Valvoline had receivables from Ashland of $30 million recorded in Other current assets on the Consolidated Balance Sheets. Also, at September 30, 2016 , Valvoline had obligations to Ashland of $73 million , of which $2 million was in Accrued expenses and other liabilities in the Consolidated Balance Sheets and $71 million was recorded in Other noncurrent liabilities in the Consolidated Balance Sheets. The long-term liability related primarily to the obligations under the Tax Matters Agreement.

Corporate allocations

Prior to the completion of the IPO, Valvoline utilized centralized functions of Ashland to support its operations, and in return, Ashland allocated certain of its expenses to Valvoline. Such expenses represent costs related, but not limited to, treasury, legal, accounting, insurance, information technology, payroll administration, human resources, incentive plans and other services. These costs, together with an allocation of Ashland overhead costs, are included within the Selling, general and administrative caption of the Consolidated Statements of Comprehensive Income. Where it was possible to specifically attribute such expenses to activities of Valvoline, amounts have been charged or credited directly to Valvoline without allocation or apportionment. Allocation of all other such expenses was based on a reasonable reflection of the utilization of service provided or benefits received by Valvoline during the periods presented on a consistent basis, such as headcount, square footage, tangible assets or sales. Valvoline's management supports the methods used in allocating expenses and believes these methods to be reasonable estimates.

There were no general corporate expenses allocated to Valvoline during the year ended September 30, 2017 , while there were $79 million allocated during each of the years ended September 30, 2016 and 2015. The following table summarizes the centralized and administrative support costs of Ashland that were allocated to Valvoline for the years ended September 30:

(In millions)	2016	2015
Information technology	$ 20	$ 17
Financial and accounting	12	13
Building services	11	10
Legal and environmental	6	7
Human resources	5	4
Shared services	2	2
Other general and administrative	23	26
Total	$ 79	$ 79

Joint Venture Transactions

As described in Note 5, Valvoline has a 50% interest in joint ventures with Cummins in India and China and smaller joint ventures in select countries in Central and South America and Asia. Sales to these joint ventures were $12 million and $10 million in 2017 and 2016, respectively, with $3 million in receivable balances outstanding as of September 30, 2017 and 2016.

NOTE 20 – REPORTABLE SEGMENT INFORMATION

Valvoline's business is managed within reportable segments based on how operations are managed internally for the products and services sold to customers, including how the results are reviewed by the chief operating decision maker, which includes determining resource allocation methodologies used for reportable segments. Valvoline's operating segments are identical to its reportable segments. Operating income is the primary measure reviewed by the chief operating decision maker in assessing each reportable segment's financial performance. Valvoline's businesses are managed within three reportable operating segments: Core North America, Quick Lubes, and International. Additionally, to reconcile to total consolidated Operating income, certain corporate and other non-operational costs are included in Unallocated and other.

Reportable segment business descriptions

The Core North America reportable segment sells Valvoline™ and other branded products in the United States and Canada to both retailers for consumers to perform their own automotive maintenance, referred to as "Do-It-Yourself" or "DIY" consumers, as well as to installer customers who use Valvoline products to service vehicles owned by "Do-It-For Me" or "DIFM" consumers. Valvoline DIY sales are primarily to national retail auto parts stores, leading mass merchandisers and independent auto part stores. Valvoline DIFM sales to installer customers include car dealers, general repair shops, and third-party quick lube chains. Valvoline directly serves these customers as well as through a network of distributors. Valvoline's installer channel also sells branded products and solutions to heavy duty customers such as on-highway fleets and construction companies.

Through its Quick Lubes reportable segment, Valvoline operates Valvoline Instant Oil Change ("VIOC"), a quick-lube service chain involving both Company-owned and franchised stores. Valvoline also sells its products and provides Valvoline branded signage to independent quick lube operators through its Express Care program.

The International reportable segment sells Valvoline™ and Valvoline's other branded products in approximately 140 countries outside of the United States and Canada. Valvoline's key international markets include China, India, EMEA, Latin America and Australia Pacific. The International reportable segment sells products for both consumer and commercial vehicles and equipment, and is served by company-owned plants in the United States, Australia and the Netherlands, as well as third-party warehouses and toll manufacturers in other regions. In most of the countries where Valvoline's products are sold, Valvoline goes to market via independent distributors.

Unallocated and other generally includes items that are non-operational in nature and not directly attributable to any of the reportable segments, such as components of pension and other postretirement benefit plan expense/income (excluding service costs, which are allocated to the reportable segments), certain significant company-wide restructuring activities and legacy costs or adjustments that relate to divested businesses, including costs related to the separation from Ashland and the $26 million loss from the sale of car care products during 2015.

Valvoline did not have a single customer that represented 10% of consolidated net sales in 2015 , 2016 or 2017 .

Entity-wide disclosures

Information about Valvoline's domestic and international operations follows. Valvoline's international operations are primarily captured within the International reportable segment and Valvoline does not have material operations in any individual international country.

	Sales from external customers			Net (liabilities) assets		Property, plant and equipment - net	
(In millions)	2017	2016	2015	2017	2016	2017	2016
United States	$ 1,504	$ 1,397	$ 1,413	$ (321)	$ (520)	$ 352	$ 286
International	580	532	554	204	190	39	38
	$ 2,084	$ 1,929	$ 1,967	$ (117)	$ (330)	$ 391	$ 324

Sales by geography expressed as a percentage of total consolidated sales were as follows:

Sales by Geography	For the years ended September 30		
	2017	2016	2015
North America [(a)]	74%	75%	74%
Europe	7%	7%	8%
Asia Pacific	14%	14%	14%
Latin America & other	5%	4%	4%
	100%	100%	100%

(a) Valvoline includes only the United States and Canada in its North American designation.

Reportable segment results

Results of Valvoline's reportable segments are presented based on how operations are managed internally, including how the results are reviewed by the chief operating decision maker. The structure and practices are specific to Valvoline; therefore, the financial results of Valvoline's reportable segments are not necessarily comparable with similar information for other companies. Valvoline allocates all costs to its reportable segments except for certain significant non-operational or corporate matters, such as restructuring plans and/or other costs or adjustments that relate to former businesses that Valvoline no longer operates. The service cost component of pension and other postretirement benefits costs is allocated to each reportable segment on a ratable basis (currently, the only plans with ongoing service costs are international plans within the International reportable segment), while the remaining components of pension and other postretirement benefits costs are recorded in Unallocated and other.

Valvoline determined that disclosing sales by specific product was impracticable. As such, the following tables provide a summary of sales by product category for each reportable segment for the years ended September 30:

Sales by Product Category for Sales by Product Category								
Core North America			Quick Lubes			International		
	2017	2016		2017	2016		2017	2016
Lubricants	86%	87%	Lubricants	94%	94%	Lubricants	89%	89%
Chemicals	4%	4%	Chemicals	1%	1%	Chemicals	4%	7%
Antifreeze	7%	7%	Filters	5%	5%	Antifreeze	6%	3%
Filters	3%	2%		100 %	100 %	Filters	1%	1%
	100%	100%					100 %	100 %

The following table presents various financial information for each reportable segment. The operating results of divested assets during 2015 that did not qualify for discontinued operations accounting treatment are included in the financial information until the date of sale.

Reportable Segment Information	Years ended September 30		
(In millions)	2017	2016	2015
Sales			
Core North America	$ 1,004	$ 979	$ 1,061
Quick Lubes	541	457	394
International	539	493	512
	$ 2,084	$ 1,929	$ 1,967
Equity income (loss)			
Core North America	$ —	$ —	$ —
Quick Lubes	—	—	—
International	12	12	(2)
	12	12	(2)
Other income			
Core North America	3	1	1
Quick Lubes	3	2	2
International	7	4	7
	13	7	10
	$ 25	$ 19	$ 8
Operating income (loss)			
Core North America	$ 199	$ 212	$ 200
Quick Lubes	130	117	95
International	76	74	65
Unallocated and other [(a)]	127	28	(37)
	$ 532	$ 431	$ 323
Additions to property, plant and equipment			
Core North America	$ 35	$ 41	$ 20
Quick Lubes	29	20	19
International	3	5	6
Unallocated and other	1	—	—
	$ 68	$ 66	$ 45
Depreciation and amortization [(b)]			
Core North America	$ 15	$ 16	$ 17
Quick Lubes	22	17	16
International	5	5	5
	$ 42	$ 38	$ 38

(a) During 2017, 2016, and 2015, Unallocated and other also includes a gain of $68 million , a gain of $18 million , and a loss of $46 million , respectively, related to the actuarial remeasurements of pension and other postretirement benefit plans.
(b) Depreciation and amortization by reportable segment is based upon allocations across reportable segments as certain assets service more than one reportable segment.

(In millions)	Years ended September 30 2017	2016
Assets [a]		
Core North America	$ 554	$ 525
Quick Lubes	483	370
International	306	271
Unallocated and other	572	659
	$ 1,915	$ 1,825
Equity method investments		
Core North America	$ —	$ —
Quick Lubes	—	—
International	30	26
Unallocated and other	—	—
	$ 30	$ 26
Property, plant and equipment, net [a]		
Core North America	$ 117	$ 123
Quick Lubes	183	149
International	47	46
Unallocated and other	44	6
	$ 391	$ 324

(a) Some assets by reportable segment are based upon allocations across reportable segments as certain assets service more than one reportable segment.

NOTE 21 – QUARTERLY FINANCIAL INFORMATION (UNAUDITED)

The following table presents quarterly financial information and per share data:

(In millions except per share amounts)	First Quarter 2017	First Quarter 2016	Second Quarter 2017	Second Quarter 2016	Third Quarter 2017	Third Quarter 2016	Fourth Quarter 2017	Fourth Quarter 2016
Sales	$ 489	$ 456	$ 514	$ 480	$ 534	$ 499	$ 547	$ 494
Cost of sales	$ 304	$ 280	$ 316	$ 288	$ 337	$ 300	$ 349	$ 300
Gross profit as a percentage of sales	37.8%	38.6%	38.5%	40.0%	36.9%	39.9%	36.2%	39.3%
Operating income	$ 120	$ 96	$ 117	$ 104	$ 104	$ 113	$ 191	$ 118
Net income	$ 72	$ 65	$ 71	$ 68	$ 56	$ 75	$ 105	$ 65
Net income per common share [a]								
Basic [a]	$ 0.35	$ 0.38	$ 0.35	$ 0.40	$ 0.27	$ 0.44	$ 0.52	$ 0.38
Diluted [a]	$ 0.35	$ 0.38	$ 0.35	$ 0.40	$ 0.27	$ 0.44	$ 0.52	$ 0.38
Cash dividends per share	$ 0.05	$ —	$ 0.05	$ —	$ 0.05	$ —	$ 0.05	$ —

(a) Refer to Note 17 for additional information regarding revisions to prior period EPS calculations. Net income per share in each quarter is computed using the weighted-average number of shares outstanding during that quarter while net income per share for the full year is computed using the weighted-average number of shares outstanding during the year. Thus, the sum of the four quarters' net income per share will not necessarily equal the full-year net income per share.

NOTE 22 – GUARANTOR FINANCIAL INFORMATION

The 2024 Notes and 2025 Notes (collectively, the “Senior Notes”) are general unsecured senior obligations of Valvoline Inc. and are fully and unconditionally guaranteed on a senior unsecured basis, jointly and severally, by the combined “Guarantor Subsidiaries.” Other subsidiaries (the “Non-Guarantor Subsidiaries”) largely represent the international operations of the Company, which do not guarantee the Senior Notes. Under the terms of the indentures, Valvoline Inc. and the Guarantor Subsidiaries each fully and unconditionally, jointly and severally, guarantee the payment of interest, principal and premium, if any, on each of the notes included in the Senior Notes. The Guarantor Subsidiaries are subject to release in certain circumstances, including (i) the sale of all of the capital stock of the subsidiary, (ii) the designation of the subsidiary as an “Unrestricted Subsidiary” under the indenture governing the Senior Notes; or (iii) the release of the subsidiary as a guarantor from the Company's 2016 Senior Credit Agreement described further in Note 11.

In connection with the foregoing, the registration rights agreements with respect to the Senior Notes require the Company to use its reasonable best efforts to consummate an offer to exchange the outstanding notes for substantially identical exchange notes registered under the Securities Act of 1933, as amended. Accordingly, in November 2017, the Company is filing a Registration Statement on Form S-4 to initiate the exchange offers for these Senior Notes in compliance with its registration obligations. The Company will not receive any proceeds from the exchange offers.

The following tables should be read in conjunction with the consolidated financial statements herein and present, on a consolidating basis, the condensed balance sheets; condensed statements of comprehensive income; and condensed statements of cash flows for the parent issuer of these Senior Notes, the Guarantor Subsidiaries on a combined basis, the Non-Guarantor Subsidiaries on a combined basis and the eliminations necessary to arrive at the Company's consolidated results. The principal elimination entries relate to investments in subsidiaries and intercompany balances and transactions. The Company has accounted for its investments in its subsidiaries under the equity method.

In connection with the restructuring steps that occurred immediately prior to Valvoline's IPO as described in Note 1, certain subsidiaries were created and contributed to Valvoline which formed a new organizational structure to affect the separation from Ashland, which was completed in May 2017. Activity for the parent issuer, Guarantor Subsidiaries and Non-Guarantor Subsidiaries has been presented herein to reflect the guarantee structure in place at September 30, 2017 for all periods presented based upon the historical activity that occurred within Valvoline's legal structure that existed in each respective period presented.

Condensed Consolidating Balance Sheets

For the year ended September 30, 2017

(In millions)	Valvoline Inc. (Parent Issuer)	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Assets					
Current assets					
Cash and cash equivalents	$ —	$ 99	$ 102	$ —	$ 201
Accounts receivable, net	—	57	389	(61)	385
Inventories, net	—	94	81	—	175
Other current assets	—	25	4	—	29
Total current assets	—	275	576	(61)	790
Noncurrent assets					
Net property, plant and equipment	—	353	38	—	391
Goodwill and intangibles	—	333	2	—	335
Equity method investments	—	30	—	—	30
Investment in subsidiaries	606	447	—	(1,053)	—
Deferred income taxes	145	122	14	—	281
Other assets	314	80	6	(312)	88
Total noncurrent assets	1,065	1,365	60	(1,365)	1,125
Total assets	$ 1,065	$ 1,640	$ 636	$ (1,426)	$ 1,915
Liabilities and Stockholders' Deficit					
Current Liabilities					
Short-term debt	$ —	$ —	$ 75	$ —	$ 75
Current portion of long-term debt	15	—	—	—	15
Trade and other payables	2	198	53	(61)	192
Accrued expenses and other liabilities	103	60	33	—	196
Total current liabilities	120	258	161	(61)	478
Noncurrent liabilities					
Long-term debt	1,032	2	—	—	1,034
Employee benefit obligations	—	321	21	—	342
Other liabilities	30	453	7	(312)	178
Total noncurrent liabilities	1,062	776	28	(312)	1,554
Commitments and contingencies					
Stockholders' deficit	(117)	606	447	(1,053)	(117)
Total liabilities and stockholders' deficit	$ 1,065	$ 1,640	$ 636	$ (1,426)	$ 1,915

Condensed Consolidating Balance Sheets

For the year ended September 30, 2016

(In millions)	Valvoline Inc. (Parent Issuer)	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Assets					
Current assets					
Cash and cash equivalents	$ —	$ 93	$ 79	$ —	$ 172
Accounts receivable, net	1	304	64	(6)	363
Inventories, net	—	72	67	—	139
Other current assets	5	50	1	—	56
Total current assets	6	519	211	(6)	730
Noncurrent assets					
Net property, plant and equipment	—	288	36	—	324
Goodwill and intangibles	—	265	2	—	267
Equity method investments	—	26	—	—	26
Investment in subsidiaries	354	160	—	(514)	—
Deferred income taxes	36	336	17	—	389
Other assets	25	80	5	(21)	89
Total noncurrent assets	415	1,155	60	(535)	1,095
Total assets	$ 421	$ 1,674	$ 271	$ (541)	$ 1,825
Liabilities and Stockholders' Deficit					
Current Liabilities					
Current portion of long-term debt	$ 19	$ —	$ —	$ —	$ 19
Trade and other payables	6	131	46	(6)	177
Accrued expenses and other liabilities	4	172	28	—	204
Total current liabilities	29	303	74	(6)	400
Noncurrent liabilities					
Long-term debt	722	2	—	—	724
Employee benefit obligations	—	860	26	—	886
Deferred income taxes	—	—	2	—	2
Other liabilities		155	9	(21)	143
Total noncurrent liabilities	722	1,017	37	(21)	1,755
Commitments and contingencies					
Stockholders' deficit	(330)	354	160	(514)	(330)
Total liabilities and stockholders' deficit	$ 421	$ 1,674	$ 271	$ (541)	$ 1,825

Condensed Consolidating Statements of Comprehensive Income

For the year ended September 30, 2017

(In millions)	Valvoline Inc. (Parent Issuer)	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Sales	$ —	$ 1,618	$ 523	$ (57)	$ 2,084
Cost of sales	—	986	377	(57)	1,306
Gross profit	—	632	146	—	778
Selling, general and administrative expense	(7)	291	91	—	375
Pension and other postretirement plan non-service income and remeasurement adjustments, net	—	(134)	(2)	—	(136)
Separation costs	1	31	—	—	32
Equity and other income	—	(37)	12	—	(25)
Operating income	6	481	45	—	532
Net interest and other financing expense	36	4	2	—	42
(Loss) income before income taxes	(30)	477	43	—	490
Income tax (benefit) expense	(3)	178	11	—	186
Equity in net income of subsidiaries	331	32	—	(363)	—
Net income	$ 304	$ 331	$ 32	$ (363)	$ 304
Total comprehensive income	$ 303	$ 330	$ 43	$ (373)	$ 303

Condensed Consolidating Statements of Comprehensive Income

For the year ended September 30, 2016

(In millions)	Valvoline Inc. (Parent Issuer)	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Sales	$ —	$ 1,500	$ 476	$ (47)	$ 1,929
Cost of sales	—	878	337	(47)	1,168
Gross profit	—	622	139	—	761
Selling, general and administrative expense	—	285	80	—	365
Pension and other postretirement plan non-service income and remeasurement adjustments, net	—	(26)	4	—	(22)
Separation costs	—	6	—	—	6
Equity and other income	—	(21)	2	—	(19)
Operating income	—	378	53	—	431
Net interest and other financing expense	9	—	—	—	9
Net loss on acquisition	—	1	—	—	1
(Loss) income before income taxes	(9)	377	53	—	421
Income tax (benefit) expense	(4)	143	9	—	148
Equity in net income of subsidiaries	278	44	—	(322)	—
Net income	$ 273	$ 278	$ 44	$ (322)	$ 273
Total comprehensive income	$ 280	$ 285	$ 53	$ (338)	$ 280

Condensed Consolidating Statements of Comprehensive Income

For the year ended September 30, 2015

(In millions)	Valvoline Inc. (Parent Issuer)	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Sales	$ —	$ 1,527	$ 494	$ (54)	$ 1,967
Cost of sales	—	985	351	(54)	1,282
Gross profit	—	542	143	—	685
Selling, general and administrative expense	—	275	73	—	348
Pension and other postretirement plan non-service income and remeasurement adjustments, net	—	22	—	—	22
Equity and other income	—	(13)	5	—	(8)
Operating income	—	258	65	—	323
Net loss on acquisition	—	26	—	—	26
(Loss) income before income taxes	—	232	65	—	297
Income tax (benefit) expense	—	90	11	—	101
Equity in net income of subsidiaries	196	54	—	(250)	—
Net income	$ 196	$ 196	$ 54	$ (250)	$ 196
Total comprehensive income	$ 162	$ 162	$ 24	$ (186)	$ 162

Condensed Consolidating Statements of Cash Flows

For the year ended September 30, 2017

(In millions)	Valvoline Inc. (Parent Issuer)	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Cash flow (used in) provided by operating activities	$ 97	$ (180)	$ (47)	$ —	$ (130)
Cash flows from investing activities					
Additions to property, plant and equipment	—	(64)	(4)	—	(68)
Proceeds from disposal of property, plant and equipment	—	1	—	—	1
Acquisitions, net of cash required	—	(68)	—	—	(68)
Advance to subsidiary	(312)	—	—	312	—
Total cash used in investing activities	(312)	(131)	(4)	312	(135)
Cash flows from financing activities					
Net transfers from Ashland	5	—	—	—	5
Proceeds from borrowings, net of issuance costs of $5	395	—	75	—	470
Repayments on borrowings	(90)	—	—	—	(90)
Repurchase of common stock	(50)	—	—	—	(50)
Cash dividends paid	(40)	—	—	—	(40)
Other intercompany activity, net	(5)	317	—	(312)	—
Total cash provided by financing activities	215	317	75	(312)	295
Effect of currency exchange rate changes on cash and cash equivalents	—	—	(1)	—	(1)
Increase in cash and cash equivalents	—	6	23	—	29
Cash and cash equivalents - beginning of year	—	93	79	—	172
Cash and cash equivalents - end of year	$ —	$ 99	$ 102	$ —	$ 201

Condensed Consolidating Statements of Cash Flows

For the year ended September 30, 2016

(In millions)	Valvoline Inc. (Parent Issuer)	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Cash flows (used in) provided by operating activities	$ (35)	$ 307	$ 39	$ —	$ 311
Cash flows from investing activities					
Additions to property, plant and equipment	—	(60)	(6)	—	(66)
Proceeds from disposal of property, plant and equipment	—	1	—	—	1
Acquisitions, net of cash required	—	(83)	—	—	(83)
Total cash used in investing activities	—	(142)	(6)	—	(148)
Cash flows from financing activities					
Net transfers to Ashland	(1,504)	—	—	—	(1,504)
Cash contributions from Ashland	60	—	—	—	60
Proceeds from initial public offering, net of offering costs of $40	719	—	—	—	719
Proceeds from borrowings, net of issuance costs of $15	1,372	—	—	—	1,372
Repayments on borrowings	(637)	—	—	—	(637)
Other intercompany activity, net	25	(72)	47	—	—
Total cash provided by (used in) financing activities	35	(72)	47	—	10
Effect of currency exchange rate changes on cash and cash equivalents	—	—	(1)	—	(1)
Increase in cash and cash equivalents	—	93	79	—	172
Cash and cash equivalents - beginning of year	—	—	—	—	—
Cash and cash equivalents - end of year	$ —	$ 93	$ 79	$ —	$ 172

Condensed Consolidating Statements of Cash Flows

For the year ended September 30, 2015

(In millions)	Valvoline Inc. (Parent Issuer)	Guarantor Subsidiaries	Non-Guarantor Subsidiaries	Eliminations	Consolidated
Cash flows provided by operating activities	$ —	$ 247	$ 83	$ —	$ 330
Cash flows from investing activities					
Additions to property, plant and equipment	—	(40)	(5)	—	(45)
Proceeds from disposal of property, plant and equipment	—	1	—	—	1
Acquisitions, net of cash required	—	(5)	—	—	(5)
Proceeds from sale of operations	—	23	—	—	23
Total cash used in investing activities	—	(21)	(5)	—	(26)
Cash flows from financing activities					
Net transfers to Ashland	(304)	—	—	—	(304)
Other intercompany activity, net	304	(226)	(78)	—	—
Total cash used in financing activities	—	(226)	(78)	—	(304)
Effect of currency exchange rate changes on cash and cash equivalents	—	—	—	—	—
Increase in cash and cash equivalents	—	—	—	—	—
Cash and cash equivalents - beginning of year	—	—	—	—	—
Cash and cash equivalents - end of year	$ —	$ —	$ —	$ —	$ —

NOTE 23 – SUBSEQUENT EVENTS

On October 2, 2017, the Company completed the acquisition of 56 Quick Lubes franchise service centers from Henley Bluewater LLC for $60 million . These stores build on the infrastructure and talent base of the existing company-owned operations in northern Ohio and add company-owned locations in Michigan. Following the acquisition, the company has a network of 440 company-owned locations.

On November 14, 2017, the Company's Board of Directors approved a quarterly cash dividend of $0.0745 per share of common stock. The dividend is payable December 15, 2017 to shareholders on record on December 1, 2017.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

Evaluation of Disclosure Controls and Procedures

Valvoline's Chief Executive Officer ("CEO") and Chief Financial Officer ("CFO"), with the assistance of management, has evaluated the effectiveness of the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended ("Exchange Act")), as of the end of the period covered by this Annual Report on Form 10-K (the "Evaluation Date"), and based upon such evaluation, have concluded that as of the Evaluation Date, the Company's disclosure controls and procedures were effective. These controls are designed to ensure that information required to be disclosed in the reports that are filed or submitted under the Exchange Act is recorded, processed, summarized, and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission ("SEC"), and that such information is accumulated and communicated to Valvoline's management, including the CEO and CFO, to allow timely decisions regarding required disclosure.

Management's Report on Internal Control over Financial Reporting

Management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act). Management assessed the effectiveness of the Company's internal control over financial reporting as of September 30, 2017 based on the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in the 2013 Internal Control - Integrated Framework. Based on this assessment, management concluded that the Company's internal control over financial reporting was effective as of September 30, 2017 based on those criteria. The Company's internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. GAAP. Valvoline's independent registered public accounting firm, Ernst & Young LLP, has issued an audit report with respect to the effectiveness of the Company's internal control over financial reporting as of September 30, 2017, which appears below.

Changes in Internal Control

There were no changes in Valvoline's internal control over financial reporting during the fourth fiscal quarter ended September 30, 2017 that materially affected, or are reasonably likely to materially affect, Valvoline's internal control over financial reporting.

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of
Valvoline Inc. and Consolidated Subsidiaries

We have audited Valvoline Inc. and Consolidated Subsidiaries' internal control over financial reporting as of September 30, 2017, based on criteria established in Internal Control-Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 framework), (the COSO criteria). Valvoline Inc. and Consolidated Subsidiaries' management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

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

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

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

In our opinion, Valvoline Inc. and Consolidated Subsidiaries maintained, in all material respects, effective internal control over financial reporting as of September 30, 2017, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Valvoline Inc. and Consolidated Subsidiaries as of September 30, 2017 and 2016, and the related consolidated statements of comprehensive income, stockholders' deficit, and cash flows for each of the three years in the period ended September 30, 2017 of Valvoline Inc. Consolidated Subsidiaries and our report dated November 17, 2017 expressed an unqualified opinion thereon.

/s/ Ernst & Young LLP

Cincinnati, Ohio
November 17, 2017

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

There is hereby incorporated by reference the information to appear under the caption “Proposal One - Election of Directors for a One-Year Term” in Valvoline’s Proxy Statement, which will be filed with the SEC within 120 days after September 30, 2017. See also the list of Valvoline’s executive officers and related information under “Executive Officers of Valvoline” included in Item 1 of Part I of this Annual Report on Form 10-K.

There is hereby incorporated by reference the information to appear under the caption “Corporate Governance - Overview of Governance Principles” in Valvoline’s Proxy Statement.

There is hereby incorporated by reference the information to appear under the caption “Corporate Governance - Shareholder Nominations of Directors” in Valvoline’s Proxy Statement.

There is hereby incorporated by reference the information to appear under the caption “Audit Committee Report” regarding Valvoline’s audit committee and audit committee financial experts, as defined under Item 407(d)(4) and (5) of Regulation S-K in Valvoline’s Proxy Statement.

There is hereby incorporated by reference the information to appear under the caption “Corporate Governance - Section 16(a) Beneficial Ownership Reporting Compliance” in Valvoline’s Proxy Statement.

ITEM 11. EXECUTIVE COMPENSATION

There is hereby incorporated by reference the information to appear under the captions “Compensation of Directors,” “Corporate Governance - Compensation Committee Interlocks and Insider Participation,” “Executive Compensation,” “Compensation Discussion and Analysis,” “Summary Compensation Table,” “Grants of Plan-Based Awards for Fiscal 2017,” “Outstanding Equity Awards at Fiscal 2017 Year End,” “Option Exercises and Stock Vested for Fiscal 2017,” “Pension Benefits for Fiscal 2017,” “Non-Qualified Deferred Compensation for Fiscal 2017,” “Potential Payments Upon Termination or Change in Control for Fiscal 2017 Table,” and “Report of the Compensation Committee” in Valvoline’s Proxy Statement.

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

There is hereby incorporated by reference the information to appear under the captions "Stock Ownership of Certain Beneficial Owners" and "Stock Ownership of Directors, Director Nominees and Executive Officers" in Valvoline's Proxy Statement.

Securities Authorized for Issuance Under Equity Compensation Plans

The following table provides information about the Company's equity compensation plans under which Valvoline Common Stock may be issued as of September 30, 2017.

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options, Warrants and Rights	Weighted-Average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans
Equity compensation plans approved by stockholders	2,501,741 (1)	$ 17.42 (2)	5,499,828 (3)
Equity compensation plans not approved by stockholders	429,786 (4)	$ —	1,568,615 (5)

(1) This figure includes the following shares issuable under the 2016 Valvoline Inc. Incentive Plan: (a) 1,823,802 shares that could be issued upon the exercise of stock settled SARs (all of which were originally awarded by Ashland and assumed by Valvoline pursuant to the Employee Matters Agreements); (b) 578,630 shares that could be issued under restricted stock units (276,563 of which were originally awarded by Ashland and assumed by Valvoline pursuant to the Employee Matters Agreement); and (c) 99,309 shares that could be issued under earned long-term incentive plan awards for the 2015-2017 and 2016-2018 performance periods (all of which were originally awarded by Ashland and assumed by Valvoline pursuant to the Employee Matters Agreement).

(2) The weighted-average exercise price excludes shares in Valvoline common stock that may be issued upon the settlement of restricted stock unit awards or long-term incentive plan awards. Also excluded are shares that may be issued pursuant to the deferred compensation plans, as described in footnote 4 in this table.

(3) This figure represents the shares available for issuance under the 2016 Valvoline Inc. Incentive Plan. Full value awards, which include all awards other than options and stock-settled SARs, reduce the available share reserve on a 4.5-to-1 basis.

(4) This figure includes 203,161 shares that may be issued under the 2016 Deferred Compensation Plan for Non-Employee Directors (the "Director Plan") and 226,625 shares that may be issued under the 2016 Deferred Compensation Plan for Employees (the "Employee Plan"). Both plans are unfunded, nonqualified deferred compensation plans. Eligible Directors in the Director Plan may elect to defer all or a portion of their annual retainer and other fees in hypothetical investment options, including mutual funds and Valvoline Common Stock. The Company has reserved 1,000,000 shares of its Common Stock for issuance under the Director Plan. The Employee Plan provides an opportunity for a select group of management and highly compensated employees to elect to defer up to 50% of their eligible base salary and up to 75% of their incentive compensation as a means of saving for retirement or other future purposes. Participants elect how to invest their account balances from a diverse set of hypothetical investment options, including mutual funds and Valvoline Common Stock. The Company has reserved 1,000,000 shares of its Common Stock for issuance under the Employee Plan. Because these plans are not equity compensation plans as defined by the rules of NYSE, neither plan required approval by the Company's stockholders.

(5) This figure includes 795,240 shares available for issuance under the 2016 Deferred Compensation Plan for Non-Employee Directors and 773,375 shares available for issuance under the 2016 Deferred Compensation Plan for Employees.

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

There is hereby incorporated by reference the information to appear under the captions "Corporate Governance – Valvoline's Board of Directors - Independence," "Corporate Governance - Related Person Transaction Policy," and "Audit Committee Report" in Valvoline's Proxy Statement.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

There is hereby incorporated by reference the information with respect to principal accountant fees and services to appear under the captions "Audit Committee Report" and "Proposal Two - Ratification of Independent Registered Public Accounting Firm" in Valvoline's Proxy Statement.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULE

(a) Documents filed as part of this Report

(1) Financial Statements

The consolidated financial statements of Valvoline filed as part of this Annual Report on Form 10-K are included under Part II, Item 8.

Separate financial statements of unconsolidated affiliates are omitted because none of these companies constitute significant subsidiaries using the 20% tests when considered individually. Summarized financial information for all unconsolidated affiliates is disclosed in Note 5 of the Notes to Consolidated Financial Statements.

(2) Financial Statement Schedule

Financial Statement Schedule II - Valuation and Qualifying Accounts included in this Form 10-K. All other schedules are not required under the related instructions or are not applicable.

(3) Exhibits

See Item 15(b) included in this Annual Report on Form 10-K.

(b) Documents required by Item 601 of Regulation S-K

3.1*	-	Amended and Restated Articles of Incorporation of Valvoline Inc.
3.2	-	Amended and Restated By-laws of Valvoline Inc. (incorporated by reference to Exhibit 3.2 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
4.1	-	Specimen Stock Certificate (incorporated by reference to Exhibit 4.1 to Valvoline’s Registration Statement on Form S-1 (File No. 333-211720) filed on September 12, 2016).
4.2	-	Indenture, dated as of July 20, 2016, among Valvoline Inc. (as successor to Valvoline Finco Two LLC), Ashland Inc., the Subsidiary Guarantors, and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 10.10 to Valvoline’s Registration Statement on Form S-1 (File No. 333-211720) filed on September 12, 2016).
4.3	-	First Supplemental Indenture, dated as of September 26, 2016, among Valvoline Inc., the Subsidiary Guarantors and U.S. Bank National Association, as trustee to the Indenture dated as of July 20, 2016 among Valvoline Inc. (as successor to Valvoline Finco Two LLC), Ashland Inc., the subsidiary guarantor, and U.S. Bank National Association, as trustee (incorporated by reference to Exhibit 4.3 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
4.4	-	Registration Rights Agreement, dated as of September 26, 2016, among Valvoline Inc., the Subsidiary Guarantors and Citigroup Global Markets Inc., as representative of the Initial Purchasers, in respect of the 5.500% Senior Notes due 2024 (incorporated by reference to Exhibit 4.4 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
4.5		Registration Rights Agreement, dated as of September 22, 2016, between Ashland Global Holdings Inc. and Valvoline Inc. (incorporated by reference to Exhibit 10.22 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
4.6	-	Indenture, dated as of August 8, 2017, among Valvoline Inc., the Subsidiary Guarantors, and U.S. Bank National Association, as Trustee (incorporated by reference to Exhibit 4.1 to Valvoline's Quarterly Report on Form 10-Q (File No. 001-37884) filed on August 8, 2017).
4.7	-	Registration Rights Agreement, dated as of August 8, 2017, among Valvoline Inc., the Subsidiary Guarantors and Citigroup Global Markets Inc., as representative of the Initial Purchasers, in respect of the 4.375% Senior Notes due 2025 (incorporated by reference to Exhibit 4.2 to Valvoline's Quarterly Report on Form 10-Q (File No. 001-37884) filed on August 8, 2017).

The following Exhibits 10.1 through 10.22 are contracts or compensatory plans or arrangements or management contracts required to be filed as exhibits pursuant to Items 601(b)(10)(ii)(A) and 601(b)(10)(iii)(A) and (B) of Regulations S-K.

10.1	-	Valvoline Inc. 2016 Deferred Compensation Plan for Employees (incorporated by reference to Exhibit 10.1 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.2	-	Valvoline Inc. 2016 Deferred Compensation Plan for Non-Employee Directors (incorporated by reference to Exhibit 10.6 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.3	-	2016 Valvoline Inc. Incentive Plan (incorporated by reference to Exhibit 10.2 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.4	-	Form of (Outside Directors) Restricted Stock Award Agreement pursuant to the 2016 Valvoline Inc. Incentive Plan (incorporated by reference to Exhibit 10.3 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.5	-	Form of Performance Unit Award Agreement pursuant to the 2016 Valvoline Inc. Incentive Plan (incorporated by reference to Exhibit 10.5 to Valvoline's Current Report on Form 8-K (File No. 001-37884) filed on May 15, 2017).
10.6	-	Form of Stock Appreciation Right Award Agreement pursuant to the 2016 Valvoline Inc. Incentive Plan (incorporated by reference to Exhibit 10.6 to Valvoline's Current Report on Form 8-K (File No. 001-37884) filed on May 15, 2017).
10.7*	-	Form of Restricted Stock Unit Award Agreement pursuant to the 2016 Valvoline Inc. Incentive Plan.
10.8	-	Form of Restricted Stock Unit Award Agreement (Cash-Settled) pursuant to the 2016 Valvoline Inc. Incentive Plan (incorporated by reference to Exhibit 10.8 to Valvoline's Current Report on Form 8-K (File No. 001-37884) filed on May 15, 2017).
10.9	-	Form of Inducement Restricted Stock Award Agreement entered into between Mary Meixelsperger and Ashland Inc. (assumed by Valvoline on April 27, 2017) (incorporated by reference to Exhibit 4.1 to Valvoline's Registration Statement on Form S-8 (File No. 333-218580) filed on June 7, 2017).
10.10	-	Valvoline Inc. Nonqualified Defined Contribution Plan (incorporated by reference to Exhibit 10.4 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.11	-	Letter Agreement between Valvoline LLC and David J. Scheve dated September 6, 2016 (incorporated by reference to Exhibit 10.5 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.12*	-	Ashland Inc. Nonqualified Excess Benefit Pension Plan.
10.13	-	Amendment to Ashland Inc. Nonqualified Excess Benefit Pension Plan, effective as of September 1, 2016 (incorporated by reference to Exhibit 10.7 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.14	-	Amendment to Ashland Inc. Nonqualified Excess Benefit Pension Plan, effective as of September 30, 2016 (incorporated by reference to Exhibit 10.9 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.15*	-	Ashland Inc. Supplemental Early Retirement Plan for Certain Employees (“Ashland SERP”).
10.16*	-	Amendment to Ashland SERP, effective as of January 1, 2015.
10.17*	-	Amendment to Ashland SERP, effective as of September 1, 2016.
10.18	-	Amendment to Ashland SERP, effective as of September 30, 2016 (incorporated by reference to Exhibit 10.8 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.19	-	Form of CEO Change in Control Agreement (incorporated by reference to Exhibit 10.1 to Valvoline's Current Report on Form 8-K (File No. 001-37884) filed on May 15, 2017).
10.20	-	Form of Executive Officer Change in Control Agreement (incorporated by reference to Exhibit 10.2 to Valvoline's Current Report on Form 8-K (File No. 001-37884) filed on May 15, 2017).
10.21	-	Valvoline Change in Control Severance Plan (incorporated by reference to Exhibit 10.3 to Valvoline's Current Report on Form 8-K (File No. 001-37884) filed on May 15, 2017).
10.22	-	Valvoline Severance Pay Plan (incorporated by reference to Exhibit 10.4 to Valvoline's Current Report on Form 8-K (File No. 001-37884) filed on May 15, 2017).

10.23	-	Credit Agreement dated as of July 11, 2016, among Valvoline Finco One LLC, as Initial Borrower, The Bank of Nova Scotia, as Administrative Agent, Swing Line Lender and an L/C Issuer, Citibank, N.A., as Syndication Agent, and the Lenders from time to time party thereto ("Valvoline Credit Agreement") (incorporated by reference to Exhibit 10.9 to Valvoline's Registration Statement on Form S-1 (File No. 333-211720) filed on September 12, 2016).
10.24	-	Amendment No. 1, dated as of September 21, 2016, to Valvoline Credit Agreement (incorporated by reference to Exhibit 10.11 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.25	-	Transfer and Administration Agreement, dated as of November 29, 2016, among LEX Capital LLC, Valvoline LLC, and each other entity from time to time party hereto as an Originator, as Originators, Valvoline LLC, as initial Master Servicer, PNC Bank, National Association, as the Agent, a Letter of Credit Issuer, a Managing Agent and a Committed Investor, The Bank of Tokyo-Mitsubishi UFJ, Ltd., New York Branch, as a Managing Agent, an Administrator and a Committed Investor, Gotham Funding Corporation, as a Conduit Investor and an Uncommitted Investor, PNC Capital Markets, LLC, as Structuring Agent and the various investor groups, managing agents, letter of credit issuers and Administrators from time to time parties thereto (incorporated by reference to Exhibit 10.1 to Valvoline's Current Report on Form 8-K (File No. 001-37884) filed on December 2, 2016).
10.26	-	Sale Agreement, dated as of November 29, 2016, by and between Valvoline LLC and LEX Capital LLC (incorporated by reference to Exhibit 10.2 to Valvoline Current Report on Form 8-K (File No. 001-37884) filed on December 2, 2016).
10.27	-	Parent Undertaking, dated as of November 29, 2016, by Valvoline Inc. in favor of PNC Bank National Association and the Secured Parties. (incorporated by reference to Exhibit 10.3 to Valvoline's Current Report on Form 8-K (File No. 001-37884) filed on December 2, 2016.
10.28	-	Separation Agreement, dated as of September 22, 2016, by and between Ashland Global Holdings Inc. and Valvoline Inc. (incorporated by reference to Exhibit 10.15 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.29	-	Transition Services Agreement, dated as of September 22, 2016, by and between Ashland Global Holdings Inc. and Valvoline Inc. (incorporated by reference to Exhibit 10.16 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.30	-	Reverse Transition Services Agreement, dated as of September 22, 2016, by and between Valvoline Inc. and Ashland Global Holdings Inc. (incorporated by reference to Exhibit 10.17 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.31	-	Tax Matters Agreement, dated as of September 22, 2016, by and between Ashland Global Holdings Inc. and Valvoline Inc. (incorporated by reference to Exhibit 10.18 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.32	-	Employee Matters Agreement, dated as of September 22, 2016, by and between Ashland Global Holdings Inc. and Valvoline Inc. (incorporated by reference to Exhibit 10.19 to Valvoline's Annual Report on Form 10-K (File No. 001-37884) filed on December 19, 2016).
10.33**	-	Supplier Terms & Conditions Agreement between Valvoline and Genuine Parts Company (NAPA oil), effective as of January 1, 2016 (incorporated by reference to Exhibit 10.7 to Valvoline's Registration Statement on Form S-1 (File No. 333-211720) filed on August 23, 2016).
10.34**	-	Supplier Terms & Conditions Agreement between Valvoline and Genuine Parts Company (Valvoline Oil), effective as of January 1, 2016 (incorporated by reference to Exhibit 10.8 to Valvoline's Registration Statement on Form S-1 (File No. 333-211720) filed on September 12, 2016).
12.1*		Computation of Ratio of Earnings to Fixed Charges.
21*	-	List of Subsidiaries.
23.1*	-	Consent of Ernst & Young LLP.
24*	-	Power of Attorney.
31.1*	-	Certification of Samuel J. Mitchell, Jr., Chief Executive Officer of Valvoline, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
31.2*	-	Certification of Mary E. Meixelsperger, Chief Financial Officer of Valvoline, pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
32*	-	Certification of Samuel J. Mitchell, Jr., Chief Executive Officer of Valvoline, and Mary E. Meixelsperger, Chief Financial Officer of Valvoline, pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.

* Filed herewith.
** Confidential treatment previously granted for certain portions which are omitted in the copy of the exhibit electronically filed with the SEC. The omitted information has been filed separately with the SEC pursuant to Valvoline's application for confidential treatment.

SM Service mark, Valvoline or its subsidiaries, registered in various countries.

™ Trademark, Valvoline or its subsidiaries, registered in various countries.

† Trademark owned by a third party.

Upon written or oral request, a copy of the above exhibits will be furnished at cost.

VALVOLINE INC.

SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS

For the Years Ended September 30, 2017, 2016 and 2015

(In millions)

(A)	(B)	(C)		(D)	(E)
		Additions			
Description	Balance at Beginning of Period	Charged to Expenses	Charged to Other Accounts	Deductions	Balance at End of Period
Allowance for doubtful accounts					
Year ended September 30, 2017	$ 5	$ 1	$ —	$ (1)	$ 5
Year ended September 30, 2016	$ 4	$ 1	$ —	$ —	$ 5
Year ended September 30, 2015	$ 5	$ —	$ —	$ (1)	$ 4
Inventory excess and obsolete reserves					
Year ended September 30, 2017	$ 2	$ 1	$ —	$ —	$ 3
Year ended September 30, 2016	$ 2	$ —	$ —	$ —	$ 2
Year ended September 30, 2015	$ 3	$ —	$ —	$ (1)	$ 2
Deferred tax asset valuation allowance					
Year ended September 30, 2017	$ 12	$ —	$ —	$ (4)	$ 8
Year ended September 30, 2016	$ 7	$ —	$ 5	$ —	$ 12
Year ended September 30, 2015	$ 6	$ 1	$ —	$ —	$ 7

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

VALVOLINE INC.
(Registrant)
By:
/s/ Mary E. Meixelsperger
Mary E. Meixelsperger
Chief Financial Officer
Date: November 17, 2017

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant, in the capacities indicated, on November 17, 2017.

Signatures	Capacity
/s/ Samuel J. Mitchell, Jr. Samuel J. Mitchell, Jr.	Chief Executive Officer and Director (Principal Executive Officer)
/s/ Mary E. Meixelsperger Mary E. Meixelsperger	Chief Financial Officer (Principal Financial Officer)
/s/ David J. Scheve David J. Scheve	Controller and Chief Accounting Officer (Principal Accounting Officer)
* Stephen F. Kirk	Non-Executive Chairman and Director
* Richard J. Freeland	Director
* Stephen E. Macadam	Director
* Vada O. Manager	Director
* Charles M. Sonsteby	Director
* Mary J. Twinem	Director
* William A. Wulfsohn	Director

*By: /s/ Julie M. O’Daniel
Julie M. O’Daniel
Attorney-in-Fact

Date: November 17, 2017

EXHIBIT 3.1

AMENDED AND RESTATED ARTICLES OF INCORPORATION OF VALVOLINE INC.

VALVOLINE INC., a corporation organized and existing under the laws of the Commonwealth of Kentucky, DOES HEREBY CERTIFY AS FOLLOWS:

1. The name of the corporation is Valvoline Inc. The original Articles of Incorporation of the corporation were filed with the Secretary of State of the Commonwealth of Kentucky on May 13, 2016 and were amended on September 9, 2016 (as in effect immediately prior to the adoption and effectiveness hereof, the " **Original Articles of Incorporation** "), and the name under which the corporation was originally incorporated is **Valvoline Inc.**

2. These Amended and Restated Articles of Incorporation (these " **Articles** ") have been duly adopted in accordance with Sections 271B.10-030 and 271B.10-070 of the Kentucky Business Corporation Act (the " **KBCA** ") and shall be effective as of 5:00 p.m. Eastern time on September 19, 2016.

3. The Original Articles of Incorporation are hereby amended and restated to read in their entirety as follows:

ARTICLE I
NAME

SECTION 1.01. The name of the corporation (hereinafter called the **"Corporation"**) is Valvoline Inc.

ARTICLE II
REGISTERED OFFICE; REGISTERED AGENT

SECTION 2.01. The address of the Corporation's registered office in the Commonwealth of Kentucky is 306 West Main Street - Suite 512, City of Frankfort, County of Franklin, Kentucky 40601. The name of the Corporation's registered agent at such address is CT Corporation System.

ARTICLE III
PURPOSE

SECTION 3.01. The purpose of the Corporation is to engage in any lawful act or activity for which corporations may be organized under the KBCA.

ARTICLE IV
CAPITAL STOCK

SECTION 4.01. Authorized Capital Stock . The total number of shares of all classes of stock which the Corporation shall have authority to issue is 440,000,000 shares, consisting of (1) 40,000,000 shares of Preferred Stock, having no par value (" **Preferred Stock** "), and (2) 400,000,000 shares of Common Stock, par value $0.01 per share (" **Common Stock** ").

SECTION 4.02. Preferred Stock .

(a) The Board of Directors of the Corporation (the " **Board** ") is hereby expressly authorized, by resolution or resolutions, to provide, out of the unissued shares of Preferred Stock, for series of Preferred Stock and, with respect to each such series, to fix the number of shares constituting such series and the designation of such series, the voting powers (if any) of the shares of such series, and the preferences and relative, participating, optional or other special rights, if any, and any qualifications, limitations or restrictions thereof, of the shares of such series. The powers, preferences and relative, participating, optional and other special rights of each series of Preferred Stock, and the qualifications, limitations or restrictions thereof, if any, may differ from those of any and all other series at any time outstanding.

(b) Except as otherwise required by law, holders of a series of Preferred Stock, as such, shall be entitled only to such voting rights, if any, as shall expressly be granted to such holders by these Articles.

SECTION 4.03. Common Stock .

(a) Ranking . The voting, dividend and liquidation rights of the holders of the Common Stock are subject to and qualified by the rights of the holders of the Preferred Stock of any series as may be designated by the Board upon any issuance of the Preferred Stock of any series.

(b) Voting Rights . Each holder of Common Stock, as such, shall be entitled to one vote for each share of Common Stock held of record by such holder on all matters on which shareholders generally are entitled to vote; provided , however , that, except as otherwise required by law, holders of Common Stock, as such, shall not be entitled to vote on any amendment to these Articles that relates solely to the terms of one or more outstanding series of Preferred Stock if the holders of such affected series are entitled, either separately or together with the holders of one or more other such series, to vote thereon pursuant to these Articles or pursuant to the KBCA.

(c) Dividends . Subject to applicable law and the rights, if any, of the holders of any outstanding series of Preferred Stock, dividends may be declared and paid on the Common Stock at such times and in such amounts as the Board in its discretion shall determine.

(d) Liquidation and Other Events . Upon the dissolution, liquidation or winding up of the Corporation, subject to the rights, if any, of the holders of any outstanding series of Preferred Stock, the holders of the Common Stock, as such, shall be entitled to receive the assets of the Corporation available for distribution to its shareholders ratably in proportion to the number of shares held by them.

ARTICLE V
BOARD OF DIRECTORS

SECTION 5.01. Size of Board . The business and affairs of the Corporation shall be managed by or under the direction of the Board. Except as otherwise fixed pursuant to the terms of any outstanding series of Preferred Stock pursuant to these Articles, the number of directors of the Corporation shall be fixed from time to time by or pursuant to the By-laws of the Corporation (the " **By-laws** ").

SECTION 5.02. Election of Directors .

(a) The directors, other than those who may be elected by the holders of any series of Preferred Stock voting separately pursuant to these Articles, shall be elected by the shareholders entitled to vote thereon at each annual meeting of the shareholders and shall hold office until the next annual meeting of the shareholders and until each of their successors shall have been elected and qualified. No decrease in the number of directors constituting the Board shall shorten the term of any incumbent director.

(b) The vote required for the election of directors by shareholders, other than in a contested election of directors, shall be the affirmative vote of a majority of the votes cast with respect to a director nominee. For purposes of this paragraph, a "majority of the votes cast" shall mean that the number of votes cast 'for' a director must exceed the number of votes cast 'against' that director. In any contested election of directors, the nominees receiving the greatest number of the votes cast for their election, up to the number of directors to be elected in such election, shall be deemed elected. 'Abstentions' and 'broker non-votes' will not count as votes either 'for' or 'against' a nominee. Any incumbent director who fails to receive a majority of the votes cast in an uncontested election shall submit an offer to resign from the Board no later than two weeks after the certification by the Corporation of the voting results. An uncontested election is one in which the number of individuals who have been nominated for election as a director is equal to, or less than, the number of directors constituting the Whole Board (as defined below). A contested election is one in which the number of persons nominated exceeds the number of directors to be elected as of the date that is ten days prior to the date that the Corporation first mails its notice of meeting for such meeting to the shareholders. The term " **Whole Board** " shall mean the total number of authorized directors, whether or not there exist any vacancies on the Board.

SECTION 5.03. Vacancies and Newly Created Directorships . Except as otherwise provided for or fixed by or pursuant to the provisions of these Articles relating to the rights of the holders of any outstanding series of Preferred Stock, newly created directorships resulting from any increase in the number of directors may be filled by the Board, and any vacancies on the Board resulting from death, resignation, removal or other cause shall only be filled by the Board, and not by the shareholders, by the affirmative vote of a majority of the remaining directors then in office, even though less than a quorum of the Board, or by a sole remaining director. Any director elected in accordance with the preceding sentence of this Section 5.03 shall hold office until the next annual meeting of the shareholders and until such director's successor shall have been elected and qualified.

SECTION 5.04. Removal of Directors . Subject to the rights of holders of any outstanding series of Preferred Stock with respect to the removal of directors, a director may be removed from office by the shareholders (i) without cause by the affirmative vote of the holders of (a) until April 26, 2020, at least 66 2/3% of the voting power of the outstanding voting stock of the Corporation, voting together as a single class and (b) on or after April 26, 2020, a majority of the voting power of the outstanding voting stock of the Corporation, voting together as a single class, (ii) with cause by the affirmative vote of the holders of a majority of the voting power of the outstanding voting stock of the Corporation, voting together as a single class. For purposes of this Section 5.04, "cause" shall mean the willful and continuous failure of a director to substantially perform such director's duties to the Corporation, other than any such failure resulting from incapacity due to physical or mental illness, or the willful engaging by a director in gross misconduct materially and demonstrably injurious to the Corporation. As used in these Articles, " **voting stock** " shall mean shares of capital stock of the Corporation entitled to vote generally in an election of directors.

ARTICLE VI
SHAREHOLDERS

SECTION 6.01. Action by Unanimous Written Consent . Subject to the rights of the holders of any outstanding series of Preferred Stock, any action required or permitted to be taken by the shareholders of the Corporation may be effected by the written consent of the shareholders of the Corporation in lieu of a duly called annual or special meeting of the shareholders of the Corporation, provided that such written consent is unanimously granted by the holders of 100% of voting power of the voting stock of the Corporation, voting together as a single class, that would be entitled to vote on such action at a duly called annual or special meeting of the shareholders of the Corporation.

ARTICLE VII
ADOPTION, AMENDMENT OR REPEAL OF BY-LAWS

SECTION 7.01. Board of Directors . Subject to the KBCA, and in furtherance and not in limitation of the powers conferred upon it by law, the Board is expressly authorized to adopt, repeal, alter or amend the By-laws, by the vote of a majority of the entire Board or such greater vote as shall be specified in the By-laws, that the Board may deem necessary or desirable for the efficient conduct of the affairs of Corporation, including, but not limited to, provisions governing the conduct of, and the matters which may properly be brought before, annual or special meetings of the shareholders and provisions specifying the manner and extent to which prior notice shall be given of the submission of proposals to be considered at any such meeting or of nominations for election of directors to be held at any such meeting.

SECTION 7.02. Shareholders . The shareholders shall also have power to adopt, repeal, alter or amend the By-laws; provided , however , that in addition to any requirements of law and any other provision of these Articles (and notwithstanding the fact that a lesser percentage may be specified by law, these Articles or the By-laws), the affirmative vote of the holders of (a) until April 26, 2020, at least 66 2/3% of the voting power of the then outstanding voting stock of the Corporation, voting together as a single class, and (b) on or after April 26, 2020, a majority of the voting power of the then outstanding voting stock of the Corporation, voting together as a single class, shall be required for shareholders to adopt, amend, alter or repeal any provision of the By-laws.

ARTICLE VIII
ADOPTION, AMENDMENT OR REPEAL OF ARTICLES

SECTION 8.01. The Corporation reserves the right to amend, alter, adopt or repeal any provision contained in these Articles, in the manner now or hereafter prescribed by statute, and all rights conferred upon shareholders herein are subject to this reservation. Notwithstanding anything contained in these Articles to the contrary (and in addition to any vote required by law), the affirmative vote of the holders of (a) until April 26, 2020, at least 66 2/3% of the voting power of the then outstanding voting stock of the Corporation, voting together as a single class, and (b) on or after April 26, 2020, a majority of the voting power of the then outstanding voting stock of the Corporation, voting together as a single class, shall be required to amend, alter, change, or repeal or to adopt any provision inconsistent with Article V, Article VI, Article VII and this Article VIII.

ARTICLE IX
LIMITATION ON DIRECTOR LIABILITY; INDEMNIFICATION

SECTION 9.01. Limitation on Director Liability . To the fullest extent that the KBCA or any other law of the Commonwealth of Kentucky as it exists or as it may hereafter be amended permits the limitation or elimination of the liability of directors, no director of the Corporation shall be liable to the Corporation or its shareholders for monetary damages for breach of fiduciary duty as a director.

SECTION 9.02. Indemnification . To the fullest extent that the KBCA or any other law of the Commonwealth of Kentucky as it exists or as it may hereafter be amended permits, the Corporation may provide indemnification of (and advancement of expenses to) its current and former directors, officers, and agents (and any other persons to which the KBCA permits the Corporation to provide indemnification) through By-law provisions, agreements with such agents or other persons, votes of shareholders or disinterested directors or otherwise.

SECTION 9.03. Effect of Amendment or Repeal . No amendment to or repeal of any Section of this Article IX, nor the adoption of any provision of these Articles inconsistent with this Article IX, shall eliminate or reduce the effect of this Article IX in respect of any matter occurring, or any action or proceeding accruing or arising, prior to such amendment, repeal or adoption of an inconsistent provision. This Article IX is not intended to eliminate or limit any protection otherwise available to the directors or officers of the Corporation.

ARTICLE X
FORUM SELECTION

SECTION 10.01. Unless the Corporation consents in writing to the selection of an alternative forum, the Fayette County Circuit Court of the Commonwealth of Kentucky shall be the sole and exclusive forum for: (i) any derivative action or proceeding brought on behalf of the Corporation, (ii) any action asserting a claim for breach of a fiduciary duty owed by any director, officer or other employee of the Corporation to the Corporation or the Corporation's shareholders, (iii) any action asserting a claim arising pursuant to any provision of the KBCA or (iv) any action asserting a claim governed by the internal affairs doctrine; provided , however , that, in the event that the Fayette County Circuit Court of the Commonwealth of Kentucky lacks subject matter jurisdiction over any such action or proceeding, the sole and exclusive forum for such action or proceeding shall be another state or federal court located within the Commonwealth of Kentucky, in each such case, unless the Fayette County Circuit Court (or such other state or federal court located within the Commonwealth of Kentucky, as applicable) has dismissed a prior action by the same plaintiff asserting the same claims because such court lacked personal jurisdiction over an indispensable party named as a defendant therein. Any person or entity purchasing or otherwise acquiring any interest in shares of capital stock of the Corporation shall be deemed to have notice of and consented to the provisions of this Section 10.01. Failure to enforce the foregoing provisions would cause the Corporation irreparable harm and the Corporation shall be entitled to equitable relief, including injunction and specific performance, to enforce the forgoing provisions.

ARTICLE XI
INCORPORATOR

SECTION 11.01. The name of the Incorporator is Michael S. Roe and the mailing address of the incorporator is 50 E. RiverCenter Blvd., Covington, Kentucky 41011 .

RESTRICTED STOCK UNIT AGREEMENT

Name of Participant: ________________________________

Name of Plan: 2016 Valvoline Inc. Incentive Plan

Number of Restricted Stock Units: ________________________________

Vesting Dates: ________________________________

Date of Award: ________________________________

Valvoline Inc. (" Valvoline ") hereby grants to the above-named Participant (the " Participant ") ___________________ a Restricted Stock Unit (" RSU ") award (this " Award ") pursuant to the 2016 Valvoline Inc. Incentive Plan (the " Plan ") and this agreement (this " Agreement "), in order to provide the Participant with an additional incentive to continue his or her services to Valvoline and its Subsidiaries and to continue to work for the best interests of Valvoline and its Subsidiaries. Each Restricted Stock Unit represents the contingent right (as set forth herein) of the Participant to receive one share of Valvoline Common Stock, par value $0.01 per share, on the applicable vesting date (as defined below).

Valvoline confirms this Award to the Participant, as a matter of separate agreement and not in lieu of salary or any other compensation for services, of the number of RSUs set forth above, subject to and upon all the terms, provisions and conditions contained herein and in the Plan, including but not limited to the forfeiture provisions of Section 16(H) of the Plan. Capitalized terms used but not defined in this Agreement shall have the meanings given to such terms in the Plan.

Following acceptance of this Award by the Participant, as provided for hereunder, the applicable number of RSUs set forth above will become vested on the applicable vesting date set forth above (the applicable " Vesting Date "); provided that, except as otherwise provided in Section 12 of the Plan in the event of a Change in Control or as otherwise determined by the Compensation Committee in the event of the Participant's death or termination of employment for any reason, all RSUs that have not vested prior to the Participant's death or termination of employment will be forfeited.

The Award shall be governed by Section 12 of the Plan in the event of a Change in Control; provided that, without limiting Section 12(A)(3) of the Plan, the Award will not be considered to be assumed, continued, converted or replaced by the surviving or resulting entity in connection with a Change in Control unless, in each case as determined by the Compensation Committee in its sole discretion prior to such Change in Control, (1) the number and kind of shares or other securities underlying the Award are adjusted to prevent dilution of the Participant's rights hereunder and to preserve the intrinsic value and material terms and conditions of the Award as in effect prior to the Change in Control, and (2) immediately following the Change in Control the Award relates to shares of stock in the surviving or resulting entity which are publicly traded and listed on a national securities exchange.

On each date that cash dividends are paid to holders of Common Stock, the Participant will be credited with a number of additional Restricted Stock Units equal to (1) the product of (A) the number of then-outstanding Restricted Stock Units held by the Participant as of the date of record for such dividend multiplied by (B) the per share cash dividend amount, divided by (2) the closing stock price of Common Stock on the NYSE Composite Tape on the date of record for such dividend. Such additional Restricted Stock Units will be subject to the same vesting conditions and restrictions as the underlying Restricted Stock Units to which they relate and shall be subject to all the terms and conditions of this Agreement and the Plan.

The Restricted Stock Units and the Participant's rights under this Agreement may not be sold, assigned, transferred, pledged or otherwise encumbered.

Nothing contained in this Agreement or in the Plan shall confer upon the Participant any right to continue in the employment of, or remain in the service of, Valvoline or any of its Subsidiaries.

Information about the Participant and the Participant's participation in the Plan may be collected, recorded and held, used and disclosed by and among Valvoline, its Subsidiaries and any third party Plan administrators as necessary for the purpose of managing and administering the Plan. The Participant understands that such processing of this information may need to be carried out by Valvoline, its affiliates and Subsidiaries and by third party administrators whether such persons are located within the Participant's country or elsewhere, including the United States of America. By accepting this Award, the Participant consents to the processing of information relating to the Participant and the Participant's participation in the Plan in any one or more of the ways referred to above.

The Participant consents and agrees to electronic delivery of any documents that Valvoline may elect to deliver (including, but not limited to, prospectuses, prospectus supplements, grant or award notifications and agreements, account statements, annual and quarterly reports, and all other forms of communications) in connection with this and any other award made or offered under the Plan. The Participant understands that, unless earlier revoked by the Participant by giving written notice to Valvoline at 100 Valvoline Way; Lexington, KY 40509; Attention: Stock Plan Administrator, this consent shall be effective for the duration of the Award. The Participant also understands that the Participant shall have the right at any time to request that Valvoline deliver written copies of any and all materials referred to above at no charge.

In consideration of this Award, the Participant agrees that, during the Participant's employment and the twenty-four (24) month period following the Participant's termination of employment for any reason, without the prior written consent of Valvoline, the Participant will not:

(i) engage directly or indirectly in any manner or capacity as principal, agent, partner, officer, director, employee or otherwise in any business or activity competitive with the business conducted by Valvoline or any of its Subsidiaries; or

(ii) perform any act or engage in any activity that is detrimental to the best interests of Valvoline or any of its Subsidiaries, including, without limitation:

(a) solicit or encourage any existing or former employee, director, contractor, consultant, customer or supplier of Valvoline or any of its Subsidiaries to terminate his, her or its relationship with Valvoline or any of its Subsidiaries for any reason; or

(b) disclose proprietary or confidential information of Valvoline or any of its Subsidiaries to third parties or use any such proprietary or confidential information for the benefit of anyone other than Valvoline and its Subsidiaries (clauses (i) and (ii), the " Participant Covenants ");

provided , however , that clause (ii) above shall not be breached in the event that the Participant discloses proprietary or confidential information to the Securities and Exchange Commission, to the extent necessary to report suspected or actual violations of U.S. securities laws, or the Participant's disclosure of proprietary or confidential information is protected under the whistleblower provisions of any applicable law or regulation. Furthermore, Participant is advised that if Participant discloses proprietary or confidential information of Valvoline that constitutes a trade secret to which the U.S. Defend Trade Secrets Act (18 USC Section 1833(b)) applies, then Participant shall not be held criminally or civilly liable under any federal or state trade secret law, or considered to be in violation of the terms of this Agreement, where Participant's disclosure is made solely for the purpose of reporting or investigating a suspected violation of law and in confidence to a federal, state, or local government official, whether directly or indirectly, or to an attorney; or where Participant's disclosure is made in a complaint or other document filed in a lawsuit or other proceeding against Valvoline and such filing is made under seal. The Participant understands that if he or she makes a disclosure of proprietary or confidential information that is covered above, he or she is not required to inform Valvoline, in advance or otherwise, that such disclosure(s) has been made. Nothing in this Agreement shall prohibit the Participant from maintaining the confidentiality of a claim with a governmental agency that is responsible for enforcing a law, or cooperating, participating or assisting in any governmental or regulatory entity investigation or proceeding.

Notwithstanding any other provision of the Plan or this Agreement to the contrary, but subject to any applicable laws to the contrary, the Participant agrees that in the event the Participant fails to comply or otherwise breaches any of the Participant Covenants either during the Participant's employment or within twenty-four (24) months following the

Participant's termination of employment for any reason, Valvoline may: (i) cancel this Award; (ii) eliminate or reduce the amount of any compensation, benefit, or payment otherwise payable by Valvoline or any of its Subsidiaries (either directly or under any employee benefit or compensation plan, agreement, or arrangement, except to the extent such compensation, benefit or payment constitutes deferred compensation under Section 409A of the Internal Revenue Code (" Section 409A ") and such elimination or reduction would trigger a tax or penalty under Section 409A) to or on behalf of the Participant in an amount up to the total amount paid or payable to the Participant under this Agreement; and/or (iii) require the Participant to pay Valvoline an amount up to the total amount paid to the Participant under this Agreement, in each case together with the amount of Valvoline's court costs, attorney fees, and other costs and expenses incurred in connection therewith. For purposes of this paragraph, the total amount paid under this Agreement shall be determined based on the closing stock price of Common Stock on the date or dates any shares of Common Stock are delivered in accordance with this Agreement, as determined by the Compensation Committee.

This Award of Restricted Stock Units is subject to the Participant's on-line acceptance of the terms and conditions of this Agreement through the Fidelity website.

By accepting the terms and conditions of this Agreement, the Participant acknowledges receipt of a copy of the Plan, Prospectus, and Valvoline's most recent Annual Report and Proxy Statement (the " Prospectus Information "). The Participant represents that he or she is familiar with the terms and provisions of the Prospectus Information and hereby accepts this Award on the terms and conditions set forth herein and in the Plan, and acknowledges that he or she had the opportunity to obtain independent legal advice at his or her expense prior to accepting this Award.

IN WITNESS WHEREOF, Valvoline has caused this instrument to be executed and delivered effective as of the day and year first above written.

Valvoline Inc.

By: ________________________________

Name: ________________________________

Acceptance Date: ________________________

EXHIBIT 10.12

ASHLAND INC. NONQUALIFIED EXCESS BENEFIT

PENSION PLAN

Effective January 1, 2005

WHEREAS , the Employee Retirement Income Security Act of 1974 ("ERISA") establishes maximum limitations on benefits and contributions for retirement plans which meet the requirements of Section 401(a) of the Internal Revenue Code of 1986, as amended ("Code");

WHEREAS , Ashland Inc. ("Ashland" or the "Company") maintains certain pension plans which are subject to the aforesaid limitations on benefits and contributions;

WHEREAS , new rules were enacted effective January 1, 2005 affecting certain nonqualified plans;

WHEREAS , Ashland desires to comply with those new rules;

NOW, THEREFORE , effective January 1, 2005, except as may otherwise be provided, Ashland does hereby amend and restate the Ashland Inc. Nonqualified Excess Benefit Plan in accordance with the following terms and conditions:

1. Designation and Purpose of Plan . The Plan is designated the "Ashland Inc. Nonqualified Excess Benefit Pension Plan" ("Plan"). The purpose of the Plan is to provide benefits for certain employees in excess of the limitations on contributions, benefits, and compensation imposed by Sections 415 and 401(a)(17) of the Code (including successor provisions thereto) on the plans to which those Sections apply. The portion of the Plan providing benefits in excess of the Section 415 limits is an "excess benefit plan" as that term is defined in Section 3(36) of ERISA. It is intended that the portion, if any, of the Plan that is not an excess benefit plan shall be maintained primarily for a select group of management or highly compensated employees.

This Plan is effective January 1, 2005, except as may otherwise be provided. Amendment No. 1 to the Plan that was effective December 31, 2004 shall be null and void and treated as though never adopted. For purposes of the Plan, the terms "Specified Employee," "Termination of Employment" and "Effective Retirement Date" shall have the same definitions as they have in the Ashland Inc. Supplemental Early Retirement Plan for Certain Employees, or its successor ("SERP"); provided, however, effective on and after October 1, 2008, and for Terminations of Employment occurring thereafter, such term shall be applied by substituting "three years" for "five years."

2. Eligibility . Subject to Section 11, the Plan shall apply to those employees (referred to as eligible employees)

(i) who have retired as an early, normal, or deferred normal retiree under the provisions of the Ashland Inc. and Affiliates Pension Plan ("Ashland Pension Plan"), as it may be amended, from time to time, or under provisions of any other retirement plan, as such other plan may be amended from time to time, which, from time to time, is specifically designated by Ashland for purposes of eligibility and benefits under the Plan (all such plans, including the Ashland Pension Plan, are hereinafter referred to jointly and severally as "Affected Plans") with a benefit as computed under Section 3; and

(ii) who have not been terminated from employment due to Cause. Cause shall mean the willful and continuous failure of an employee to substantially perform his or her duties to Ashland (other than any such failure resulting from incapacity due to physical or mental illness), or the willful engaging by an employee in gross misconduct materially and demonstrably injurious to Ashland, each to be determined by Ashland in its sole discretion.

Notwithstanding anything to the contrary contained herein, any employee who would be entitled to participate in this Plan, but who is not a member of a select group of management or a highly compensated employee, shall be entitled to a benefit amount payable under the Plan based solely on the limitations on benefits imposed under Section 415 of the Code. The potential benefit of an eligible employee before such employee becomes a retiree may be computed under Section 3 at any point in time using assumptions deemed reasonable or convenient by Ashland. Participation in the Plan is not subject to an election by an eligible employee. Participation is automatic and is based on the employee's status on Ashland's records at the applicable time. An eligible employee hereunder is referred to as a retiree at the time such eligible employee would have his or her benefit hereunder commence pursuant to the terms of Section 3(iii).

3. Benefit Amount.

(i) Computation if not Eligible for Retirement Growth Account. The computation described in this paragraph (i) applies to the portion of a retiree's benefit that is not eligible for the Retirement Growth Account in the Ashland Inc. and Affiliates Pension Plan. At any particular time, the benefit payable to a retiree eligible to participate in this Plan pursuant to the provisions in Section 2 shall be computed by subtracting from (A) the sum of (B) and (C) where -

(A) shall be the single life annuity that would be payable at age 62 to such retiree under the Affected Plans -

(1) with the benefit so payable thereunder calculated by disregarding any salary deferrals that may have been made by such retiree under the Ashland Inc. Deferred Compensation Plan and thereby restoring any salary that may have been so deferred to such retiree's compensation for purposes of the Affected Plans, and

(2) prior to any reductions made because of the limits imposed by Sections 415 and 401(a)(17) of the Code;

provided that the single life annuity that would be so payable under the Ashland Pension Plan shall be computed without applying any offset attributable to the Ashland Inc. Leveraged Employee Stock Ownership Plan ("LESOP"), and such single life annuity shall be actuarially adjusted to be equivalent to a single life annuity payable at the particular time applicable based upon the applicable actuarial assumptions and other relevant provisions used for the same in the Affected Plans;

(B) shall be the single life annuity that would be payable at age 62 to such retiree under the Affected Plans after reducing the amount so payable for the limits imposed by Sections 415 and 401(a)(17) of the Code, provided that such single life annuity that would be so payable under the Ashland Pension Plan shall be computed after first applying the offset attributable to the Offset Account (as that term is defined under the LESOP) in the LESOP, and each such single life annuity shall be actuarially adjusted to be equivalent to a single life annuity payable at the particular time applicable based upon the applicable actuarial assumptions and other relevant provisions used for the same in the Affected Plans; and

(C) shall be the single life annuity that would be actuarially equivalent to such retiree's non-forfeitable portion of the Offset Account under the LESOP as of the valuation date thereunder coincident with or next preceding such retiree's termination of employment using the actuarial assumptions prescribed for this purpose in the Ashland Pension Plan.

(ii) Computation if Eligible for Retirement Growth Account. The computation described in this paragraph (ii) applies to the portion of a retiree's benefit that is eligible for the Retirement Growth Account in the Ashland Pension Plan. At any particular time, the benefit payable to a retiree eligible to participate in this Plan pursuant to the provisions in Section 2 shall be computed by subtracting from (A) the sum of (B) and (C) where -

(A) shall be the balance of the Retirement Growth Account added to the actuarially equivalent lump sum of any single life annuity that would be payable at age 62 to such retiree under the Affected Plans (other than the Ashland Pension Plan) based upon the applicable actuarial assumptions and other relevant provisions used for the same in the Affected Plans -

(1) with the benefit so payable thereunder calculated by disregarding any salary deferrals that may have been made by such retiree under the Ashland Inc. Deferred Compensation Plan and thereby restoring any salary that may have been so deferred to such retiree's compensation for purposes of the Affected Plans, and

(2) prior to any reductions made because of the limits imposed by Sections 415 and 401(a)(17) of the Code;

provided that the Retirement Growth Account balance that would be so payable under the Ashland Pension Plan shall be computed without applying any offset attributable to the Ashland Inc. Leveraged Employee Stock Ownership Plan ("LESOP");

(B) shall be the balance of the Retirement Growth Account added to the actuarially equivalent lump sum of any single life annuity that would be payable at age 62 to such retiree under the Affected Plans (other than the Ashland Pension Plan) based upon the applicable actuarial assumptions and other relevant provisions used for the same in the Affected Plans after reducing the amount so payable for the limits imposed by Sections 415 and 401(a)(17) of the Code, provided that such Retirement Growth Account balance that would be so payable under the Ashland Pension Plan shall be computed after first applying the offset attributable to the Offset Account (as that term is defined under the LESOP) in the LESOP; and

(C) shall be such retiree's non-forfeitable portion of the Offset Account under the LESOP as of the valuation date thereunder coincident with or next preceding such retiree's termination of employment.

(iii) Commencement. The benefit computed under paragraph (i) or (ii) of this Section 3 shall commence or otherwise be paid or transferred on or after the eligible employee's Effective Retirement Date pursuant to the eligible employee's election as to the time of payment, as provided in Section 4. Notwithstanding anything contained in the Plan to the contrary, an eligible employee who is a Specified Employee shall have the distribution of his or her benefit which is made on account of a Termination of Employment commence on a date that is not earlier than six months after his or her Termination of Employment.

(iv) Vesting. Unless an eligible employee is terminated due to Cause as defined in Section 2 and subject to Section 10, an eligible employee who has a benefit hereunder shall have a non-forfeitable right to that benefit to the extent such an employee has a non-forfeitable benefit under an Affected Plan.

4. Payment Options.

(i) Election. Subject to applicable transition rules under guidance issued by the Treasury under section 409A of the Code, eligible employees will have 30 days following the earlier of January 1, 2005 or the date they are first eligible for the Plan to elect a form of distribution from among those available under Section 4(ii). For this purpose, an eligible employee is first eligible for the Plan on the first day of the calendar year following the calendar year during which the eligible employee first accrued a benefit hereunder. Any subsequent change to that election shall be subject to the provisions of this paragraph (i), sub-parts (A), (B) and (C), as applicable. In all other events, an eligible employee's election is irrevocable. Notwithstanding anything in the foregoing to the contrary, any eligible employee who elects to change his or her election must meet the following requirements, as applicable –

(A) The election may not take effect until at least 12 months after it is made;

(B) If the distribution relates to a Termination of Employment, the first payment that would be made pursuant to the election would be at least five years after the amount otherwise would have been distributed but for this election, except in the event of the eligible employee's death; and

(C) The election must be made at least 12 months before the first scheduled payment that would have been payable at a specified time or pursuant to a fixed schedule.

An eligible employee may not accelerate the time or schedule of any payment under the Plan, except as provided in guidance from the Treasury under Internal Revenue Code section 409A as may be allowed by Ashland in a manner consistent therewith. A retiree eligible under Section 2 for the benefit under Section 3 shall elect the form in which such benefit shall be paid from among those identified in this Section 4 consistent with time for making such an election in this paragraph (i).

(ii) Optional Forms of Payment.

(A) Lump Sum Option. All benefits provided by the Plan shall be payable in a single lump sum payment, computed under the applicable provisions of Section 3. A retiree's benefit is payable as a lump sum at the time specified under Section 3(iii) (or as soon thereafter as reasonably possible), in a manner pursuant to the election under Section 4(i) under an option identified in one of the following sub-paragraphs of this Section 4(ii), but only if the retiree was eligible for the Ashland Inc. Deferred Compensation Plan for Employees (2005), or its successor. In all other events, the retiree's benefit shall be distributed as a lump sum at the time specified under Section 3(iii) (or as soon thereafter as reasonably possible). A lump sum benefit payment of a benefit under Section 3(i) shall be computed on the basis of the actuarially equivalent present value of such retiree's benefit under Section 3(i) of the Plan payable at the particular time applicable based upon such actuarial assumptions (including the interest rate) as determined from time to time by the Personnel and Compensation Committee of Ashland's Board of Directors (Committee).

(B) Default Lump Sum Deferral Option. If the eligible employee fails to make an election under Section 4(i) then the benefit shall be transferred at the time specified under Section 3(iii) (or as soon thereafter as reasonably possible) to the Ashland Inc. Deferred Compensation Plan for Employees (2005), or its successor, and held pursuant to the terms of such plan and thereafter distributed as provided thereunder. Notwithstanding the foregoing, if an eligible employee fails to make an election under this Plan, but does make an effective election for the distribution of a benefit under the SERP, then the distribution of the benefit hereunder shall be made in the same manner as the eligible employee had elected under the SERP. In all events, an eligible employee who is a Specified Employee shall have the transfer or other distribution of his or her benefit which is made on account of a Termination of Employment commence on a date that is not earlier than six months after his or her Termination of Employment.

(C) Lump Sum Payment Option. An eligible employee may elect to have his or her benefit paid as a single lump sum at the time specified under Section 3(iii) (or as soon thereafter as reasonably possible). In all events, an eligible employee who is a Specified Employee shall have the distribution of his or her benefit which is made on account of a Termination of Employment commence on a date that is not earlier than six months after his or her Termination of Employment.

(D) Elective Lump Sum Deferral Option. An eligible employee may elect to have his or her benefit transferred to the Ashland Inc. Deferred Compensation Plan for Employees (2005), or any successor thereto, as a single lump sum at the time specified under Section 3(iii) (or as soon thereafter as reasonably possible), and held pursuant to the terms of such plan and thereafter distributed as provided thereunder. In all events, an eligible employee who is a Specified Employee shall have the transfer of his or her benefit which is made on account of a Termination of Employment commence on a date that is not earlier than six months after his or her Termination of Employment.

(E) Time of Distribution or Transfer. Subject to the required delay of a distribution or transfer of a Plan benefit for an eligible employee who is a Specified Employee, the distribution or transfer of a benefit in the foregoing sub-paragraphs of this Section 4(ii) shall be paid by the later of (a) the end of the calendar year in which occurs the date specified under Section 3(iii) or (b) the 15th day of the third calendar month following such date.

(F) Death Before Payment. For deaths occurring after the approval of this restatement, if an eligible employee or a retiree with a vested benefit eligible under Section 2 for the benefit under Section 3 dies before his or her Effective Retirement Date, the benefit that would have been paid to such eligible employee or retiree had he or she survived to his or her Effective Retirement Date shall be paid to the beneficiary designated by such eligible employee or retiree as he or she elected from the options made available by Ashland; provided, however, that the benefit must be completely distributed by the end of the fifth calendar year following the calendar year in which the eligible employee or retiree died. In the absence of an election, the benefit shall be paid in January of the calendar year following the calendar year in which the eligible employee or retiree died. If the eligible employee or retiree dies before he or she attained age 55 and before the sum of his or her age and years of continuous service equaled 80, the benefit payable hereunder shall be actuarially adjusted using the assumptions under the Affected Plan that applied at the time of the eligible employee's or retiree's death

(G) Distribution Exceptions . Notwithstanding anything in the Plan to the contrary, the following shall apply to the distribution of benefits under the Plan:

(a) Distribution shall be made pursuant to a domestic relations order as described in Section 5;

(b) Distribution of a benefit shall be made in a single lump sum payment as soon as possible after a retiree's Termination of Employment or death if the distribution, when added to the amount that would be payable from the Ashland Inc. Supplemental Early Retirement Plan for Certain Employees will not exceed the adjusted Code section 402(g) limit; and

(c) Distribution may be made in the discretion of Ashland for any other permitted purpose under Treas. Reg. section 1.409A-3(j)(4)(ii)-(xiv).

5. Non-Assignment Except for Domestic Relations Order . Except as otherwise provided in connection with a division of property under a domestic relations proceeding under state law and subject to Section 9(iii), no right or interest of the eligible employees or retirees under this Plan shall be subject to involuntary alienation, assignment or transfer of any kind. An eligible employee may voluntarily assign his or her rights under the Plan. Ashland, the Board, the Committee and any of their delegates shall not review, confirm, guarantee or otherwise comment on the legal validity of any voluntary assignment. Ashland and its delegates may review, provide recommendations and approve submitted domestic relations orders using procedures similar to those that apply to qualified domestic relations orders under the qualified pension plans sponsored by Ashland. A domestic relations order intended to assign a benefit hereunder to a former spouse of an eligible employee must be delivered to the Company. The Company will review the order to determine if it is qualified. Upon notification by the Company that the order is qualified, the spouse will be able to elect a distribution of the assigned benefit by the end of the fifth calendar year following the calendar year during which the Company notifies the former spouse that the order is qualified. In all events, the entire assigned benefit must be distributed by the end of the fifth calendar year following the calendar year during which the Company notifies the former spouse that the order is qualified. Notwithstanding anything in the Plan to the contrary, if an assigned benefit is equal to or less than the adjusted Code section 402(g) limit it shall be distributed to the former spouse as soon as administratively possible. The amount of assigned benefits shall be calculated in a manner consistent with the table summary attached hereto and incorporated herein as Appendix A. The Company may prescribe procedures that are consistent with this Section 5 and applicable law to implement benefit assignments pursuant to qualified orders.

6. Costs . In appropriate cases, Ashland may cause an affiliate to make the payment (or an allocable portion thereof) called for by the Plan directly to the person eligible to receive such payments.

7. Confidentiality and No Competition All benefits under the Plan shall be forfeited by anyone who discloses confidential information to others outside of Ashland's organization without the prior written consent of Ashland or who accepts, during a period of five (5) years following his or her retirement, any employment or consulting activity which is in direct conflict with the business of Ashland at such time. Such determination shall be made in the sole discretion of Ashland. A breach of this Section 8 shall result in an immediate forfeiture of benefits payable to any retiree under the Plan.

8. Lost Participant/Beneficiary . In the event Ashland, after reasonable effort, is unable to locate a person to whom a benefit is payable under the Plan, such benefit shall be forfeited; provided, however, that such benefit shall be reinstated (in the

same amount and form as that of the benefit forfeited without any obligation to pay amounts which would otherwise have previously come due) upon proper claim made by such person prior to termination of the Plan.

9. Miscellaneous .

(i) The obligations of Ashland and any affiliate thereof with respect to benefits under this Plan constitute merely the unsecured promise of Ashland and/or its affiliates, as the case may be, to make the payments provided for in this Plan. No property of Ashland or any affiliate is or shall, by reason of the Plan, be held in trust or be deemed to be held in trust for any person and any participant or beneficiary under the Plan, the estate of either of them and any person claiming under or through them shall not have, by reason of the Plan, any right, title or interest of any kind in or to any property of Ashland and its affiliates. To the extent any person has a right to receive payments under the Plan, such right shall be no greater than the right of any unsecured general creditor of Ashland/ or its affiliates.

(ii) Ashland shall administer the Plan. Ashland shall have full power and authority to amend, modify, or terminate the Plan and shall have all powers and the discretion necessary and convenient to administer the Plan in accordance with its terms, including, but not limited to, all necessary, appropriate, discretionary and convenient power and authority to interpret, administer and apply the provisions of the Plan with respect to all persons having or claiming to have any rights, benefits, entitlements or obligations under the Plan. This includes, without limitation, the ability to construe and interpret provisions of the Plan, make determinations regarding law and fact, reconcile any inconsistencies between provisions in the Plan or between provisions of the Plan and any other statement concerning the Plan, whether oral or written, supply any omissions to the Plan or any document associated with the Plan, and to correct any defect in the Plan or in any document associated with the Plan. All such interpretations of the Plan and documents associated with the Plan and questions concerning its administration and application, as determined by Ashland, shall be binding on all persons having an interest under the Plan. Ashland may delegate (and may give to its delegatee the power and authority to redelegate) to any person or persons any responsibility, power or duty under the Plan. Decisions of Ashland or its delegatee shall be final, conclusive, and binding on all parties.

(iii) Ashland or any affiliate may, offset or cause an offset to be made against any payment to be made under the Plan in regard to amounts due and owing from such person to Ashland or any affiliate. Notwithstanding anything to the contrary in this paragraph (iii), legally required tax withholding on benefit payments, the recovery, by any means, of previously made overpayments of Plan benefits, or the direct deposit of Plan benefit payments in a bank or similar account, provided that such direct deposits are allowed by Ashland in the administration of the Plan and provided that such direct deposit is not part of an arrangement constituting an assignment or alienation, shall not be considered to be prohibited under this paragraph (iii).

(iv) No amount paid or payable under the Plan shall be deemed salary or other compensation to any employee for the purpose of computing benefits to which such employee or any other person may be entitled under any employee benefit plan of Ashland or any affiliate.

(v) To the extent that state law shall not have been preempted by ERISA or any other law of the United States, the Plan shall be governed by the laws of the Commonwealth of Kentucky.

10. Change in Control . Notwithstanding any provision of this Plan to the contrary, in the event of a Change in Control (as defined hereinafter in this Section 10), any employee who would or will meet the requirements of Section 2, except that such employee has not or is not eligible to retire or terminate with a vested early, normal or deferred retirement benefit under any Affected Plan, shall be deemed to have a vested benefit hereunder, regardless of when such employee actually retires and commences benefits under an Affected Plan and such entitlement shall be vested from and after the time of such Change in Control. Ashland shall reimburse an employee for legal fees and expenses incurred if he or she is required to, and is successful in, seeking to obtain or enforce any right to payment pursuant to the Plan after a Change in Control. In the event that it shall be determined that such employee is properly entitled to the payment of benefits hereunder, such employee shall also be entitled to interest thereon payable

in an amount equivalent to the prime rate of interest (quoted by Citibank, N.A. as its prime commercial lending rate on the latest date practicable prior to the date of the actual commencement of payments) from the date such payment(s) should have been made to and including the date it is made. Notwithstanding any provision of this Plan to the contrary, the Plan may not be amended after a Change in Control without the written consent of a majority of the Board of Directors of Ashland (hereinafter "Board") who were directors prior to the Change in Control. For purposes of this Section 10, Change in Control shall be deemed to occur (1) upon approval of the shareholders of Ashland (or if such approval is not required, upon the approval of the Board) of (A) any consolidation or merger of the Company (a "Business Combination"), other than a consolidation or merger of the Company into or with a direct or indirect wholly-owned subsidiary, in which the shareholders of the Company own, directly or indirectly, less than 50% of the then outstanding shares of common stock of the Business Combination that are entitled to vote generally for the election of directors of the Business Combination or pursuant to which shares of the Company's Common Stock would be converted into cash, securities or other property, other than a merger of the Company in which the holders of the Company's Common Stock immediately prior to the merger have substantially the same proportionate ownership of common stock of the surviving corporation immediately after the merger, (B) any sale, lease, exchange, or other transfer (in one transaction or a series of related transactions) of all or substantially all the assets of Ashland, provided, however, that no sale, lease, exchange or other transfer of all or substantially all the assets of Ashland shall be deemed to occur unless assets constituting 80% of the total assets of Ashland are transferred pursuant to such sale, lease exchange or other transfer, or (C) adoption of any plan or proposal for the liquidation or dissolution of Ashland, (2) when any person (as defined in Section 3(a)(9) or 13(d) of the Exchange Act), other than Ashland or any subsidiary or employee benefit plan or trust maintained by Ashland, shall become the beneficial owner (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of more than 25% of Ashland's Common Stock outstanding at the time, without the approval of the Board, or (3) at any time during a period of two consecutive years, individuals who at the beginning of such period constituted the Board shall cease for any reason to constitute at least a majority thereof, unless the election or the nomination for election by Ashland's shareholders of each new director during such two-year period was approved by a vote of at least two-thirds of the directors then still in office who were directors at the beginning of such two-year period.

11. Initial Claim – Notice of Denial. If any claim for benefits (within the meaning of section 503 of ERISA) is denied in whole or in part, Ashland (which shall

(a) include Ashland or its delegate throughout this Section 11) will provide written notification of the denied claim to the participant or beneficiary, as applicable, (hereinafter referred to as the claimant) in a reasonable period, but not later than 90 days after the claim is received. The 90-day period can be extended under special circumstances. If special circumstances apply, the claimant will be notified before the end of the 90-day period after the claim was received. The notice will identify the special circumstances. It will also specify the expected date of the decision. When special circumstances apply, the claimant must be notified of the decision not later than 180 days after the claim is received.

The written decision will include:

(i) The reasons for the denial.

(ii) Reference to the Plan provisions on which the denial is based. The reference need not be to page numbers or to section headings or titles. The reference only needs to sufficiently describe the provisions so that the provisions could be identified based on that description.

(iii) A description of additional materials or information needed to process the claim. It will also explain why those materials or information are needed.

(iv) A description of the procedure to appeal the denial, including the time limits applicable to those procedures. It will also state that the claimant may file a civil action under section 502 of ERISA (ERISA – §29 U.S.C. 1132). The claimant must complete the Plan's appeal procedure before filing a civil action in court.

If the claimant does not receive notice of the decision on the claim within the prescribed time periods, the claim is deemed denied. In that event the claimant may proceed with the appeal procedure described below.

(b) Appeal of Denied Claim. The claimant may file a written appeal of a denied claim with Ashland in such manner as determined from time to time. Ashland is the named fiduciary under ERISA for purposes of the appeal of the denied claim. Ashland may delegate its authority to rule on appeals of denied claims and any person or persons or entity to which such authority is delegated may re-delegate that authority. The appeal must be sent at least 60 days after the claimant received the denial of the initial claim. If the appeal is not sent within this time, then the right to appeal the denial is waived.

The claimant may submit materials and other information relating to the claim. Ashland will appropriately consider these materials and other information, even if they were not part of the initial claim submission. The claimant will also be given reasonable and free access to or copies of documents, records and other information relevant to the claim.

Written notification of the decision on the appeal will be delivered to the claimant in a reasonable period, but not later than 60 days after the appeal is received. The 60-day period can be extended under special circumstances. If special circumstances apply, the claimant will be notified before the end of the 60-day period after the appeal was received. The notice will identify the special circumstances. It will also specify the expected date of the decision. When special circumstances apply, the claimant must be notified of the decision not later than 120 days after the appeal is received.

Special rules apply if Ashland designates a committee as the appropriate named fiduciary for purposes of deciding appeals of denied claims. For the special rules to apply, the committee must meet regularly on at least a quarterly basis.

When the special rules for committee meetings apply the decision on the appeal must be made not later than the date of the committee meeting immediately following the receipt of the appeal. If the appeal is received within 30 days of the next following meeting, then the decision must not be made later than the date of the second committee meeting following the receipt of the appeal.

The period for making the decision on the appeal can be extended under special circumstances. If special circumstances apply, the claimant will be notified by the committee or its delegate before the end of the otherwise applicable period within which to make a decision. The notice will identify the special circumstances. It will also specify the expected date of the decision. When special circumstances apply, the claimant must be notified of the decision not later than the date of the third committee meeting after the appeal is received.

In any event, the claimant will be provided written notice of the decision within a reasonable period after the meeting at which the decision is made. The notification will not be later than 5 days after the meeting at which the decision is made.

Whether the decision on the appeal is made by a committee or not, a denial of the appeal will include:

(i) The reasons for the denial.

(i) Reference to the Plan provisions on which the denial is based. The reference need not be to page numbers or to section headings or titles. The reference only needs to sufficiently describe the provisions so that the provisions could be identified based on that description.

(i) A statement that the claimant may receive free of charge reasonable access to or copies of documents, records and other information relevant to the claim.

(ii) A description of any voluntary procedure for an additional appeal, if there is such a procedure. It will also state that the claimant may file a civil action under section 502 of ERISA (ERISA – §29 U.S.C. 1132).

If the claimant does not receive notice of the decision on the appeal within the prescribed time periods, the appeal is deemed denied. In that event the claimant may file a civil action in court. The decision regarding a denied claim is final and binding on all those who are affected by the decision. No additional appeals regarding that claim are allowed.

IN WITNESS WHEREOF , this amendment and restatement of the Plan is executed this 7 day of October, 2008.

ATTEST:		**ASHLAND INC.**
/s/ Linda L. Foss		/s/ Susan B. Esler
Secretary	By:	Vice President Human Resources and Communications

APPENDIX A

*Actuarial Assumptions for SERP/Excess Plan for Domestic Relations Orders**

Employee Base Salary Pay Band	Employee Age	Former Spouse's Age	Actuarial Assumptions
≥ 23**	≥ Effective Retirement Date*** if had terminated on date the order is approved	≥ Employee's age at Effective Retirement Date*** if employee had terminated on date the order is approved	No actuarial adjustment
≥ 23**	Employee or former spouse or both < above age on date the order is approved	Employee or former spouse or both < above age on date the order is approved	Use Ashland Pension Plan assumptions that would apply to employee under the Pension Plan
21, 22 (23)**	≥ 62	≥ 62	No actuarial adjustment
21, 22 (23)**	Employee or former spouse or both < above age on date the order is approved	Employee or former spouse or both < above age on date the order is approved	Use Ashland Pension Plan assumptions that would apply to employee under the Pension Plan

*The Excess Plan would rarely be affected because, at least for those employees still under the traditional qualified pension plan formula, it is truly unknown whether a benefit is payable under the Excess Plan until the employee actually terminates employment. Therefore, for an employee covered under the traditional qualified pension plan formula, the Excess Plan could only be subject to an order that is entered after the employee terminated employment. Employees in the RGA formula have a determinable Excess Plan benefit each year because it is known each year whether they have missed contribution credits due to base compensation exceeding the Code §401(a)(17) limit. Any actuarial adjustments to the Excess Plan benefit would use the applicable adjustments from the qualified pension plan.

**Band 23 employees under the old formula are treated the same as bands 21 and 22 employees.

***The Effective Retirement Date is the earliest date the employee could elect to commence SERP payments if the employee had actually terminated from employment.

EXHIBIT 10.15

AMENDED AND RESTATED
ASHLAND INC.
SUPPLEMENTAL EARLY RETIREMENT PLAN
FOR CERTAIN EMPLOYEES
Generally Effective as of January 1, 2011

ARTICLE I . PURPOSE AND EFFECTIVE DATE .

1.01 **Purpose**

The purpose of the Plan is to allow designated employees to retire prior to their sixty-fifth birthday without an immediate substantial loss of income. This Plan is a supplemental retirement arrangement for a select group of management.

1.02 **Effective Date**

The Amended and Restated Ashland Inc. Supplemental Early Retirement Plan for Certain Employees is effective January 1, 2011, except as otherwise provided. This amended and restated Plan supersedes all prior versions of this Plan that were effective before January 1, 2011 with respect to Effective Retirement Dates that occur on or after such date, except as may otherwise be provided herein. The rights and obligations of former Employees receiving Plan benefits before January 1, 2011 shall be governed by the terms of the Plan in effect at the time of each such former Employee's Effective Retirement Date or at the time such an Employee otherwise ceased to be an Employee. Notwithstanding anything herein to the contrary, amendments to the Plan that were executed since July 1, 2003 through the date of the adoption of this amendment and restatement shall continue to apply hereafter according to their respective terms; provided, however, that Amendment No. 1 to the Eleventh restatement of the Plan that was effective December 31, 2004 shall be null and void and treated as though never adopted.

ARTICLE II. DEFINITIONS.

The following terms used herein shall have the following meanings unless the context otherwise requires:

2.01 **"Age"** - means the age of an Employee as of his or her last birthday, except as may otherwise be provided under Sections 5.01 and 5.02 in the event of a Change in Control.

2.02 **"Annual Retirement Income"** - means the lifetime annual income that would be payable to a Participant that is converted to the equivalent lump sum benefit payable under this Plan by Ashland commencing on such Participant's Effective Retirement Date, subject to the provisions of Section 5.04.

2.03 **"Ashland"** - means Ashland Inc. and its present or future subsidiary corporations.

2.04 **"Board"** - means the Board of Directors of Ashland and its designees.

2.05 **"Change in Control"** -shall be deemed to occur (1) upon approval of the shareholders of Ashland (or if such approval is not required, upon the approval of the Board) of (A) any consolidation or merger of the Company (a "Business Combination"), other than a consolidation or merger of the Company into or with a direct or indirect wholly-owned subsidiary, in which the shareholders of the Company own, directly or indirectly, less than 50% of the then outstanding shares of common stock of the Business Combination that are entitled to vote generally for the election of directors of the Business Combination or pursuant to which shares of the Company's Common Stock would be converted into cash, securities or other property, other than a merger of the Company in which the holders of the Company's Common Stock immediately prior to the merger have substantially the same proportionate ownership of common stock of the surviving corporation immediately after the merger, (B) any sale, lease, exchange, or other transfer (in one transaction or a series of related transactions) of all or substantially all the assets of Ashland, provided, however, that no sale, lease, exchange or other transfer of all or substantially all the assets of Ashland shall be deemed to occur unless assets constituting 80% of the total assets of Ashland are transferred pursuant to such sale, lease exchange or other transfer, or (C) adoption of any plan or proposal for the liquidation or dissolution of Ashland, (2) when any person (as defined in Section 3(a)(9) or 13(d) of the Exchange Act), other than Ashland or any subsidiary or employee benefit plan or trust maintained by Ashland, shall become the beneficial owner (as defined in Rule 13d-3 under the Exchange Act), directly or indirectly, of more than 25% of Ashland's Common Stock outstanding at the time, without the approval of the Board, or (3) at any time during a period of two consecutive years, individuals who at the beginning of such period constituted the Board shall cease for any reason to constitute at least a majority thereof, unless the election or the nomination for election by Ashland's shareholders of each new director during such two-year period was approved by a vote of at least two-thirds of the directors then still in office who were directors at the beginning of such two-year period.

2.06 **"Change in Control Agreements"** - means those contractual agreements, in effect from time to time, which are approved by the Board and which provide an Employee with benefits in the event of a change in control as defined in such agreement or other benefits that may be included in such an agreement.

2.07 **"Committee"** - means the Personnel and Compensation Committee of the Board and its designees.

2.08 **"Continuous Service"** - means Continuous Service as defined in the Pension Plan, except as the determination of Continuous Service is modified for purposes of this Plan.

2.09 **"Effective Retirement Date"** - means:

(a) <u>In General</u>. The Effective Retirement Date of an Employee that is a Participant under Section 3.01 is whichever of the following applies, so long as the Participant has at least five years of Continuous Service.

(1) The Effective Retirement Date is the first day of the month following the date a Participant incurs a Termination of Employment -

(i) on or after the date the sum of the Participant's Age and Continuous Service is 80; or

(ii) on or after the date the Participant attains Age 55.

(2) The Effective Retirement Date of a Participant that incurs a Termination of Employment before the dates specified in (1) above is the first day of the month following the date the Participant attains Age 55.

(b) <u>Change in Control</u>. The Effective Retirement Date in the event of a Change in Control of a Participant considered to be a Level I or II Participant who has a Change in Control Agreement shall be the first day of the month following (i) such Participant's termination for reasons other than "Cause" or (ii) such Participant's resignation for "Good Reason" (as they are defined in the applicable Change in Control Agreement). The Effective Retirement Date in the event of a Change in Control of a Participant considered to be a Level III, IV or V Participant, or who is considered to be a Level I or II Participant and who does not have a Change in Control Agreement, shall be the first day of the month following such Participant's termination for reasons other than "Cause". For Participant's who do not have a Change in Control Agreement with Ashland, "Cause" shall have the meaning given to that word in

Section 3.02. In the event a Change in Control, all Participants shall be completely vested in their Plan benefits, regardless of the number of their years of Continuous Service

2.10 **“Employee”** - means, a common law employee of Ashland who is paid on the United States payroll of Ashland Inc.

2.11 **“Final Average Bonus”** - means the Participant’s average bonus paid under the Incentive Compensation Plan (including amounts that may have been deferred) during the highest thirty-six (36) months out of the final eighty-four-month (84) period. The calculation of the eighty-four month period shall be measured back from the Participant’s Termination of Employment that is nearest to or which is coincident with the Participant’s Effective Retirement Date. If the Participant becomes classified below a Level V Employee before the Termination of Employment identified in the preceding sentence, then the date of such change in classification is substituted for the said Termination Date. For these purposes, the “bonus paid” for a particular month within a particular fiscal year under such plan shall be equal to the amount of such bonus actually paid (regardless of the date paid, but excluding any adjustment for the deferral of such payment) to such Participant on account of such fiscal year divided by the number of months contained in such fiscal year which were used in determining the amount of such bonus actually paid to such Participant. The bonus paid that is used to compute the average described in this Section 2.11 shall only be a bonus that is paid to the Participant when such Participant is considered a Level III, IV or V Participant.

2.12 **“Final Average Compensation”** - means the average total compensation paid during the highest paid month period (whether or not consecutive) as determined by the following chart out of the final month period (whether or not consecutive) as determined by the following chart:

Termination of Employment:	Highest Paid Month Period	Final Month Period
January 2011	36 months	84 months
February 2011	37 months	85 months
March 2011	38 months	86 months
April 2011	39 months	87 months
May 2011	40 months	88 months
June 2011	41 months	89 months
July 2011	42 months	90 months
August 2011	43 months	91 months
September 2011	44 months	92 months
October 2011	45 months	93 months
November 2011	46 months	94 months
December 2011	47 months	95 months
January 2012 to December 2015	48 months	96 months
January 2016	48 months	107 months
February 2016	49 months	108 months
March 2016	50 months	109 months
April 2016	51 months	110 months
May 2016	52 months	112 months
June 2016	53 months	113 months

July 2016	54 months	114 months
August 2016	55 months	115 months
September 2016	56 months	116 months
October 2016	57 months	117 months
November 2016	58 months	118 months
December 2016	59months	119 months
January 2017 and after	60 months	120 months

The calculation of the final period shall be measured back from the Participant's Termination of Employment that is nearest to or which is coincident with the Participant's Effective Retirement Date. If the Participant becomes classified below a Level II Employee before the Termination of Employment identified in the preceding sentence, then the date of such change in classification is substituted for the said Termination Date. For these purposes, "total compensation paid" is the sum of the "compensation paid" and the "bonus paid" during a particular month. "Compensation paid" shall be the base rate of compensation for such Participant in effect on the first day of such calendar month. "Bonus paid" shall have the same meaning as set forth in Section 2.11. In the event a payment is due under the Plan after a Change in Control because the Participant was terminated other than for "Cause" or resigned for "Good Reason," the calculation of Final Average Compensation shall include the amount paid under such Participant's Change in Control Agreement. The amount so paid shall be divided by 36 to derive the monthly "total compensation paid" it represents. The total compensation paid that is used compute the average described in this Section 2.12 shall only be total compensation that is paid to the Participant when such Participant is considered a Level I or II Participant. With respect to any Employee who becomes a Participant in the Plan on or after January 1, 2011, the total compensation paid that is used to compute the average in this Section 2.12 shall only be the bonus paid during a particular month.

2.13 **"Hercules Employee"** - means an Employee originally hired by Hercules Inc. or its subsidiary.

2.14 **"Incentive Compensation Plan"** - means the annual bonus paid to Employees in base salary pay band grades 21 and above under the applicable incentive compensation plan.

2.15 **"LESOP"** - means the Ashland Inc. Leveraged Employee Stock Ownership Plan.

2.16 **"Level I, II, III, IV or V Participant or Employee"** - means, the following corresponding base salary pay band grades on the records of the Company or any succeeding equivalent compensation grade designations:

Level	Base Salary Pay Band Grade
Level I	27-30
Level II	25-26
Level III	23-24
Level IV	22
Level V	21

2.17 **"Participant"** - means an Employee that meets the applicable requirements of Article III and who has not incurred a Termination of Employment for Cause, as defined in Section 3.02. A former Employee that did not incur a Termination of Employment for Cause and who has a benefit being paid or payable from the Plan is also a Participant. The term Participant includes Transition Participants, unless the context otherwise requires or unless expressly otherwise provided.

2.18 **"Pension Plan"** - means the Ashland Hercules Pension Plan.

2.19 **"Plan"** - means the Amended and Restated Ashland Inc. Supplemental Early Retirement Plan for Certain Employees, generally effective as of January 1, 2011, as set forth herein.

2.20 **“Service”** - means the number of years and fractional years of employment by Ashland of an Employee, measured from the first day of the month coincident with or next succeeding his or her initial date of employment up to and including the earlier of such Employee's termination from employment or Effective Retirement Date. For purposes of this Section 2.17, Service shall include an Employee’s employment with a subsidiary or an affiliate of Ashland determined in accordance with rules from time to time adopted or approved by the Board, or its delegate; provided, however, that Service for purposes of computing the amount of the benefit payable under the Plan shall not include any period of employment with a corporation or other business entity before such corporation or other business entity became an affiliate of Ashland Inc., as determined by the Board or its delegate. Service shall be calculated based on the rules for calculating Periods of Service under the Pension Plan, except as the determination of Service is modified for purposes of this Plan or under any other document that either directly or indirectly references the calculation of Service for purposes of the Plan. Notwithstanding the foregoing, with respect to any Hercules Employee, Service shall be measured from January 1, 2011.

2.21 **“Specified Employee”** - means, for a particular calendar year, any Employee who was at anytime during the 12 months ending on the December 31 preceding the start of the particular calendar year (the Specified Employee identification date) classified on the records of Ashland as being in base salary pay band grade 23 or higher. Such an Employee shall be classified as a Specified Employee as of January 1 of the particular calendar year (the Specified Employee effective date) and shall remain classified as such for the entirety of such calendar year. Notwithstanding anything to the contrary, no more than 200 Employees may be classified as Specified Employees for any calendar year. Unless otherwise provided in the particular document, this definition of Specified Employee shall apply to all plans, programs, contracts, agreements and other arrangements maintained by the Company that are subject to Code section 409A.

2.22 **“Termination of Employment”** - means a termination from employment resulting in a cessation of performing active service for Ashland **(other than by reason of death or disability)** . An Employee is considered to incur a Termination of Employment on the date **the Employee terminates employment with Ashland or** when it is reasonably anticipated that the Employee's services to Ashland will permanently decrease to 20% or less of the average amount of services performed for Ashland during the immediately preceding 36 month period (or period of total employment if less than 36 months). Notwithstanding anything in the foregoing to the contrary, a Termination of Employment does not occur as a result of military leave, sick leave or other bona fide leave of absence not exceeding six months or the period during which the Employee retains a right to reemployment.

2.23 **“Transition Participant”** - means the Employees on June 30, 2003 that were in an employment classification that potentially made them eligible for the Plan and that -

(a) were at least age 55 on June 30, 2003; or

(b) the sum of whose Age and Continuous Service was 80.

Transition Participants shall remain subject to the terms of the Plan in effect before July 1, 2003 addressing the calculation and amount of benefits. These Employees shall, however, be subject to the other changes that became effective thereafter and that apply to them as provided in the Plan as amended from time to time, such as those addressing the vesting of benefits and the change to the Effective Retirement Date.

ARTICLE III. PARTICIPATION IN PLAN.

Eligibility for benefits shall be determined as follows:

3.01 **Participation after January 1, 2011**

Any Employee who was a Participant in the Plan as of December 31, 2010 shall continue to participate in the Plan. Effective as of January 1, 2011, any Employee who participated in the Pension Plan but was not eligible for the Retirement

Growth Account under Section 3.3 of said plan and is classified as a Level I, II, III, IV or V Employee shall participate in the Plan. After earning five years of Continuous Service, whenever earned, a Participant shall be completely vested in the applicable benefit under Plan. The determination of whether a Level III, IV or V Employee receives a reduced benefit for commencement before age 62 under Section 5.02(c) is made based on the Employee's deemed status on the Effective Retirement Date. Notwithstanding such vesting, a Participant forfeits the right to receive any benefit under this Plan if the Participant incurs a Termination of Employment for Cause, as defined in Section 3.02. A Participant may also forfeit the right to the Plan benefit and may have to repay a prior distribution pursuant to the provisions of Section 4.02. Participation in the Plan is not subject to an election by an Employee. Participation is automatic and is based on the Employee's status on Ashland's records at the applicable time.

3.02 **Termination for Cause**

Ashland reserves the right to terminate any Participant for "Cause" prior to his or her Effective Retirement Date, with a resulting forfeiture of the payment of benefits under the Plan. Ashland also reserves the right to terminate any Participant's participation in the Plan for "Cause" subsequent to his or her Effective Retirement Date. For purposes of this Section 3.02, "Cause" shall mean the willful and continuous failure of a Participant to substantially perform his or her duties to Ashland (other than any such failure resulting from incapacity due to physical or mental illness), or the willful engaging by a Participant in gross misconduct materially and demonstrably injurious to Ashland, each to be determined by Ashland in its sole discretion.

3.03 **Automatic Vesting for Change in Control**

Subject to the provisions of Article VI, in the event of a Change in Control (as defined in Section 2.05), an Employee who is deemed to be a Level I, II, III, IV or V Participant shall automatically be completely vested in his or her benefits, regardless of the number of years of Continuous Service.

ARTICLE IV. INTERACTION WITH CHANGE IN CONTROL AGREEMENTS.

4.01 **Terminations - General**

Notwithstanding any provision of this Plan to the contrary, an Employee who has entered into an Change in Control Agreement with Ashland and who is terminated without "Cause" or resigns for "Good Reason" following a "change in control of Ashland" (each quoted term as defined in the applicable Change in Control Agreement) shall be entitled to receive the benefits as provided pursuant to this Plan. Benefits payable hereunder in such a situation shall be calculated in accordance with the payment option elected by the Employee.

4.02 **Subsequent Activity in Conflict with Ashland**

The provisions of this Section 4.02 shall apply to Level I, II, III, IV and V Participants, regardless of whether such a Participant has a Change in Control Agreement; except that the provisions of this Section 4.02 shall not apply to any Participant after a Change in Control. If a Participant accepts, during a period of five (5) years subsequent to his or her Effective Retirement Date, or Termination of Employment, if earlier, any consulting or employment activity which is in direct and substantial conflict with the business of Ashland at such time (such determination regarding conflicting activity to be made in the sole discretion of the Board), he or she shall be considered in breach of the provisions of this Section 4.02; provided, however, he or she shall not be restricted in any manner with respect to any other non-conflicting activity in which he or she is engaged.

If a Participant wishes to accept employment or consulting activity which may be prohibited under this Section 4.02, such Participant may submit to Ashland written notice (Attention: Vice President Human Resources and Communications or any successor position thereto) of his or her wish to accept such employment or consulting activity. If within ten (10) business days following receipt of such notice Ashland does not notify the Participant in writing of Ashland's objection to his or her accepting such employment or consulting activity, then such Participant shall be free to accept such employment or consulting activity for the period of time and upon the basis set forth in his or her written request.

In the event the provisions of this Section 4.02 are breached by a Participant, the Participant shall not be entitled to any additional payments hereunder (whether directly from this Plan or from a SERP Account for such Participant from the Ashland Inc. Deferred Compensation Plan for Employees (2005)) and shall be liable to repay to Ashland all amounts such Participant received prior to such breach. If a Participant who breaches the provisions of this Section 4.02 received a lump sum distribution of his or her benefit prior to such breach, such Participant shall be liable to repay to Ashland the amount of such distribution. If a Participant who breaches the provisions of this Section 4.02 deferred all or any part of a lump sum distribution hereunder to the Ashland Inc. Deferred Compensation Plan for Employees (2005), the amount so deferred shall be forfeited, and if any amount of the amount so deferred was distributed from the Ashland Inc. Deferred Compensation Plan for Employees (2005) before the breach occurred, the amount so distributed shall be repaid to Ashland. Any repayment of benefits hereunder shall be assessed interest at the rate applicable for the calculation of a lump sum payment under Section 5.04(b) for the month in which the breach occurs, with such interest compounded monthly from the month in which the breach occurs to the month in which such repayment is made to Ashland. Ashland shall have available to it all other remedies at law and equity to remedy a breach of this Section 4.02.

ARTICLE V. RETIREMENT INCOME AND OTHER BENEFITS.

5.01 **LEVELS I AND II** .

(a) Transition Participants . The Transition Participants who are Level I or II Participants are eligible to receive Annual Retirement Income equal to:

(1) **Pre-Age 62 Benefit**

A Transition Participant who retires under this Plan, including a Transition Participant to whom the provisions of paragraph (b) of this Section 5.01 apply, shall receive an Annual Retirement Income lump sum benefit for the period from and after the first day of the calendar month next following his or her Effective Retirement Date until the end of the month in which he or she attains age 62 equal to the greater of (1) the amounts provided in the following schedule or (2) 50% of Final Average Compensation. Notwithstanding the previous sentence, in the event such Transition Participant retired with less than 20 years of Service, such Annual Retirement Income lump sum benefit amount shall be multiplied by a fraction (A) the numerator of which is such Transition Participant's years of and fractional years of Service, and (B) the denominator of which is twenty (20).

Retirement	**% of Compensation**
1st - Year After Effective Retirement Date	75%
	70%
2nd - "	65%
3rd - "	60%
4th - "	55%
5th - "	50%
6th - Year and thereafter to Age 62	

For purposes of this Section 5.01(a), "% of Compensation" shall mean the annualized average of the Transition Participant's base monthly compensation rates (excluding incentive awards, bonuses, and any other form of extraordinary compensation) in effect with respect to Ashland on the first day of the thirty-six (36) consecutive calendar months which will give the highest average out of the one-hundred twenty (120) consecutive calendar month period ending on the Transition Participant's Effective Retirement Date.

(2) **Age 62 Benefit and Thereafter**

From and after the first day of the calendar month next following his or her Effective Retirement Date, or the attainment of age 62, whichever is later, the Transition Participant's Annual Retirement Income lump sum benefit amount shall be equal to 50% of Final Average Compensation; provided, however, that in the event such Transition Participant retired with less than 20 years of Service, such Annual Retirement Income shall be 50% of Final Average Compensation multiplied by a fraction (A) the numerator of which is such Transition Participant's years of and fractional years of Service, and (B) the denominator of which is twenty (20).

(3) **Benefit Reduction**

The amount of benefit provided in paragraphs (1) and (2) of this Section 5.01 shall be reduced by the sum of the following:

(A) the Transition Participant's benefit under the Pension Plan (assuming 50% of such Transition Participant's account under the LESOP were transferred to the Pension Plan, as allowed under the terms of each of the said plans and disregarding any benefit assignment under an approved qualified domestic relations order affecting either the Pension Plan or the LESOP), determined on the basis of a single life annuity form of benefit;

(B) the Transition Participant's benefit under any other defined benefit pension plan qualified under Section 401(a) of the Internal Revenue Code of 1986, as amended which is maintained by Ashland, determined by disregarding any benefit assignment under an approved qualified domestic relations order and on the basis of a single life annuity form of benefit (said plans referred to in sub-paragraphs (1) and (2) of this paragraph (c) are hereinafter referred to jointly and severally as the "Affected Plans");

(C) the Transition Participant's benefit under the Ashland Inc. Nonqualified Excess Benefit Pension Plan, determined on the basis of a single life annuity form of benefit; and

(D) the Transition Participant's benefit under the Ashland Inc. ERISA Forfeiture Plan attributable to amounts which were forfeited under the LESOP, multiplied by 50%, and determined on the basis of a single life annuity benefit.

Because a Transition Participant's benefit hereunder is payable as a lump sum, the reduction to such benefit shall be calculated based upon the lump sum actuarial present value of the benefits referred to in subparagraphs (A)-(D) of this paragraph (3). Such calculation shall be conducted on the basis that the benefits referred to in said subparagraphs (A)-(D) commence at the same time as of which the benefit in this Plan is paid as a lump sum, using the Transition Participant's attained age at the time of such commencement, unless otherwise required in paragraph (d) of this Section 5.01.

(b) **Benefit After a Change in Control**

(1) Participants Having Change in Control Agreements . A Participant having a Change in Control Agreement who either is terminated without "Cause" or resigns for "Good Reason" after a Change in Control shall have the benefit payable under this Section 5.01 computed by adding 3 years to the Participant's Age and Service at the Participant's Effective Retirement Date. These additions to Age and Service shall, except as otherwise provided, apply for purposes of computing the single life

annuity payment to the Participant that is converted to Annual Retirement Income lump sum benefit amount, if applicable. A Participant subject to this paragraph (b)(1) whose Effective Retirement Date occurs before attaining an actual age of 55 shall have the 3 year addition to Age apply when converting the single life annuity amount (if applicable) to the Annual Retirement Income lump sum benefit amount. If the Effective Retirement Date of a Participant subject to this paragraph (b)(1) occurs on or after the Participant attains an actual age of 55, then the Participant's actual age shall be used when making such a conversion. Notwithstanding anything to the contrary contained herein, when converting a Participant's single life annuity (if applicable) to the lump sum payment, the Participant's actual age shall be used without reference to the additional 3 years. If the addition of 3 years to the Participant's age results in an Age less than 55 and the Participant commences the benefit, the amount of the benefit shall be adjusted to account for the fact it is paid before the Participant's attainment of Age 55. This adjustment shall be based upon the early retirement table in Section 6.2 of the Ashland Inc. and Affiliates Pension Plan as it existed on September 30, 1999. When applying this table under these circumstances, age 55 shall be substituted for age 62 and adjustments for ages younger than those on the table shall be reasonably determined by an actuary or actuarial firm who regularly performs services in connection with the Plan.

(2) Participants Without Change in Control Agreements . A Participant without a Change in Control Agreement who is terminated without "Cause" after a Change in Control shall have the benefit payable under this Section 5.01 computed by adding the applicable amount to the Participant's Age and Service at the Participant's Effective Retirement Date. For these purposes, the applicable amount is derived from the following table.

Length of Participant's Service at Separation from Employment	**Number of Years (the Applicable Amount)**
Up to 5 years	3 months
More than 5 and up to 10 years	6 months
More than 10 and up to 15 years	1 year
More than 15 and up to 20 years	1 year and 6 months
More than 20 years	2 years

These additions to Age and Service shall, except as otherwise provided, apply for purposes of computing the single life annuity payment (if applicable) to the Participant that would be converted to the Annual Retirement Income lump sum benefit amount. A Participant subject to this paragraph (b)(2) whose Effective Retirement Date occurs before attaining an actual age of 55 shall have the applicable amount added to such Participant's Age apply when converting the single life annuity amount (if applicable) to the Annual Retirement Income lump sum benefit amount. If the Effective Retirement Date of a Participant subject to this paragraph (b)(2) occurs on or after the Participant attains an actual age of 55, then the Participant's actual age shall be used when making such a conversion. Notwithstanding anything to the contrary contained herein, when converting a Participant's single life annuity (if applicable) to a lump sum payment option, the Participant's actual age shall be used without reference to the addition of the applicable amount. If the addition of the applicable amount to the Participant's age results in an Age less than 55 and the Participant commences the benefit, the amount of the benefit shall be adjusted to account for the fact it is paid before the Participant's attainment of Age 55. This adjustment shall be based upon the early retirement table in Section 6.2 of the Ashland Inc. and Affiliates Pension Plan as it existed on September 30, 1999. When applying this table under these circumstances, age 55 shall be substituted for age 62 and adjustments for ages younger than those on the table shall be reasonably determined by an actuary or actuarial firm who regularly performs services in connection with the Plan.

(c)**Benefit after June 30, 2003** **.** Subject to the applicable provisions of paragraph (b) above, the vested benefit payable to a Participant on the Effective Retirement Date for the period such Participant was deemed classified as a Level I or II Participant is equal to 25% of Final Average Compensation multiplied by years of Service not to exceed 20 years of Service. Service includes full and fractional years. There is no reduction for commencement before age 62 and there is no increase for commencement after age 62. The normal form of the benefit so computed is a single lump sum payment. The benefit so payable shall be reduced by the actuarially equivalent (as defined below) lump sum benefit from the following plans from which the Participant is entitled to a distribution:

(1) the Pension Plan (assuming 50% of such Participant's account - if any - under the LESOP were transferred to the Pension Plan, as allowed under the terms of each of the said plans and disregarding any benefit assignment under an approved qualified domestic relations order affecting either the Pension Plan or the LESOP);

(2) the benefit under any other defined benefit pension plan qualified under Section 401(a) of the Internal Revenue Code of 1986, as amended which is maintained by Ashland, determined by disregarding any benefit assignment under an approved qualified domestic relations order (said plans referred to in sub-paragraphs (1) and (2) of this paragraph (c) are hereinafter referred to jointly and severally as the "Affected Plans");

(3) the benefit under the Ashland Inc. Nonqualified Excess Benefit Pension Plan; and

(4) the benefit under the Ashland Inc. ERISA Forfeiture Plan attributable to amounts which were forfeited under the Ashland Inc. Leveraged Employee Stock Ownership Plan, multiplied by 50%.

An interest rate assumption of 8% and the Section 415/417 Mortality Table in the Pension Plan shall be used for purposes of computing the actuarial equivalence of the reductions in the above numbered paragraphs, except for computing the actuarial equivalence of the benefit under the Ashland Inc. Nonqualified Excess Benefit Pension Plan under above paragraph (3). Effective for Effective Retirement Dates on and after October 1, 2007, the computation under said paragraph (3) shall be conducted using the same assumptions as apply to the computation of the benefit payable under the Ashland Inc. Nonqualified Excess Benefit Pension Plan. Actuarial equivalence shall be determined as of the Effective Retirement Date.

(d) **Changes in Status** **.**

(1) Subject to the applicable provisions of paragraph (b) above, a Participant that earned a benefit under this Section 5.01 and that also earned a benefit under Section 5.02 shall receive the greater of the two benefits produced.

(2) If a Participant that earns a benefit hereunder is not considered to be a Level I, II, III, IV or V Participant on the earlier of the Participant's Effective Retirement Date or Termination of Employment, then the Service after such Participant ceased to be considered a Level I,

II, III, IV or V Participant shall be disregarded for purposes of computing the benefit payable under the Plan. In that event, the only Service that shall be counted for purposes of computing the benefit payable under the Plan shall be the Service the Participant earned while considered to be a Level I, II, III, IV or V Participant. Notwithstanding anything in the foregoing to the contrary, such a Participant shall be credited with a minimum of five years of Service, so long as such Participant has at least five years of Continuous Service.

(e) **Specified Employee** . Notwithstanding anything contained in the Plan to the contrary, a Transition Participant or a Participant who is a Specified Employee shall have the distribution of his or her benefit which is made on account of a Termination of Employment commence on a date that is not earlier than six months after his or her Termination of Employment.

5.02 **LEVELS III, IV AND V** .

(a) **General**

The Annual Retirement Income lump sum benefit amount of a Transition Participant (including a Transition Participant to whom the provisions of paragraph (b) of this Section 5.02 apply) who on his or her Effective Retirement Date was deemed to be a Level III, IV, or V Participant shall, from and after the first day of the calendar month next following his or her 62nd birthday, be equal to 50% of the Transition Participant’s Final Average Bonus; provided, however, that in the event such Transition Participant retired with less than 20 years of Service, such Annual Retirement Income after age 62 shall be 50% of Final Average Bonus multiplied by a fraction (A) the numerator of which is such Participant’s years of and fractional years of Service, and (B) the denominator of which is twenty (20). Although a Transition Participant may elect to commence benefits under this Plan upon his or her Effective Retirement Date, there shall be an actuarial adjustment (consistent with that applied under Ashland’s qualified pension plan, as from time to time in effect) for Participants receiving benefits under this Section 5.02 whose Effective Retirement Date is prior to age 62.

(b) **Benefit After a Change in Control**

A Participant who is terminated other than for “Cause” after a Change in Control shall have the benefit payable under this Section 5.02 computed by adding to the Participant’s Age and Service at the Participant’s Effective Retirement Date the number of years equal to the applicable amount for the Participant derived from the following table.

Length of Participant’s Service at Separation from Employment	Number of Years (the Applicable Amount)
Up to 5 years	3 months
More than 5 and up to 10 years	6 months
More than 10 and up to 15 years	1 year
More than 15 and up to 20years	1 year and 6 months
More than 20 years	2 years

These additions to Age and Service shall, except as otherwise provided, apply for purposes of computing the single life annuity payment (if applicable) to the Participant that would be converted to the Annual Retirement Income lump sum benefit amount. A Participant subject to this paragraph (b) whose Effective Retirement Date occurs before attaining an actual age of 62 shall have the applicable amount from the table hereinabove added to his or her Age apply when converting the single life annuity amount (if applicable) to the Annual Retirement Income lump sum benefit amount. If the Effective Retirement Date of a Participant subject to this paragraph (b) occurs on or after the Participant attains an actual age of 62, then the Participant's actual age shall be used when making such a conversion. Notwithstanding anything to the contrary contained herein, when converting a Participant's single life annuity (if applicable) to the lump sum payment, the Participant's actual age shall be used without reference to the applicable amount derived from the table hereinabove. If the addition of the applicable amount from the table hereinabove to the Participant's age results in an Age less than 62 and the Participant commences the benefit, the amount of the benefit shall be adjusted to account for the fact it is paid before the Participant's attainment of Age 62. This adjustment shall be based upon the early retirement table in Section 6.2 of the Ashland Inc. and Affiliates Pension Plan as it existed on September 30, 1999, and adjustments for ages younger than those on the table shall be reasonably determined by an actuary or actuarial firm who regularly performs services in connection with the Plan.

(c) **Benefit after June 30, 2003 .** Subject to the applicable provisions of paragraph (b) above, the vested benefit payable to a Participant on the Effective Retirement Date for the period such Participant was deemed classified as a Level III, IV or V Participant is equal to 25% of Final Average Bonus multiplied by years of Service not to exceed 20 years of Service. Service includes full and fractional years. There is no reduction for commencement before age 62 for Participants deemed classified as a Level III Participant at the Effective Retirement Date. There is no increase for commencement after age 62 for any Participant. There is an actuarial reduction to the benefit of a Participant that is deemed classified as a Level IV or V Participant at the Effective Retirement Date. The actuarial reduction shall be made on the same basis as in the Pension Plan for the early commencement of a benefit in Articles 5, 6, and 7, as applicable. The appropriate actuarial reduction shall be determined as of the Effective Retirement Date. The normal form of the benefit so computed under this paragraph (c) is a single lump sum payment.

(d) **Changes in Status .**

(1) Subject to the applicable provisions of paragraph (b) above, a Participant that earned a benefit under Section 5.02 and that also earned a benefit under Section 5.01 shall receive the greater of the two benefits produced.

(2) If a Participant that earns a benefit hereunder is not considered to be a Level I, II, III, IV or V Participant on the earlier of the Participant's Effective Retirement Date or Termination of Employment, then the Service after such Participant ceased to be considered a Level I, II, III, IV or V Participant shall be disregarded for purposes of computing the benefit payable under the Plan. In that event, the only Service that shall be counted for purposes of computing the benefit payable under the Plan shall be the Service the Participant earned while considered to be a Level I, II, III, IV or V Participant. Notwithstanding anything in the foregoing to the contrary, such a Participant shall be credited with a minimum of five years of Service, so long as such Participant has at least five years of Continuous Service.

5.03 **Benefits Payable for Less Than 12 Months**

Annual Retirement Income benefits that would be payable under Sections 5.01 and 5.02 for a period of less than 12 months if such benefits were payable as an annuity due to a Participant's attainment of age 62 or death will be computed as if payable on a pro-rata basis, with months taken as a fraction of a year.

5.04 **Payment Options**

(a) **Election**

Subject to applicable transition rules under guidance issued by the Treasury under section 409A of the Code, Participants will have 30 days following the earlier of January 1, 2005 or the date they are first eligible for the Plan to elect a form of distribution from among those available under Section 5.04(b). Any subsequent change to that election shall be subject to the provisions of this paragraph (a), sub-parts (1), (2) and (3), as applicable. In all other events, a Participant' election is irrevocable. Notwithstanding anything in the foregoing to the contrary, any Participant who elects to change his or her election must meet the following requirements, as applicable -

(1) The election may not take effect until at least 12 months after it is made;

(2) If the distribution relates to a Termination of Employment, the first payment that would be made pursuant to the election would be at least five years after the amount otherwise would have been distributed but for this election, except in the event of the Participant's death; and

(3) The election must be made at least 12 months before the first scheduled payment that would have been payable at a specified time or pursuant to a fixed schedule.

A Participant may not accelerate the time or schedule of any payment under the Plan, except as provided in guidance from the Treasury under Internal Revenue Code section 409A.

(b) **Optional Forms of Payment**

(1) **Lump Sum Option** All benefits provided by the Plan shall be payable in a single lump sum payment, computed under the applicable provisions of Article V. A Participant's benefit is payable as a lump sum on the Effective Retirement Date (or as soon thereafter as reasonably possible), in a manner pursuant to a Participant's election under Section 5.04(a) under an option identified in one of the following sub-paragraphs of this Section 5.04(b). A lump sum benefit payable under the Plan to a Transition Participant shall be computed on the basis of the actuarially equivalent present value of such Transition Participant's benefit under Article V based upon such actuarial assumptions as determined by the Committee.

(2) **Default Lump Sum Deferral Option** If the Participant fails to make an election under Section 5.04(a) then the Participant's benefit shall be transferred upon the Participant's Effective Retirement Date (or as soon thereafter as possible) to the Ashland Inc. Deferred Compensation for Employees (2005), or its successor, and held pursuant to the terms of such plan and shall thereafter be distributed in three annual payments beginning with the January 1 after the account is established in the Ashland Inc. Deferred Compensation for Employees (2005) (33 1/3% in the first year, 50% of the remaining amount in the second year and the remaining amount in

the third year). Notwithstanding the foregoing, if a Participant fails to make an election under this Plan, but does make an effective election for the distribution of a benefit under the Ashland Inc. Nonqualified Excess Benefit Pension Plan, then the distribution of the benefit hereunder shall be made in the same manner as the Participant had elected under the said plan. In all events, a Participant who is a Specified Employee shall have the transfer or other distribution of his or her benefit which is made on account of a Termination of Employment commence on a date that is not earlier than six months after his or her Termination of Employment.

(3) **Lump Sum Payment Option** A Participant may elect to have his or her benefit paid as a single lump sum upon reaching his or her Effective Retirement Date. The benefit pursuant to such an election shall be paid as soon thereafter as possible. In all events, a Participant who is a Specified Employee shall have the distribution of his or her benefit which is made on account of a Termination of Employment commence on a date that is not earlier than six months after his or her Termination of Employment.

(4) **Elective Lump Sum Deferral Option** A Participant may elect to have his or her benefit transferred to the Ashland Inc. Deferred Compensation Plan for Employees (2005), or any successor thereto, as a single lump sum upon reaching his or her Effective Retirement Date, and held pursuant to the terms of such plan and thereafter distributed as provided thereunder. The benefit pursuant to such an election shall be transferred as soon as possible after the Effective Retirement Date. In all events, a Participant who is a Specified Employee shall have the transfer of his or her benefit which is made on account of a Termination of Employment commence on a date that is not earlier than six months after his or her Termination of Employment.

(5) **Time of Distribution or Transfer** Subject to the required delay of a distribution or transfer of a Plan benefit for a Participant who is a Specified Employee, the distribution or transfer of a benefit in the foregoing sub-paragraphs of this Section 5.04(b) shall be paid by the later of (i) the end of the calendar year in which occurs the Participant's Effective Retirement Date or (ii) the 15 th day of the third calendar month following the Participant's Effective Retirement Date.

5.05. **Distribution Exceptions**

Notwithstanding anything in the Plan to the contrary, the following shall apply to the distribution of benefits under the Plan:

(1) Distribution shall be made pursuant to a domestic relations order as described in Section 7.04;

(2) Distribution of a benefit shall be made in a single lump sum payment as soon as possible after a Participants Termination of Employment if the distribution, when added to the amount that would be payable from the Ashland Inc. Nonqualified Excess Benefit Pension Plan will not exceed the adjusted Code section 402(g) limit; and

(3) Distribution may be made in the discretion of Ashland for any other permitted purpose under Treas. Reg. section 1.409A-3(j)(4)(ii)-(xiv).

5.06. **Survivor Benefits**

For deaths occurring after the approval of this restatement, if a Participant with a vested benefit dies before his or her Effective Retirement Date, the benefit that would have been paid to the Participant had the Participant survived to his or her Effective Retirement Date shall be paid to the beneficiary designated by the Participant as elected by the Participant from those options made available by Ashland; provided, however, that the benefit must be completely distributed by the end of the fifth calendar year following the calendar year in which the Participant died. In the absence of an election, the benefit shall be paid in January of the calendar year following the calendar year in which the Participant died. If the Participant dies before he or she attained age 55 and before the sum of his or her age and years of Continuous Service equaled 80, the benefit payable hereunder shall be actuarially adjusted using the assumptions under the Pension Plan that applied at the time of the Participant's death.

5.07 **Participation in Other Benefits**

After the Effective Retirement Date, a Participant may continue to participate in the benefits offered by Ashland to former Employee's and retiree's similarly situated to the Participant. Ashland reserves all rights to change those benefits at any time, including the right to terminate them. Except as otherwise expressly provided in this Plan, a Participant's active participation in all employee benefit programs maintained by Ashland derived from his or her employment status with Ashland shall be discontinued.

ARTICLE V-A. **LIMITED TEMPORARY ENHANCED RETIREMENT PROGRAM BENEFIT**.

5.01A **GENERAL.**

For Participants whose Effective Retirement Date is March 1, 2007 (except as may otherwise be provided in Section 5.04A below), the retirement benefits payable under Article V shall be computed as modified under Section 5.03A below, provided that such Participants satisfy all of the requirements specified in Section 5.02A. For purposes of this Article V-A, the limited enhanced retirement program benefit described herein is referred to as the Voluntary Severance Offer (VSO).

5.02A **ELIGIBILITY**.

Subject to Section 3.01, the Employees who are eligible to have their benefits computed with the modifications described in Section 5.03A are those who would have been eligible for the pension benefit described in section 18.7B of the Pension Plan, but who are not so eligible because they are in pay classification band 21 or higher.

5.03A **ENHANCED BENEFIT.**

Each Participant described in Section 5.02A(a) who elects an Effective Retirement Date of March 1, 2007 (or at the Delayed Effective Retirement Date under Section 5.04A), hereinafter called "Electing Participant", shall have his or her benefit computed under Section 5.01 or Section 5.02 (whichever is applicable) by adding 2 years to his or her Age and 2 years to his or her Service at the Effective Retirement Date (or at the Delayed Effective Retirement Date under Section 5.04A). These additions to Age and Service shall apply for purposes of computing the single life annuity amount with regard to the Electing Participant; for purposes of any actuarial reduction for early commencement; and for purposes of applying the Section 2.08 definition of Effective Retirement Date to this Article V-A. Notwithstanding anything to the contrary contained herein, when converting an Electing Participant's benefit to the lump sum payment option, the Electing Participant's actual age shall be used without reference to the additional 2 years.

5.04A **DELAYED EFFECTIVE RETIREMENT DATE .**

Ashland reserves the right to require an Electing Participant or a Special Participant (as defined in Section 5.05A) to remain employed and delay his or her Effective Retirement Date (or other termination date) until, at the latest, to November 30, 2007 (hereinafter referred to as the "Delayed Effective Retirement Date").

(a) If an Electing Participant's or Special Participant's employment is terminated on or before his or her Delayed Effective Retirement Date by reason of discharge for cause, such Electing Participant or Special Participant shall not be entitled to any benefit computed under this Plan.

(b) If an Electing Participant or Special Participant terminates employment by reason of death on or before his or her Delayed Effective Retirement Date, but after February 28, 2007, the benefit shall be determined as if he or she had the Delayed Effective Retirement Date on the day before death with any election of an optional form of benefit made by such Electing Participant or Special Participant given effect.

(c) An Electing Participant or Special Participant who terminates employment on his or her Delayed Effective Retirement Date (except by reason of discharge for cause or death), shall have the benefit determined as provided under Section 5.03A by applying the rules contained therein to such Electing Participant or Special Participant at such Electing Participant's or Special Participant's Delayed Effective Retirement Date; provided, however, that such Electing Participant's or Special Participant's benefit, as so determined and payable effective as of the first of the calendar month immediately following the Delayed Effective Retirement Date, shall not be less than the amount of the benefit that would have been payable to such Electing Participant or Special Participant as of March 1, 2007.

5.05A **LIMITED TEMPORARY ENHANCED UNFUNDED PENSION BENEFIT**

(a) Persons described in paragraph (b) of this Section 5.05A who constitute a select group of management or highly paid employees shall be entitled to the applicable benefit described in paragraph (c) of this Section 5.05A. Such benefit shall constitute an unfunded promise to be paid from the general assets of Ashland Inc., and the payment of such benefit shall have no priority with respect to the claims of unsecured general creditors of Ashland Inc.

(b) The benefit described in paragraph (c) of this Section 5.05A shall be paid with respect to those persons who would be entitled to the enhanced benefit payment under section 18.7B of the Pension Plan but for the exception contained in section 18.7B (b)(2)(i) of such Pension Plan (relating to highly compensated employees and employees in pay code band 21 and above). For purposes of the benefit described in paragraph (c) of this Section 5.05A, these persons shall be referred to as Special Participants. Such designation includes individuals who are otherwise Participants in this Plan and individuals who would not otherwise have a benefit paid through this Plan.

(c) The determination of the benefit payable under this paragraph (c) is different for Special Participants who, without the addition to age and service described in section 18.7B of the said Pension Plan and as of February 28, 2007, either (i) are age 55 or older; or (ii) have age and Continuous Service under the said Pension Plan equaling at least 80 (referred to as retirement eligible Special Participants) and Special

Participants who require the addition to age and service described in section 18.7B of the said Pension Plan to fall within either clause (i) or (ii) as of February 28, 2007 (referred to as not retirement eligible Special Participants).

(1) Retirement Eligible Special Participants . For a retirement eligible Special Participant, the benefit payable under this paragraph (c) is calculated as the difference between two amounts calculated under the said Pension Plan. This calculation is made as of the later of February 28, 2007 or the Delayed Termination Date (as defined in said Pension Plan). This date is referred to as the Calculation Date. The difference is between (i) the amount payable under the said Pension Plan on the Calculation Date adding the additional age and service pursuant to section 18.7B of said Pension Plan as though the retirement eligible Special Participant were eligible to receive the additional benefit described in said section 18.7B; and (ii) the amount payable under the said Pension Plan on the Calculation Date based on the retirement eligible Special Participant's actual age and service. This difference (which cannot be a negative number) is converted to an actuarially equivalent lump sum using the actuarial assumptions in the said Pension Plan, as determined by Ashland Inc., based on the actual age of the retirement eligible Special Participant.

(2) Not Retirement Eligible Special Participants . By definition, a not retirement eligible Special Participant cannot begin payments under the said Pension Plan because the not retirement eligible Special Participant is not eligible to commence benefits thereunder based on his or her actual age and service on the first of the month after the relevant Calculation Date. To facilitate the commencement of a benefit equivalent to what could have been paid under the said Pension Plan had the not retirement eligible Special Participant actually been retirement eligible, such Special Participant will be offered an election to commence an equivalent benefit through this Plan, determined based on rules that would have applied under the said Pension Plan. For this purpose, the not retirement eligible Special Participant's actual age and service will be used. Any such payments will only last through the end of the calendar month during which such Special Participant attains age 55. Such Special Participant will then be able to make a separate election under the rules of the said Pension Plan for the benefit to commence payment from the said Pension Plan. The not retirement eligible Special Participant is also entitled to a lump sum payment computed as the difference between (i) the amount payable under the said Pension Plan on the Calculation Date adding the additional age and service pursuant to section 18.7B of said Pension Plan as though the not retirement eligible Special Participant were eligible to receive the additional benefit described in said section 18.7B; and (ii) the amount payable under this Plan (as determined hereinabove) on the Calculation Date based on the not retirement eligible Special Participant's actual age and service. This difference (which cannot be a negative number) is converted to an actuarially equivalent lump sum using the actuarial assumptions in the said Pension Plan, as determined by Ashland Inc., but assuming that the not retirement eligible Special Participant had age and Continuous Service under the said Pension Plan that equaled 80 as of the Calculation Date and using such Special Participant's actual age.

(3) Payment of Lump Sum . The lump sum amounts described in the preceding sub-paragraphs (1) and (2) are paid as soon as administratively feasible in January 2008, with certain exceptions that are described below. Before the lump sum is paid, it will earn interest at the same rate and under the same terms that apply to the Retirement Growth Account benefit under the said Pension Plan. The lump sum of a Special Participant who is also a Participant in this Plan shall be paid pursuant to the valid election such Participant has made for the rest of his or her benefit that is payable hereunder. Additionally, payments shall comply with the provisions of Internal Revenue Code section 409A. For purposes of computing any benefit under this Plan or the Ashland

Inc. Nonqualified Excess Benefit Pension Plan that is coordinated with the said Pension Plan benefit, the lump sum payable under this paragraph (c) shall be considered to be part of the benefit payable under the said Pension Plan. If a Special Participant dies before January 1, 2008, the death benefit that may be payable with respect to the benefit described in this Section 5.05A shall be based upon the Appendix A that is attached hereto and made a part of hereof, as interpreted and applied by Ashland Inc.

(d) Elections by Special Participants for the benefit described in paragraph (c) of this Section 5.05A shall be made in such form and at such time as Ashland Inc., or its delegate, shall prescribe and such elections shall be subject to such rules and procedures, including the prior execution of a general release, as may be from time to time prescribed by Ashland Inc.

5.06A **Administration .**

Ashland Inc. has plenary power and authority to interpret, administer and apply all provisions of the Plan relating to or associated with the VSO. The provisions of this Article V-A were effective February 28, 2007.

ARTICLE VI . **CHANGE IN CONTROL** .

Notwithstanding any provision of this Plan to the contrary, in the event of a Change in Control, an Employee who is deemed to be a Level I, II, III, IV or V Participant shall, in accordance with Section 3.03, automatically be deemed approved for participation under this Plan and shall be completely vested in his or her benefit. Consistent with the applicable terms of Sections 5.01 and 5.02, such a Participant may, in his or her sole discretion, elect to retire prior to Age 62. In addition, Ashland (or its successor after the Change in Control) shall reimburse an Employee for legal fees, fees of other experts and expenses incurred by such Employee if he or she is required to, and is successful in, seeking to obtain or enforce any right to payment pursuant to the Plan. In the event that it shall be determined that such Employee is properly entitled to the payment of benefits hereunder, such Employee shall also be entitled to interest thereon payable in an amount equivalent to the prime rate of interest (quoted by Citibank, N.A. as its prime commercial lending rate on the latest date practicable prior to the date of the actual commencement of payments) from the date such payment(s) should have been made to and including the date it is made. Notwithstanding any provision of this Plan to the contrary, the provisions of this Plan or any other plan of Ashland Inc. having a material impact on the benefits payable under this Plan may not be amended after a Change in Control occurs without the written consent of a majority of the Board who were directors prior to the Change in Control.

ARTICLE VII . **MISCELLANEOUS** .

7.01 The obligations of Ashland hereunder constitute merely the promise of Ashland to make the payments provided for in this Plan. No employee, his or her spouse or the estate of either of them shall have, by reason of this Plan, any right, title or interest of any kind in or to any property of Ashland. To the extent any Participant has a right to receive payments from Ashland under this Plan, such right shall be no greater than the right of any unsecured general creditor of Ashland.

7.02 Full power and authority to construe, interpret and administer this Plan shall be vested in the Board or its delegate. This includes, without limitation, the ability to make factual determinations, construe and interpret provisions of the Plan, reconcile any inconsistencies between provisions in the Plan or between provisions of the Plan and any other statement concerning the Plan, whether oral or written, supply any omissions to the Plan or any document associated with the Plan, and to correct any defect in the Plan or in any document associated with the Plan. Decisions of the Board or its delegate shall be final, conclusive and binding upon all parties, provided, however, that no such decision may adversely affect the rights of any Participant who has been approved for participation in the Plan under the terms of Section 3.03 and whose benefit is determined under the terms of Section 5.01(d) or Section 5.02(b).

7.03 This Plan shall be binding upon Ashland and any successors to the business of Ashland and shall inure to the benefit of the Participants and their beneficiaries, if applicable. Except as otherwise provided in Article VI, the Board or its delegate may, at any time, amend this Plan, retroactively or otherwise, but no such amendment may adversely affect the rights of any Participant who has been approved for participation in the Plan except to the extent that such action is required by law.

7.04 Except as otherwise provided in Section 5.04 and in connection with a division of property under a domestic relations proceeding under state law, no right or interest of the Participants under this Plan shall be subject to involuntary alienation, assignment or transfer of any kind. A Participant may voluntarily assign the Participant's rights under the Plan. Ashland, the Board, the Committee and any of their delegates shall not review, confirm, guarantee or otherwise comment on the legal validity of any voluntary assignment. Ashland and its delegates may review, provide recommendations and approve submitted domestic relations orders using procedures similar to those that apply to qualified domestic relations orders under the qualified pension plans sponsored by Ashland. A domestic relations order intended to assign a benefit hereunder to a former spouse of a Participant must be delivered to the Company. The Company will review the order to determine if it is qualified. Upon notification by the Company that the order is qualified, the spouse will be able to elect a distribution of the assigned benefit by the end of the fifth calendar year following the calendar year during which the Company notifies the former spouse that the order is qualified. In all events, the entire assigned benefit must be distributed by the end of the fifth calendar year following the calendar year during which the Company notifies the former spouse that the order is qualified. Notwithstanding anything in the Plan to the contrary, if an assigned benefit is equal to or less than the adjusted Code section 402(g) limit it shall be distributed to the former spouse as soon as administratively possible. The amount of assigned benefits shall be calculated in a manner consistent with the table summary attached hereto and incorporated herein as Appendix B. The Company may prescribe procedures that are consistent with this Section 7.04 and applicable law to implement benefit assignments pursuant to qualified orders.

7.05 This Plan shall be governed for all purposes by the laws of the Commonwealth of Kentucky.

7.06 If any term or provision of this Plan is determined by a court or other appropriate authority to be invalid, void, or unenforceable for any reason, the remainder of the terms and provisions of this Plan shall remain in full force and effect and shall in no way be affected, impaired or invalidated.

7.07 (a) Initial Claim - Notice of Denial . If any claim for benefits (within the meaning of section 503 of ERISA) is denied in whole or in part, Ashland (which shall include Ashland or its delegate throughout this Section 7.07) will provide written notification of the denied claim to the Participant or beneficiary, as applicable, (hereinafter referred to as the claimant) in a reasonable period, but not later than 90 days after the claim is received. The 90-day period can be extended under special circumstances. If special circumstances apply, the claimant will be notified before the end of the 90-day period after the claim was received. The notice will identify the special circumstances. It will also specify the expected date of the decision. When special circumstances apply, the claimant must be notified of the decision not later than 180 days after the claim is received.

The written decision will include:

(i) The reasons for the denial.

(ii) Reference to the Plan provisions on which the denial is based. The reference need not be to page numbers or to section headings or titles. The reference only needs to sufficiently describe the provisions so that the provisions could be identified based on that description.

(iii) A description of additional materials or information needed to process the claim. It will also explain why those materials or information are needed.

(iv) A description of the procedure to appeal the denial, including the time limits applicable to those procedures. It will also state that the claimant may file a civil action under section 502 of ERISA (ERISA - §29 U.S.C. 1132). The claimant must complete the Plan's appeal procedure before filing a civil action in court.

If the claimant does not receive notice of the decision on the claim within the prescribed time periods, the claim is deemed denied. In that event the claimant may proceed with the appeal procedure described below.

(b) Appeal of Denied Claim . The claimant may file a written appeal of a denied claim with Ashland in such manner as determined from time to time. Ashland is the named fiduciary under ERISA for purposes of the appeal of the denied claim. Ashland may delegate its authority to rule on appeals of denied claims and any person or persons or entity to which such authority is delegated may re-delegate that authority. The appeal must be sent at least 60 days after the claimant received the denial of the initial claim. If the appeal is not sent within this time, then the right to appeal the denial is waived.

The claimant may submit materials and other information relating to the claim. Ashland will appropriately consider these materials and other information, even if they were not part of the initial claim submission. The claimant will also be given reasonable and free access to or copies of documents, records and other information relevant to the claim.

Written notification of the decision on the appeal will be delivered to the claimant in a reasonable period, but not later than 60 days after the appeal is received. The 60-day period can be extended under special circumstances. If special circumstances apply, the claimant will be notified before the end of the 60-day period after the appeal was received. The notice will identify the special circumstances. It will also specify the expected date of the decision. When special circumstances apply, the claimant must be notified of the decision not later than 120 days after the appeal is received.

Special rules apply if Ashland designates a committee as the appropriate named fiduciary for purposes of deciding appeals of denied claims. For the special rules to apply, the committee must meet regularly on at least a quarterly basis.

When the special rules for committee meetings apply the decision on the appeal must be made not later than the date of the committee meeting immediately following the receipt of the appeal. If the appeal is received within 30 days of the next following meeting, then the decision must not be made later than the date of the second committee meeting following the receipt of the appeal.

The period for making the decision on the appeal can be extended under special circumstances. If special circumstances apply, the claimant will be notified by the committee or its delegate before the end of the otherwise applicable period within which to make a decision. The notice will identify the special circumstances. It will also specify the expected date of the decision. When special circumstances apply, the claimant must be notified of the decision not later than the date of the third committee meeting after the appeal is received.

In any event, the claimant will be provided written notice of the decision within a reasonable period after the meeting at which the decision is made. The notification will not be later than 5 days after the meeting at which the decision is made.

Whether the decision on the appeal is made by a committee or not, a denial of the appeal will include:

(i) The reasons for the denial.

(ii) Reference to the Plan provisions on which the denial is based. The reference need not be to page numbers or to section headings or titles. The reference only needs to sufficiently describe the provisions so that the provisions could be identified based on that description.

(iii) A statement that the claimant may receive free of charge reasonable access to or copies of documents, records and other information relevant to the claim.

(iv) A description of any voluntary procedure for an additional appeal, if there is such a procedure. It will also state that the claimant may file a civil action under section 502 of ERISA (ERISA - §29 U.S.C. 1132).

If the claimant does not receive notice of the decision on the appeal within the prescribed time periods, the appeal is deemed denied. In that event the claimant may file a civil action in court. The decision regarding a denied claim is final and binding on all those who are affected by the decision. No additional appeals regarding that claim are allowed.

IN WITNESS WHEREOF , this amendment and restatement of the Plan is executed this _________ day of ____________________, 2010.

ATTEST:		**ASHLAND INC.**
______________________	By:	______________________
Secretary		Vice President Human Resources, and Communications

APPENDIX A

See Section 5.05A(c)(3).

Form of Benefit Payment under Pension Plan	Manner of Paying the Enhanced Pension through the SERP
Straight Life Annuity	The sum of the difference between the monthly payments under the elected benefit option using the additional two years age/service and the monthly payments under the elected benefit option not using the additional two years age/service from the Calculation Date through the month of death in 2007 is paid in a lump sum to the employee's estate. That amount will earn the applicable amount of interest until paid. Payment will not occur before 2008.
Life 10-Year Term Certain Annuity	The sum of the difference between the monthly payments under the elected benefit option using the additional two years age/service and the monthly payments under the elected benefit option not using the additional two years age/service from the Calculation Date through the month of death in 2007. The payment will be to the beneficiary as would be determined under the Ashland Pension Plan. That amount will earn the applicable amount of interest until paid. Payment will not occur before 2008.
Survivor Annuity (including qualified joint and survivor annuity)	The lump sum that would have been paid had the employee survived is paid to the designated survivor annuitant in January 2008. That amount will earn the applicable amount of interest until paid.
Survivor Annuity (including qualified joint and survivor annuity) assuming neither survives to January 2008	The sum of the difference between the monthly payments under the elected benefit option using the additional two years age/service and the monthly payments under the elected benefit option not using the additional two years age/service from the Calculation Date through the month of death in 2007. The payment will be to the estate of the last to die between the employee and the designated survivor annuitant. If the deaths were simultaneous or the order of death was otherwise unable to be determined, then the payment would be to the employee's estate. That amount will earn the applicable amount of interest until paid. Payment will not occur before 2008.

APPENDIX B

*Actuarial Assumptions for SERP/Excess Plan for Domestic Relations Orders**

Employee Base Salary Pay Band	Employee Age	Former Spouse's Age	Actuarial Assumptions
≥ 23**	≥ Effective Retirement Date*** if had terminated on date the order is approved	≥ Employee's age at Effective Retirement Date*** if employee had terminated on date the order is approved	No actuarial adjustment
≥ 23**	Employee or former spouse or both < above age on date the order is approved	Employee or former spouse or both < above age on date the order is approved	Use Ashland Pension Plan assumptions that would apply to employee under the Pension Plan
21, 22 (23)**	≥ 62	≥ 62	No actuarial adjustment
21, 22 (23)**	Employee or former spouse or both < above age on date the order is approved	Employee or former spouse or both < above age on date the order is approved	Use Ashland Pension Plan assumptions that would apply to employee under the Pension Plan

*The Excess Plan would rarely be affected because, at least for those employees still under the traditional qualified pension plan formula, it is truly unknown whether a benefit is payable under the Excess Plan until the employee actually terminates employment. Therefore, for an employee covered under the traditional qualified pension plan formula, the Excess Plan could only be subject to an order that is entered after the employee terminated employment. Employees in the RGA formula have a determinable Excess Plan benefit each year because it is known each year whether they have missed contribution credits due to base compensation exceeding the Code §401(a)(17) limit. Any actuarial adjustments to the Excess Plan benefit would use the applicable adjustments from the qualified pension plan.

**Band 23 employees under the old formula are treated the same as bands 21 and 22 employees.

***The Effective Retirement Date is the earliest date the employee could elect to commence SERP payments if the employee had actually terminated from employment.

Exhibit 10.16

AMENDMENT TO THE
ASHLAND INC. SUPPLEMENTAL EARLY RETIREMENT PLAN FOR CERTAIN EMPLOYEES

WHEREAS , Ashland Inc. (the "Company") maintains the Ashland Inc. Supplemental Early Retirement Plan For Certain Employees (the "Plan") for the benefit of employees eligible to participate therein; and

WHEREAS , pursuant to Section 7.03 of the Plan, the Company, as sponsor of the Plan, has retained the authority to amend the Plan so long as the amendment does not adversely affect Participants rights; and

WHEREAS , the Company deems it advisable to change the definition of “Final Average Bonus” to align with the highest paid period and the final pay period applicable to “Final Average Compensation”; and

NOW, THEREFORE, BE IT RESOLVED , that the Plan is amended effective January 1, 2015 as follows:

I. Section 2.11. of the Plan shall be replaced with the following provision:

2.11 A. “Final Average Bonus,” for employees who were Participants prior to January 1, 2011, means the Participant’s average bonus paid under the Incentive Compensation Plan (including amounts that may have been deferred) during the highest thirty-six (36) months out of the final eighty-four-month (84) period. The calculation of the eighty-four month period shall be measured back from the Participant’s Termination of Employment that is nearest to or which is coincident with the Participant’s Effective Retirement Date. If the Participant becomes classified below a Level V Employee before the Termination of Employment identified in the preceding sentence, then the date of such change in classification is substituted for the said Termination Date. For these purposes, the “bonus paid” for a particular month within a particular fiscal year under such plan shall be equal to the amount of such bonus actually paid (regardless of the date paid, but excluding any adjustment for the deferral of such payment) to such Participant on account of such fiscal year divided by the number of months contained in such fiscal year which were used in determining the amount of such bonus actually paid to such Participant. The bonus paid that is used to compute the average described in this Section 2.11 shall only be a bonus that is paid to the Participant when such Participant is considered a Level III, IV or V Participant.

B. “Final Average Bonus,” for employees who became Participants on or after January 1, 2011, means the Participant’s average bonus paid under the Incentive Compensation Plan (including amounts that may have been deferred) during the highest paid month period (whether or not consecutive) as determined by the following chart out of the final month period (whether or not consecutive) as determined by the following chart:

Termination of Employment:	**Highest Paid Month Period:**	**Final Month Period:**
January 2011	36 months	84 months
February 2011	37 months	85 months
March 2011	38 months	86 months
April 2011	39 months	87 months
May 2011	40 months	88 months
June 2011	41 months	89 months
July 2011	42 months	90 months
August 2011	43 months	91 months
September 2011	44 months	92 months
October 2011	45 months	93 months
November 2011	46 months	94 months
December 2011	47 months	95 months

January 2012 to December 2015	48 months	96 months
January 2016	48 months	107 months
February 2016	49 months	108 months
March 2016	50 months	109 months
April 2016	51 months	110 months
May 2016	52 months	112 months
June 2016	53 months	113 months
July 2016	54 months	114 months
August 2016	55 months	115 months
September 2016	56 months	116 months
October 2016	57 months	117 months
November 2016	58 months	118 months
December 2016	59 months	119 months
January 2017 and after	60 months	120 months

The calculation of the final month period shall be measured back from the Participant's Termination of Employment that is nearest to or which is coincident with the Participant's Effective Retirement Date. If the Participant becomes classified below a Level V Employee before the Termination of Employment identified in the preceding sentence, then the date of such change in classification is substituted for the said Termination Date. For these purposes, the "bonus paid" for a particular month within a particular fiscal year under such plan shall be equal to the amount of such bonus actually paid (regardless of the date paid, but excluding any adjustment for the deferral of such payment) to such Participant on account of such fiscal year divided by the number of months contained in such fiscal year which were used in determining the amount of such bonus actually paid to such Participant. The bonus paid that is used to compute the average described in this Section 2.11 shall only be a bonus that is paid to the Participant when such Participant is considered a Level III, IV or V Participant.

II. Section 2.12 of the Plan shall be replaced with the following provision:

2.12 A. "Final Average Compensation," for employees who were Participants prior to January 1, 2011, mean the Participant's total average compensation during the highest thirty-six (36) months out of the final eighty-four-month (84) period. The calculation of the final period shall be measured back from the Participant's Termination of Employment that is nearest to or which is coincident with the Participant's Effective Retirement Date. If the Participant becomes classified below a Level II Employee before the Termination of Employment identified in the preceding sentence, then the date of such change in classification is substituted for the said Termination Date. For these purposes, "total compensation paid" is the sum of the "compensation paid" and the "bonus paid" during a particular month. "Compensation paid" shall be the base rate of compensation for such Participant in effect on the first day of such calendar month. "Bonus paid" shall have the same meaning as set forth in Section 2.11. In the event a payment is due under the Plan after a Change in Control because the Participant was terminated other than for "Cause" or resigned for "Good Reason," the calculation of Final Average Compensation shall include the amount paid under such Participant's Change in Control Agreement. The amount so paid shall be divided by 36 to derive the monthly "total compensation paid" it represents. The total compensation paid that is used compute the average described in this Section 2.12 shall only be total compensation that is paid to the Participant when such Participant is considered a Level I or II Participant.

B. "Final Average Compensation," for employees who became Participants on or after January 1, 2011, means the Participant's average bonus paid under the Incentive Compensation Plan (including amounts that may have been deferred) during the highest paid month period (whether or not consecutive) as determined by the following chart out of the final month period (whether or not consecutive) as determined by the following chart:

Termination of Employment:	Highest Paid Month Period:	Final Month Period:
January 2011	36 months	84 months
February 2011	37 months	85 months
March 2011	38 months	86 months
April 2011	39 months	87 months
May 2011	40 months	88 months
June 2011	41 months	89 months
July 2011	42 months	90 months
August 2011	43 months	91 months
September 2011	44 months	92 months
October 2011	45 months	93 months
November 2011	46 months	94 months
December 2011	47 months	95 months
January 2012 to December 2015	48 months	96 months
January 2016	48 months	107 months
February 2016	49 months	108 months
March 2016	50 months	109 months
April 2016	51 months	110 months
May 2016	52 months	112 months
June 2016	53 months	113 months
July 2016	54 months	114 months
August 2016	55 months	115 months
September 2016	56 months	116 months
October 2016	57 months	117 months
November 2016	58 months	118 months
December 2016	59 months	119 months
January 2017 and after	60 months	120 months

The calculation of the final period shall be measured back from the Participant's Termination of Employment that is nearest to or which is coincident with the Participant's Effective Retirement Date. If the Participant becomes classified below a Level II Employee before the Termination of Employment identified in the preceding sentence, then the date of such change in classification is substituted for the said Termination Date. In the event a payment is due under the Plan after a Change in Control because the Participant was terminated other than for "Cause" or resigned for "Good Reason," the calculation of Final Average Compensation shall include the amount paid under such Participant's Change in Control Agreement. The amount so paid shall be divided by 36 to derive the monthly "total compensation paid" it represents. The total compensation paid that is used compute the average described in this Section 2.12 shall only be total compensation that is paid to the Participant when such Participant is considered a Level I or II Participant.

III. In all other respects, the Plan shall remain unchanged.

(*signature page immediately follows*)

IN WITNESS WHEREOF , the Company has caused this amendment to the Plan to be executed this 16th day of July , 2015.

ATTEST:		ASHLAND INC.	
/s/ Peter J. Ganz		By:	/s/ Susan B. Esler
Secretary		Title:	Chief Human Resources and Communications Officer

EXHIBIT 10.17

**AMENDMENT TO THE AMENDED AND RESTATED
ASHLAND INC. SUPPLEMENTAL EARLY
RETIREMENT PLAN FOR CERTAIN EMPLOYEES**

WHEREAS, Ashland Inc. (“Ashland”), maintains the Amended and Restated Ashland Inc. Supplemental Early Retirement Plan for Certain Employees (the “Plan”) for the benefit of employees eligible to participate therein; and

WHEREAS , Ashland is the sponsor of the Plan; and

WHEREAS , pursuant to Article IV, Section 5, of the Charter of the Personnel and Compensation Committee of the Board of Directors of Ashland Inc., said Personnel and Compensation Committee (the “Committee”) has retained authority to amend or transfer any of the benefit plans of Ashland and its subsidiaries and affiliates that are more than 50% owned by Ashland; and

WHEREAS, the Committee has approved the transfer of the sponsorship of the Plan from Ashland to Valvoline LLC; and

WHEREAS , the Chief Financial Officer of Ashland Inc. has been delegated the authority by the Committee to prepare and execute any and all amendments necessary to give effect to this decision of the Committee.

NOW, THEREFORE, BE IT RESOLVED , the Plan is amended, effective September 1, 2016, as follows:

I. The following sentence is added to Section 1.01 of the Plan:

“In accordance with a corporate reorganization, effective as of September 1, 2016, sponsorship of the Plan was transferred from Ashland Inc. to Valvoline LLC (“Valvoline”).”

II. All references in the Plan to “Ashland” and “Ashland Inc.” after Section 1.01 are hereinafter changed to “Valvoline” and “Valvoline LLC” respectively.

III. In all other respects the Plan shall remain unchanged.

IN WITNESS WHEREOF , the Chief Financial Officer has caused this amendment to the Plan to be executed this __________ day of ________, 2016.

/s/ J. Kevin Willis

By: Chief Financial Officer, Ashland Inc.

Exhibit 12.1

Valvoline Inc.
Computation of Ratio of Earnings to Fixed Charges
(in millions, except ratios)

	For the Years Ended September 30,				
	2017	**2016**	**2015**	**2014**	**2013**
Earnings:					
Net earnings	$ 304	$ 273	$ 196	$ 173	$ 246
Provision for income taxes	186	148	101	91	135
Equity income	(12)	(12)	(12)	(10)	(13)
Distributed income of equity investees	8	16	18	8	8
Fixed charges	45	14	4	2	2
Total Adjusted Earnings	$ 531	$ 439	$ 307	$ 264	$ 378
Fixed Charges:					
Interest expense (gross of interest income)	$ 37	$ 5	$ —	$ —	$ —
Amortization of deferred financing expense	3	4	—	—	—
Interest component of rental expense	5	5	4	2	2
Total	$ 45	$ 14	$ 4	$ 2	$ 2
Ratio of Earnings to Fixed Charges	11.8	31.4	76.8	132.0	189.0

List of Subsidiaries of the Registrant

Subsidiaries of Valvoline Inc. at September 30, 2017, included the companies listed below.

Name	Jurisdiction of Incorporation
Delta Technologies LLC	Delaware
Ellis Enterprises B.V.	Netherlands
Funding Corp. I	Delaware
Integral Defense, LLC	Delaware
Lex Capital LLC	Delaware
Lubricantes Andinos "Lubrian S. A."	Ecuador
Lubrival S. A.	Ecuador
OCH International, Inc.	Oregon
OCHI Advertising Fund LLC	Oregon
OCHI Holdings II LLC	Oregon
OCHI Holdings LLC	Oregon
PT. Valvoline Lubricants and Chemicals Indonesia	Indonesia
Relocation Properties Management LLC	Delaware
Shanghai VC Lubricating Oil Co., Ltd.	China
V C Lubricating Oil Co. Ltd.	Hong Kong
Valvoline (Australia) Pty. Limited	Australia
Valvoline (Deutschland) GmbH	Germany
Valvoline (Shanghai) Chemical Co., Ltd	China
Valvoline (Thailand) Ltd.	Thailand
Valvoline Branded Finance, Inc.	Delaware
Valvoline Canada Corp.	Nova Scotia
Valvoline Canada Holdings B.V.	Netherlands
Valvoline Cummins Argentina S.A.	Argentina
Valvoline Cummins Private Limited	India
Valvoline de Colombia S.A.S.	Colombia
Valvoline Distribution C.V.	Netherlands
Valvoline Do Brasil Lubrificantes Ltda.	Brazil
Valvoline Eurasia LLC	Russian Federation
Valvoline Europe Holdings LLC	Delaware
Valvoline Holdings B.V.	Netherlands
Valvoline Holdings Pte. Ltd.	Singapore
Valvoline Indonesia Holdings LLC	Delaware
Valvoline Instant Oil Change Franchising, Inc.	Delaware
Valvoline International de Mexico, S. de R.L. de C.V.	Mexico
Valvoline International Holdings Inc.	Delaware
Valvoline International Servicios de Mexico, S. de R.L. de C.V.	Mexico
Valvoline International, Inc.	Delaware
Valvoline Investments B.V.	Netherlands
Valvoline Italy S.r.l.	Italy
Valvoline Junior Holdings LLC	Delaware

Valvoline Licensing and Intellectual Property LLC	Delaware
Valvoline LLC	Delaware
Valvoline Lubricants & Solutions India Private Limited	India
Valvoline New Zealand Limited	New Zealand
Valvoline Poland Sp. z o.o.	Poland
Valvoline Pte. Ltd.	Singapore
Valvoline South Africa Proprietary Limited	South Africa
Valvoline Spain, S.L.	Spain
Valvoline UK Limited	United Kingdom
Valvoline US LLC	Delaware
VIOC Funding, Inc.	Delaware

EXHIBIT 23.1

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the following Registration Statements:

(1) Registration Statement (Form S-8 No. 333-218580) pertaining to the Inducement Restricted Stock Award,
(2) Registration Statement (Form S-8 No. 333-217887) pertaining to the Valvoline Inc. 2016 Deferred Compensation Plan for Employees and the Valvoline 401(k) Plan,
(3) Registration Statement (Form S-8 No. 333-215230) pertaining to the 2016 Deferred Compensation Plan for Employees, and
(4) Registration Statement (Form S-8 No. 333-213898) pertaining to the 2016 Valvoline Incentive Plan and the 2016 Deferred Compensation Plan for Non-Employee Directors;

of our reports dated November 17, 2017, with respect to the consolidated financial statements of Valvoline Inc. and Consolidated Subsidiaries and the effectiveness of internal control over financial reporting of Valvoline Inc. and Consolidated Subsidiaries included in this Annual Report (Form 10-K) of Valvoline Inc. for the year ended September 30, 2017.

/s/ Ernst & Young LLP

Cincinnati, Ohio
November 17, 2017

EXHIBIT 24

Annual Report - Form 10-K

RESOLVED, that the Annual Report of Valvoline Inc. (the " Company ") to the Securities and Exchange Commission (the " SEC ") on Form 10-K (the " Form 10-K ") substantially in the form previously circulated to the Board in preparation for this meeting be, and it hereby is, approved with such changes as the Chief Executive Officer, Chief Financial Officer, any Vice President, the Corporate Secretary or the Company's counsel (" Authorized Persons ") shall approve, the execution and filing of the Form 10-K with the SEC to be conclusive evidence of such approval; and

FURTHER RESOLVED, that the Authorized Persons be, and each of them hereby is, authorized to file with the SEC the Form 10-K and any amendments thereto on Form 10-K/A and/or any other applicable form.

POWER -OF -ATTORNEY

KNOW ALL MEN BY THESE PRESENTS, that each of the undersigned Directors and Officers of VALVOLINE INC., a Kentucky corporation, which is about to file an Annual Report on Form 10-K with the Securities and Exchange Commission under the provisions of the Securities Exchange Act of 1934, as amended, hereby constitutes and appoints SAMUEL J. MITCHELL, JR., MARY E. MEIXELSPERGER, JULIE M. O'DANIEL, and ANTHONY J. CIERI, and each of them, his or her true and lawful attorneys-in-fact and agents, with full power to act without the others to sign and file such Annual Report and the exhibits thereto and any and all other documents in connection therewith, and any such amendments thereto, with the Securities and Exchange Commission, and to do and perform any and all acts and things requisite and necessary to be done in connection with the foregoing as fully as he or she might or could do in person, hereby ratifying and confirming all that said attorneys-in-fact and agents, or any of them, may lawfully do or cause to be done by virtue hereof.

Dated: November 17, 2017

/s/ Samuel J. Mitchell, Jr.
Samuel J. Mitchell, Jr.
Chief Executive Officer and Director
(Principal Executive Officer)

/s/ Mary E. Meixelsperger
Mary E. Meixelsperger

Chief Financial Officer
(Principal Financial Officer)

/s/ David J. Scheve
David J. Scheve
Controller
(Principal Accounting Officer)

/s/ Stephen F. Kirk
Stephen F. Kirk

Non-Executive Chairman and Director

/s/ Mary J. Twinem
Mary J. Twinem
Director

/s/ Richard J. Freeland
Richard J. Freeland
Director

/s/ William A. Wulfsohn
William A. Wulfsohn

Director

/s/ Vada O. Manager
Vada O. Manager
Director

/s/ Stephen E. Macadam

Stephen E. Macadam
Director

/s/ Charles M. Sonsteby
Charles M. Sonsteby
Director

EXHIBIT 31.1

CERTIFICATION PURSUANT TO RULE
13a-14(a) and 15d-14(a)
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Samuel J. Mitchell, Jr., certify that:

1. I have reviewed this Annual Report on Form 10-K of Valvoline Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

    a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

    b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

    c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

    d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the Audit Committee of the registrant's Board of Directors (or persons performing the equivalent functions):

    a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

    b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 17, 2017

/s/ Samuel J. Mitchell, Jr.

Samuel J. Mitchell Jr.
Chief Executive Officer and Director
(Principal Executive Officer)

EXHIBIT 31.2

CERTIFICATION PURSUANT TO RULE
13a-14(a) and 15d-14(a)
AS ADOPTED PURSUANT TO
SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Mary E. Meixelsperger, certify that:

1. I have reviewed this Annual Report on Form 10-K of Valvoline Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

   a. Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

   b. Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

   c. Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

   d. Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the Audit Committee of the registrant's Board of Directors (or persons performing the equivalent functions):

   a. All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

   b. Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: November 17, 2017

/s/ Mary E. Meixelsperger

Mary E. Meixelsperger
Chief Financial Officer
(Principal Financial Officer)

EXHIBIT 32

VALVOLINE INC.

CERTIFICATION PURSUANT TO
18 U.S.C. SECTION 1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

In connection with the Annual Report of Valvoline Inc. (the “Company”) on Form 10-K for the period ended September 30, 2017 as filed with the Securities and Exchange Commission on the date hereof (the “Report”), each of the undersigned, Samuel J. Mitchell, Jr., Chief Executive Officer of the Company, and Mary E. Meixelsperger, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

(1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Samuel J. Mitchell, Jr.

Samuel J. Mitchell, Jr.
Chief Executive Officer and Director
November 17, 2017

/s/ Mary E. Meixelsperger

Mary E. Meixelsperger
Chief Financial Officer
November 17, 2017