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

Form 10-K

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

For the fiscal year ended December 31, 2016

Commission file number 1-15399

(Exact Name of Registrant as Specified in its Charter)

Delaware	**36-4277050**
(State or Other Jurisdiction of Incorporation or Organization)	*(I.R.S. Employer Identification No.)*
1955 West Field Court, Lake Forest, Illinois	**60045**
(Address of Prinicpal Executive Offices)	*(Zip Code)*

Registrant's telephone number, including area code: (847) 482-3000

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

Title of Each Class	Name of Each Exchange On Which Registered
Common Stock, $0.01 par value	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 x 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 x

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 x No ☐

Indicate by check mark whether the registrant has submitted electronically and posted on its corporate Web site, if any, every Interactive Data File required to be submitted and posted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit and post such files). Yes x No ☐

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) 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," and "smaller reporting company" in Rule 12b-2 of the Exchange Act. (Check one):

Large accelerated filer	x	Accelerated filer	☐
Non-accelerated filer	☐ (Do not check if a smaller reporting company)	Smaller reporting company	☐

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

At June 30, 2016, the last day of the Registrant's most recently completed second fiscal quarter, the aggregate market value of Registrant's common equity held by non-affiliates was approximately $6,233,906,649 based upon the closing sale price as reported on the New York Stock Exchange. This calculation of market value has been made for the purposes of this report only and should not be considered as an admission or conclusion by the Registrant that any person is in fact an affiliate of the Registrant.

On February 24, 2017, there were 94,206,284 shares of Common Stock outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Specified portions of the Proxy Statement for the Registrant's 2017 Annual Meeting of Stockholders are incorporated by reference to the extent indicated in Part III of this Form 10-K.

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PART I

Item 1. *BUSINESS*

Packaging Corporation of America ("we," "us," "our," "PCA," or the "Company") is the fourth largest producer of containerboard products and the third largest producer of uncoated freesheet in the United States, based on production capacity. We operate five containerboard mills, three paper mills and 94 corrugated products manufacturing plants. We are headquartered in Lake Forest, Illinois and operate primarily in the United States.

We report in three reportable segments: Packaging, Paper and Corporate and Other. For segment financial information see Note 17, Segment Information, of the Notes to Consolidated Financial Statements in "Part II, Item 8, Financial Statements and Supplementary Data" of this Form 10-K.

During 2016, we made two acquisitions in our corrugated products business: Tim-Bar Corporation ("TimBar") and Columbus Container, Inc. ("Columbus Container"). On August 29, 2016, we acquired substantially all of the assets of TimBar, a large independent corrugated products producer with six corrugated products production facilities for a purchase price of $386 million. To finance the acquisition, we borrowed $385 million under a new five-year term loan facility. TimBar provides solutions to customers in the higher-margin retail, industrial packaging and display and fulfillment markets with a focus on multi-color graphics and technical innovation. On November 30, 2016, we acquired substantially all of the assets of Columbus Container for a purchase price of $100 million. Columbus Container is a full-service provider of corrugated packaging products, with a full-line corrugated products plant, warehousing facilities, and other related operations located in Indiana and Illinois. We used available cash on hand to purchase Columbus Container. The operating results of TimBar and Columbus Container are included in our results and reported in the Packaging segment from and after the respective dates of acquisition. These acquisitions will accelerate the growth strategy and increase the containerboard integration level in our Packaging segment.

Production and Shipments

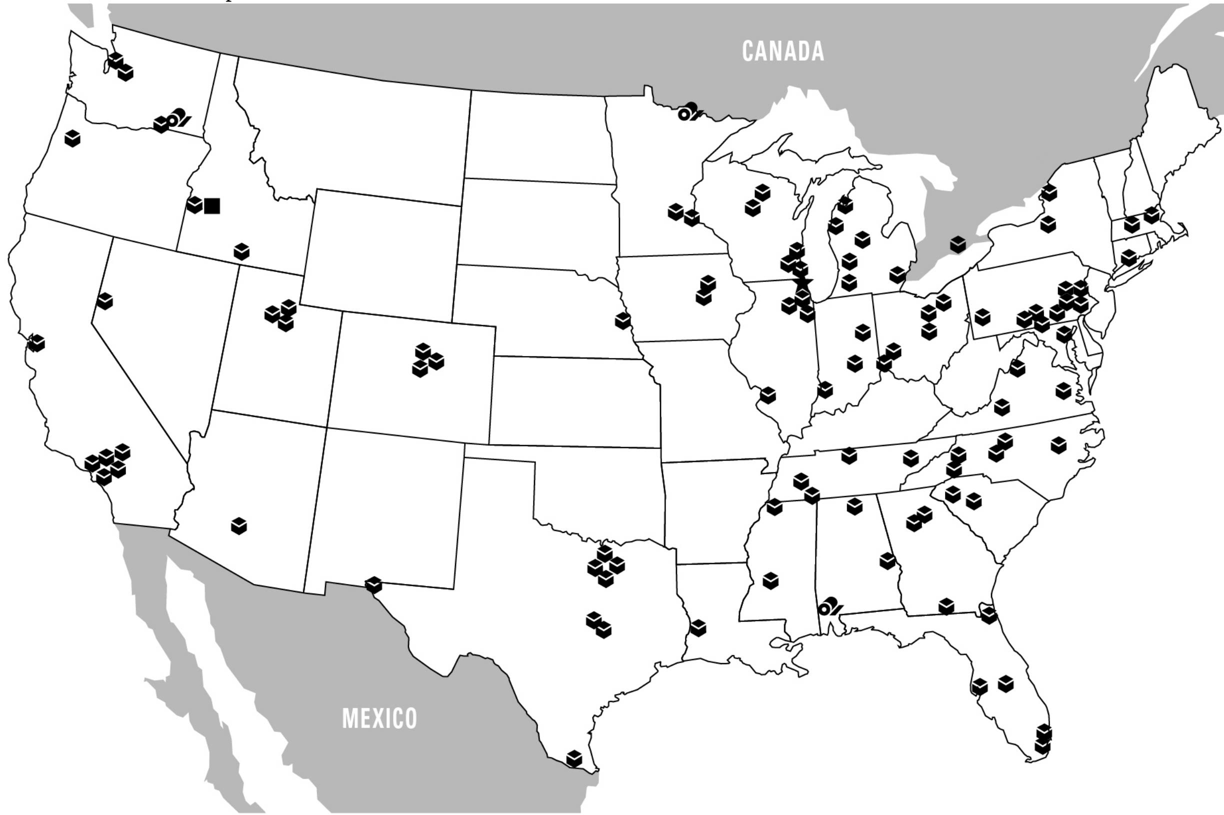
The following table summarizes the Packaging segment's containerboard production and corrugated products shipments and the Paper segment's production.

			First Quarter	Second Quarter	Third Quarter	Fourth Quarter	Full Year
Containerboard Production (a)	PCA	2016	898	926	950	962	3,736
(thousand tons)		2015	882	938	933	903	3,656
		2014	821	846	858	927	3,452
Corrugated Shipments (BSF)	PCA	2016	12.3	12.7	13.1	13.2	51.3
		2015	11.9	12.4	12.5	12.1	48.9
		2014	11.6	12.1	12.4	12.1	48.2
Newsprint Production (a)	PCA	2016	—	—	—	—	—
(thousand tons)		2015	—	—	—	—	—
		2014	56	56	50	—	162
White Paper (UFS) Production	PCA	2016	283	268	288	288	1,127
(thousand tons)		2015	288	273	294	262	1,117
		2014	286	275	296	287	1,144
Market Pulp Production (b)	PCA	2016	16	10	12	7	45
(thousand tons)		2015	27	23	25	23	98
		2014	26	23	26	25	100

(a) PCA ceased production of newsprint and converted the No.3 newsprint machine at our DeRidder, Louisiana mill to containerboard in the third quarter of 2014. Sales of newsprint were recorded in the Packaging segment.

(b) On December 1, 2016, PCA ceased production of softwood market pulp at our Wallula, Washington mill and permanently shut down the No.1 machine.

Below is a map of our locations:



★ Corporate Headquarters
Packaging
Paper
■ Administrative Office

Packaging

Packaging Products

Our containerboard mills produce linerboard and semi-chemical corrugating medium, which are papers primarily used in the production of corrugated products. Our corrugated products manufacturing plants produce a wide variety of corrugated packaging products, including conventional shipping containers used to protect and transport manufactured goods, multi-color boxes and displays with strong visual appeal that help to merchandise the packaged product in retail locations, and honeycomb protective packaging. In addition, we are a large producer of packaging for meat, fresh fruit and vegetables, processed food, beverages, and other industrial and consumer products.

During the year ended December 31, 2016, our Packaging segment produced 3.7 million tons of containerboard at our mills. Our corrugated products manufacturing plants sold 51.3 billion square feet (BSF) of corrugated products. Our net sales to third parties totaled $4.6 billion in 2016.

Facilities

We manufacture our Packaging products at five containerboard mills, one containerboard machine (at our Wallula, Washington white paper mill), corrugated manufacturing operations, and protective packaging operations. The following provides more details of our operations:

Counce. Our Counce, Tennessee mill produces kraft linerboard. The year-end 2016 annual estimated production capacity, as reported to the American Forest and Paper Association (AF&PA), was 1,104,000 tons. In 2016, the mill produced 1,103,000 tons of kraft linerboard on two paper machines. The mill can produce basis weights from 26 lb. to 90 lb. The mill also produces a variety of performance and specialty grades of linerboard.

DeRidder. Our DeRidder, Louisiana mill produces kraft linerboard on its No. 1 machine and linerboard and semi-chemical corrugating medium on its No. 3 machine. The year-end 2016 annual estimated capacity reported to the AF&PA, on the two machines, was 994,000 tons. The No. 1 machine produced 645,000 tons of kraft linerboard during 2016. The No. 3 machine produced 180,000 tons of linerboard and 168,000 tons of medium. The No. 3 machine was converted from a newsprint machine to a containerboard machine in 2014. The mill can produce linerboard in basis weights of 26 lb. to 69 lb. and medium in basis weights of 23 lb. to 33 lb.

Valdosta. Our Valdosta, Georgia mill produces kraft linerboard. Its year-end 2016 annual estimated production capacity, as reported to the AF&PA, was 604,000 tons. In 2016, our single paper machine at Valdosta produced 599,000 tons of kraft linerboard. The mill can produce basis weights from 35 lb. to 96 lb.

Tomahawk. Our Tomahawk, Wisconsin mill produces semi-chemical corrugating medium. Its year-end 2016 annual estimated production capacity, as reported to the AF&PA, was 556,000 tons. In 2016, the mill produced 500,000 tons on two paper machines. The Tomahawk mill can produce basis weights from 23 lb. to 47 lb. and a variety of performance and specialty grades of corrugating medium.

Filer City. Our Filer City, Michigan mill produces semi-chemical corrugating medium. Its year-end 2016 annual estimated production capacity, as reported to the AF&PA, was 445,000 tons. In 2016, the mill produced 408,000 tons on three paper machines. Filer City can produce corrugating medium in basis weights from 20 lb. to 47 lb.

Wallula. Our Wallula, Washington mill primarily produces white paper, but also produces semi-chemical corrugating medium on one of its paper machines. Its year-end 2016 annual estimated production capacity of medium, as reported to the AF&PA, was 147,000 tons. In 2016, the mill produced 133,000 tons of semi-chemical corrugating medium. Wallula can produce corrugating medium in basis weights from 23 lb. to 45 lb.

We operate 94 corrugated manufacturing operations, a technical and development center, eight regional design centers, a rotogravure printing operation, and a complement of packaging supplies and distribution centers. Of the 94 manufacturing facilities, 59 operate as combining operations, commonly called corrugated plants, which manufacture corrugated sheets and finished corrugated packaging products, 34 are sheet plants, which procure combined sheets and manufacture finished corrugated packaging products, and one is a corrugated sheet-only manufacturer.

Corrugated products plants tend to be located in close proximity to customers to minimize freight costs. Each of our plants serve a market radius of around 150 miles. Our sheet plants are generally located in close proximity to our larger corrugated plants, which enables us to offer additional services and converting capabilities such as small volume and quick turnaround items.

Major Raw Materials Used

Fiber supply. Fiber is the largest raw material cost to manufacture containerboard. We consume both wood fiber and recycled fiber in our containerboard mills. We have no 100% recycled mills, or mills whose fiber consumption consists solely of recycled fiber. To reduce our fiber costs, we have invested in processes and equipment to ensure a high degree of fiber flexibility. Our mill system has the capability to shift a portion of its fiber consumption between softwood, hardwood, and recycled sources. All of our mills, other than the Valdosta mill, can utilize some recycled fiber in their containerboard production. Our ability to use various types of virgin and recycled fiber helps mitigate the impact of changes in the prices of various fibers. Our corrugated manufacturing operations generate recycled fiber as a by-product from the manufacturing process, which is consumed by our mills. In 2016, our usage of recycled fiber, net of internal generation, represents 17% of our containerboard production.

We procure wood fiber through leases of cutting rights, long-term supply agreements, and market purchases. We currently lease the cutting rights to approximately 75,000 acres of timberland located near our Counce, Tennessee and Valdosta, Georgia mills. Virtually all of the acres under cutting rights agreements are located within 100 miles of these two mills which results in lower wood transportation costs and provides a secure source of wood fiber. These leased cutting rights agreements have terms with about 14 years remaining, on average.

We participate in the Sustainable Forestry Initiative® (SFI) and we are certified under the SFI sourcing standards. These standards are aimed at ensuring the long-term health and conservation of forestry resources. We are committed to sourcing wood fiber through environmentally, socially, and economically sustainable practices and promoting resource and conservation stewardship ethics.

Energy supply. Energy at our packaging mills is obtained through purchased or self-generated fuels and electricity. Fuel sources include natural gas, by-products of the containerboard manufacturing and pulping process (including black liquor and wood waste), purchased wood waste, and other purchased fuels. Each of our mills self-generates process steam requirements from by-products (black liquor and wood waste), as well as from the various purchased fuels. The process steam is used throughout the production process and also to generate electricity.

In 2016, our packaging mills consumed about 60 million MMBTU’s of fuel to produce both steam and electricity. Of the 60 million MMBTU’s consumed, about 61% was from mill generated by-products and 39% was from purchased fuels. Of the 39% in purchased fuels, 69% was from natural gas, 26% was from purchased wood waste and 5% was from other purchased fuels.

Chemical supply. We consume various chemicals in the production of containerboard, including caustic soda and sulfuric acid. Most of our chemicals are purchased under contracts, which are bid or negotiated periodically.

Sales, Marketing, and Distribution

Our corrugated products are sold through a direct sales and marketing organization, independent brokers, and distribution partners. We have sales representatives and a sales manager at most of our corrugated manufacturing operations and also have corporate account managers who serve customer accounts with a national presence. Additionally, our design centers maintain an on-site dedicated graphics sales force. In addition to direct sales and marketing personnel, we utilize new product development engineers and product graphics and design specialists. These individuals are located at both the corrugated plants and the design centers. General marketing support is located at our corporate headquarters.

Our containerboard sales group is responsible for the coordination of linerboard and corrugating medium sales to our corrugated plants, to outside domestic customers, and to export customers. This group handles order processing for all shipments of containerboard from our mills to our corrugated plants. These personnel also coordinate and execute all containerboard trade agreements with other containerboard manufacturers.

Containerboard produced in our mills is shipped by rail or truck. Our corrugated products are delivered by truck due to our large number of customers and their demand for timely service. Our corrugated manufacturing operations typically serve customers within a 150-mile radius. We sometimes use third-party warehouses for short-term storage of corrugated products.

Customers

We sell corrugated products to over 17,000 customers in over 34,000 locations. About three-quarters of our corrugated products sales are to regional and local accounts, which are broadly diversified across industries and geographic locations. The remaining one-quarter of our customer base consists primarily of national accounts that have multiple locations and are served by a number of PCA plants. No single customer exceeds 10% of segment sales.

The primary end-use markets in the United States for corrugated products are shown below as reported in the 2015 Fibre Box Association annual report:

Food, beverages, and agricultural products	45%
Retail and wholesale trade	19%
Miscellaneous manufacturing	15%
Paper and other products	11%
Chemical, plastic, and rubber products	10%

Competition

As of December 31, 2016, we were the fourth largest producer of containerboard products in the United States, according to industry sources and our own estimates. According to industry sources, corrugated products are produced by about 500 U.S. companies operating approximately 1,200 plants. The primary basis for competition for most of our packaging products includes quality, service, price, product design, and innovation. Most corrugated products are manufactured to the customer's specifications. Corrugated producers generally sell within a 150-mile radius of their plants and compete with other corrugated producers in their local region. Competition in our corrugated products operations tends to be regional, although we also face competition from large competitors with significant national account presence.

On a national level, our primary competitors are International Paper Company, WestRock Company, Georgia-Pacific LLC, KapStone Paper and Packaging Corporation, and Pratt Industries. However, with our strategic focus on regional and local accounts, we also compete with the smaller, independent producers.

Paper

We are the third largest manufacturer of uncoated freesheet in the United States, according to industry sources and our own estimates. We manufacture and sell white papers, including both commodity and specialty papers, which may have custom or specialized features such as colors, coatings, high brightness, and recycled content. White papers consist of communication papers (cut-size office papers and printing and converting papers) and pressure sensitive papers, including release liners, which our customers use to produce labels for use in consumer and commercially-packaged products. Effective December 1, 2016, we ceased softwood market pulp production at our Wallula, Washington mill and permanently shut down the No.1 machine, with pulp capacity of approximately 100,000 tons.

Facilities

We have three white paper mills located in the United States. The following paragraphs describe our white paper mills:

Jackson. Our Jackson, Alabama mill produces both commodity and specialty papers. Its year-end 2016 annual estimated production capacity of white papers on two paper machines, as reported to the AF&PA, was 470,000 tons. In 2016, the mill produced 465,000 tons of white papers.

International Falls. Our International Falls, Minnesota mill produces both commodity and specialty papers. Its year-end 2016 annual estimated production capacity of white papers on two paper machines, as reported to the AF&PA, was 465,000 tons. In 2016, the mill produced 475,000 tons of white papers.

Wallula. Our Wallula, Washington mill has the ability, on one machine, to switch production between pressure sensitive papers and a variety of white paper grades. The mill also produces corrugating medium. Its year-end 2016 annual estimated production capacity of white paper grades, as reported to the AF&PA, was 190,000 tons. The semi-chemical corrugating medium produced at Wallula is included in our Packaging segment as discussed above. In 2016, the mill produced 187,000 tons of white papers and 45,000 tons of market pulp. We ceased market pulp production in December 2016.

Major Raw Materials Used

Fiber supply. Fiber is our principal raw material in this segment, including wood fiber, recycled fiber, and purchased pulp. We purchase both whole logs and wood chips, which are a byproduct of lumber and plywood production. At our mill in Jackson, Alabama, we also purchase recycled fiber to produce our line of recycled office papers. Our Jackson and International Falls paper mills also purchase pulp from third parties pursuant to contractual arrangements. We purchase wood fiber through contracts and open-market purchases.

We participate in the Sustainable Forestry Initiative® (SFI) and the Forest Stewardship Council® (FSC) and are certified under the SFI sourcing standards. We procure all wood fiber for our white paper mills through our certified systems that are managed in accordance with the SFI and FSC standards. These standards are aimed at ensuring the long-term health and conservation of forestry resources.

Energy supply. We obtain energy through purchased or self-generated fuels and electricity. Fuel sources include natural gas, electricity, by-products of the manufacturing and pulping process (including black liquor and wood waste), and purchased wood waste. Each of the paper mills self-generates process steam requirements from by-products (black liquor and wood waste), as well as from the various purchased fuels. The process steam is used throughout the production process and to generate electricity.

In 2016, our white paper mills consumed about 30 million MMBTU's of fuel to produce both steam and electricity. Of the 30 million MMBTU's consumed, about 62% was from mill generated by-products and 38% was from purchased fuels. Of the 38% in purchased fuels, 85% was from natural gas and 15% from purchased wood waste.

Chemical supply. We consume various chemicals in the production of white papers and pulp, including starch, precipitated calcium carbonate, caustic soda, sodium chlorate, dyestuffs, and optical brighteners. Most of our chemicals are purchased under contracts, which are bid or negotiated periodically.

Sales, Marketing, and Distribution

Our white papers are sold primarily by our own sales personnel. We ship to customers both directly from our mills and through distribution centers and a network of outside warehouses by rail or truck. This allows us to respond quickly to customer requirements.

Customers

We have over 200 customers in approximately 500 locations. These customers include paper merchants, commercial and financial printers, envelope converters, and customers who use our pressure sensitive paper for specialty applications such as consumer and commercial product labels. We have established long-term relationships with many of our customers. Office Depot, Inc. is our largest customer in the Paper segment. We have an agreement with Office Depot in which we will supply at least 50% of Office Depot's requirements for commodity office papers through December 2017. The agreement will renew automatically through December 2018; however, there are circumstances that could cause the agreement to terminate in 2017. If this were to occur, Office Depot's purchase obligations under the agreement would phase out over two years. In 2016, our sales revenue to Office Depot represented 42% of our Paper segment sales revenue.

Competition

The markets in which our Paper segment competes are large and highly competitive. Commodity grades of white paper are globally traded, with numerous worldwide manufacturers, and as a result, these products compete primarily on the basis of price. All of our paper manufacturing facilities are located in the United States, and although we compete primarily in the domestic market, we do face competition from foreign producers and have experienced increased foreign competition in recent years. The level of this competition varies depending on domestic and foreign demand and foreign currency exchange rates. In general, paper production does not rely on proprietary processes or formulas, except in highly specialized or custom grades.

Our largest competitors include Domtar Corporation, International Paper Company, and Georgia-Pacific LLC. We also face competition from overseas producers. Although price is the primary basis for competition in most of our paper grades, quality and service are also important competitive determinants. Our white papers compete with electronic data transmission, e-readers, electronic document storage alternatives, and paper grades we do not produce. Increasing shifts to these alternatives

have had, and are likely to continue to have, an adverse effect on traditional print media and paper usage and lower demand for communication papers.

Corporate and Other

Our Corporate and Other segment includes corporate support staff services and related assets and liabilities. This segment also includes transportation assets, such as rail cars and trucks, which we use to transport some of our products from our manufacturing sites, and assets related to a 50% owned variable interest entity, Louisiana Timber Procurement Company, L.L.C. (LTP).

Employees

As of December 31, 2016, we had approximately 14,000 employees, including 4,200 salaried and 9,800 hourly employees. Approximately 70% of our hourly employees worked pursuant to collective bargaining agreements. The majority of our unionized employees are represented by the United Steel Workers (USW), the International Brotherhood of Teamsters (IBT), the International Association of Machinists (IAM), and the Association of Western Pulp and Paper Workers (AWPPW). We are currently in negotiations to renew or extend any union contracts that have recently expired or are expiring in the near future, including the agreement at our Wallula, Washington paper mill with the AWPPW union, which expires on March 14, 2017. During 2016, we experienced no work stoppages, and we believe we have satisfactory labor relations with our employees.

Environmental Matters

A discussion of the financial impact of our compliance with environmental laws is presented under the caption "Environmental Matters" in "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" of this Form 10-K.

Executive Officers of the Registrant

Brief statements setting forth the age at February 28, 2017, the principal occupation, employment during the past five years, the year in which such person first became an officer of PCA, and other information concerning each of our executive officers appears below.

Mark W. Kowlzan, **61, Chairman and Chief Executive Officer** - Mr. Kowlzan has served as PCA's Chairman since January 2016 and as Chief Executive Officer and a director since July 2010. From 1998 through June 2010, Mr. Kowlzan led the company's containerboard mill system, first as Vice President and General Manager and then as Senior Vice President - Containerboard. From 1996 through 1998, Mr. Kowlzan served in various senior mill-related operating positions with PCA and Tenneco Packaging, including as manager of the Counce linerboard mill. Prior to joining Tenneco Packaging, Mr. Kowlzan spent 15 years at International Paper Company, a global paper and packaging company, where he held a series of operational and managerial positions within its mill organization. Mr. Kowlzan is a member of the board of American Forest and Paper Association.

Thomas A. Hassfurther, **61, Executive Vice President - Corrugated Products** - Mr. Hassfurther has served as Executive Vice President - Corrugated Products of PCA since September 2009. From February 2005 to September 2009, Mr. Hassfurther served as Senior Vice President - Sales and Marketing, Corrugated Products. Prior to this he held various senior-level management and sales positions at PCA and Tenneco Packaging. Mr. Hassfurther joined the company in 1977.

Charles J. Carter, **57, Senior Vice President - Containerboard Mill Operations** - Mr. Carter has served as Senior Vice President - Containerboard Mill Operations since July 2013. Prior to this, he served as Vice President – Containerboard Mill Operations since January 2011. From March 2010 to January 2011, Mr. Carter served as PCA's Director of Papermaking Technology. Prior to joining PCA in 2010, Mr. Carter spent 28 years with various pulp and paper companies in managerial and technical positions of increasing responsibility, most recently as Vice President and General Manager of the Calhoun, Tennessee mill of Abitibi Bowater from 2007 to 2010 and as manager of SP Newsprint's Dublin, Georgia mill from 1999 to 2007.

Robert P. Mundy, **55, Senior Vice President and Chief Financial Officer** - Mr. Mundy has served as PCA's Senior Vice President since July 2015 and Chief Financial Officer since September 2015. He previously served as Senior Vice President and Chief Financial Officer of Verso Corporation, a leading North American supplier of coated papers to catalog and magazine publishers, from 2006 to June 2015. Verso Corporation filed for Chapter 11 bankruptcy in January 2016. Prior to that, he worked at International Paper Company, from 1983 to 2006, where he was Director of Finance of the Coated and

Supercalendered Papers division from 2002 to 2006, Director of Finance Projects from 2001 to 2002, Controller of Masonite Corporation from 1999 to 2001, and Controller of the Petroleum and Minerals business from 1996 to 1999. He served in various business positions at International Paper from 1983 to 1996.

***Kent A. Pflederer,* 46, Senior Vice President, General Counsel and Secretary** - Mr. Pflederer has served as General Counsel and Corporate Secretary since June 2007 and Senior Vice President since January 2013. Prior to joining PCA, Mr. Pflederer served as Senior Counsel, Corporate and Securities, at Hospira, Inc. from 2004 to 2007 and served in the corporate and securities practice at Mayer Brown, LLP from 1996 to 2004.

***Thomas W.H. Walton,* 57, Senior Vice President - Sales and Marketing, Corrugated Products** - Mr. Walton has served as Senior Vice President - Sales and Marketing, Corrugated Products since October 2009. Prior to this, he served as a Vice President and Area General Manager within the Corrugated Products Group since 1998. Mr. Walton joined the company in 1981 and has also held positions in production, sales, and general management.

Available Information

PCA's internet website address is *www.packagingcorp.com*. Our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13 or 15(d) of the Securities Exchange Act of 1934 are available free of charge through our website as soon as reasonably practicable after they are electronically filed with, or furnished to, the Securities and Exchange Commission. In addition, our Code of Ethics may be accessed in the Investor Relations section of PCA's website. PCA's website and the information contained or incorporated therein are not intended to be incorporated into this report.

Item 1A. ***RISK FACTORS***

Some of the statements in this report and, in particular, statements found in Management's Discussion and Analysis of Financial Condition and Results of Operations, that are not historical in nature are forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. Forward-looking statements include statements about our expectations regarding our future liquidity, earnings, expenditures, and financial condition. These statements are often identified by the words "will," "should," "anticipate," "believe," "expect," "intend," "estimate," "hope," or similar expressions. These statements reflect management's current views with respect to future events and are subject to risks and uncertainties. There are important factors that could cause actual results to differ materially from those in forward-looking statements, many of which are beyond our control. These factors, risks and uncertainties include, but are not limited to, the factors described below.

Our actual results, performance, or achievement could differ materially from those expressed in, or implied by, these forward-looking statements, and accordingly, we can give no assurances that any of the events anticipated by the forward-looking statements will transpire or occur, or if any of them do so, what impact they will have on our results of operations or financial condition. In view of these uncertainties, investors are cautioned not to place undue reliance on these forward-looking statements. We expressly disclaim any obligation to publicly revise or otherwise update any forward-looking statements that have been made to reflect the occurrence of events after the date hereof.

In addition to the risks and uncertainties we discuss elsewhere in this Form 10-K (particularly in "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations") or in our other filings with the Securities and Exchange Commission (SEC), the following are important factors that could cause our actual results to differ materially from those we project in any forward-looking statement.

Industry Cyclicality** - **Changes in the prices of our products could materially affect our financial condition, results of operations, and liquidity. Macroeconomic conditions and fluctuations in industry capacity can create changes in prices, sales volumes, and margins for most of our products, particularly commodity grades of packaging and paper products. Prices for all of our products are driven by many factors, including general economic conditions, demand for our products, and competitive conditions in our industry, and we have little influence over the timing and extent of price changes, which may be unpredictable and volatile. In addition, our selling prices are influenced by index levels published by trade publications. Changes in how these index levels are determined or maintained may affect our sales prices. If supply exceeds demand, industry operating conditions deteriorate or other factors result in lower prices for our products, our earnings and operating cash flows would be harmed.

General Economic Conditions** - **Adverse business and economic conditions or changes in tax laws may have a material adverse effect on our business, results of operations, liquidity, and financial position. General global and U.S. economic conditions adversely affect the demand and production of consumer goods, employment levels, the availability and cost of credit, and ultimately, the profitability of our business. High unemployment rates, lower family income, unfavorable currency exchange rates, lower corporate earnings, lower business investment, and lower consumer spending typically result in decreased demand for our products and products of our customers which utilize our products. Changes in tax laws or tax rates may have a material impact on our future cash taxes, effective tax rate or deferred tax assets and liabilities. These conditions are beyond our control and may have a significant impact on our business, results of operations, liquidity, and financial position.

Competition** - **The intensity of competition in the industries in which we operate could result in downward pressure on pricing and volume, which could lower earnings and operating cash flows. Our industries are highly competitive, with no single containerboard, corrugated packaging, or white paper producer having a dominant position. Containerboard and commodity white paper products cannot generally be differentiated by producer, which tends to intensify price competition. The corrugated packaging industry is also sensitive to changes in economic conditions, as well as other factors including innovation, design, quality, and service. To the extent that one or more competitors are more successful than we are with respect to any key competitive factor, our business could be adversely affected. Our packaging products also compete, to some extent, with various other packaging materials, including products made of paper, plastics, wood, and various types of metal. If we are unable to successfully compete, we may lose market share or may be required to charge lower sales prices for our products, both of which would reduce our earnings and operating cash flows.

Our white paper products compete with electronic data transmission and document storage alternatives. Increasing shifts to electronic alternatives have had and will continue to have an adverse effect on usage of these products. As a result of such competition, we are experiencing decreasing demand for most of our existing white paper products. As the use of these alternatives grows, demand for paper products is likely to further decline. Declines in demand for our paper products may adversely affect our earnings and operating cash flows.

Some of our competitors are larger than we are and may have greater financial and other resources, greater manufacturing economies of scale, greater energy self-sufficiency, or lower operating costs, compared with our company. We may be unable to compete effectively with these companies particularly during economic downturns. Some of the factors that may adversely affect our ability to compete in the markets in which we participate include the entry of new competitors (including overseas producers, who have increased imports of white paper to the United States in recent years and have been found to have violated international trade rules) into the markets we serve, our competitors' pricing strategies, our inability to anticipate and respond to changing customer preferences, and our inability to maintain the cost-efficiency of our facilities.

Inflation and Other General Cost Increases - We may not be able to offset higher costs. We are subject to both contractual, inflationary, and other general cost increases, including with regard to our labor costs and purchases of raw materials. If we are unable to offset these cost increases by price increases, growth, and/or cost reductions in our operations, these inflationary and other general cost increases could have a material adverse effect on our operating cash flows, profitability, and liquidity.

In 2016, our total company costs including cost of sales (COS) and selling, general, and administrative expenses (SG&A) was $5.0 billion, and excluding non-cash costs (depreciation, depletion and amortization, pension and postretirement expense, and share-based compensation expense) was $4.6 billion. A 1% increase in COS and SG&A costs would increase costs by $50 million and cash costs by $46 million.

Cost of Fiber - An increase in the cost of fiber could increase our manufacturing costs and lower our earnings. The market price of wood fiber varies based upon availability, source, and the costs of fuels used in the harvesting and transportation of wood fiber. The cost and availability of wood fiber can also be impacted by weather, general logging conditions, geography, and regulatory activity.

The availability and cost of recycled fiber depends heavily on recycling rates and the domestic and global demand for recycled products. We purchase recycled fiber for use at four of our five containerboard mills as well as the containerboard machine at our Wallula, Washington mill. In 2016, we purchased approximately 630,000 tons of recycled fiber, net of the recycled fiber generated by our corrugated box plants. The amount of recycled fiber purchased each year varies based upon production and the prices of both recycled fiber and wood fiber.

Periods of supply and demand imbalance have created significant price volatility. Periods of higher recycled fiber costs and unusual price volatility have occurred in the past and may occur again in the future, which could result in higher costs and lower earnings. A $10 per ton price increase in recycled fiber for our containerboard mills, would result in approximately $6 million of additional expense.

Cost of Purchased Fuels and Chemicals - An increase in the cost of purchased fuels and chemicals could lead to higher manufacturing costs, resulting in reduced earnings. We have the ability to use various types of purchased fuels in our manufacturing operations, including natural gas, bark, and other purchased fuels. Fuel prices, in particular prices for oil and natural gas, have fluctuated dramatically in the past. New and more stringent environmental regulations may discourage, reduce the availability of, or make more expensive, the use of certain fuels, particularly coal and fossil fuels. In addition, costs for key chemicals used in our manufacturing operations also fluctuate. These fluctuations impact our manufacturing costs and result in earnings volatility. If fuel and chemical prices rise, our production costs and transportation costs will increase and cause higher manufacturing costs and reduced earnings. A $0.10 per million MMBTU in natural gas prices would result in approximately $3 million of additional expense, based on 2016 usage.

Material Disruption of Manufacturing - A material disruption at one of our manufacturing facilities could prevent us from meeting customer demand, reduce our sales, and/or negatively affect our results of operations and financial condition. Our business depends on continuous operation of our facilities, particularly at our mills. Any of our manufacturing facilities, or any of our machines within such facilities, could cease operations unexpectedly for a significant period of time due to a number of events, including:

- Unscheduled maintenance outages.
- Prolonged power failures.
- Equipment failure.
- Explosion of a boiler or other major facilities.
- Disruption in the supply of raw materials, such as wood fiber, energy, or chemicals.
- A chemical spill or release.
- Closure or curtailment related to environmental concerns.
- Labor difficulties.
- Disruptions in the transportation infrastructure, including roads, bridges, railroad tracks, and tunnels.
- Fires, floods, earthquakes, hurricanes, or other catastrophes.
- Terrorism or threats of terrorism.
- Other operational problems.

These events could harm our ability to produce our products and serve our customers and may lead to higher costs and reduced earnings.

Environmental Matters - ***PCA may incur significant environmental liabilities with respect to both past and future operations.*** We are subject to, and must comply with, a variety of federal, state and local environmental laws, particularly those relating to air and water quality, waste disposal and the cleanup of contaminated soil and groundwater. Because environmental regulations are constantly evolving, we have incurred, and will continue to incur, costs to maintain compliance with those laws. See Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations - Environmental Matters" for estimates of expenditures we expect to make for environmental compliance in the next few years. New and more stringent environmental regulations may be adopted and may require us to incur significant additional capital expenditures to modify or replace certain of our boilers. In addition, environmental regulations may increase the cost of our raw materials and purchased energy. Although we have established reserves to provide for known environmental liabilities, these reserves may change over time due to the enactment of new environmental laws or regulations or changes in existing laws or regulations, which might require additional significant environmental expenditures.

Mergers and Acquisitions - ***Our acquired businesses may underperform relative to our expectations, and we may not be able to successfully integrate these businesses into our own.*** We have completed several mergers and acquisitions and investments in recent years, including our acquisitions of TimBar and Columbus Container during 2016. Our success will depend in part on our ability to successfully integrate, and receive the intended benefits from these acquisitions. There may be difficulties, costs and delays involved in the integration of these businesses into ours. Integration requires modification of operational and financial systems, and may result in significant additional expenses. If the acquired businesses underperform relative to our expectations, or if we fail to successfully integrate these businesses, our business, financial condition and results of operations may be materially and adversely affected.

Customer Concentration - ***Office Depot represents a significant portion of PCA's paper business.*** We have a supply agreement with Office Depot, our largest customer in the Paper segment. The agreement requires Office Depot to buy, and us to supply, at least 50% of Office Depot's requirements for office papers through December 2017.

In 2016, sales to Office Depot represented 42% of our Paper segment sales and 8% of our consolidated sales. If these sales are reduced, including if we are unable to renew the agreement at committed volumes, we would need to find new customers. We may not be able to fully replace any lost sales, and any new sales may be at lower prices or higher costs. Any significant deterioration in the financial condition of Office Depot affecting its ability to pay or any other change that makes Office Depot less willing to purchase our products will harm our business and results of operations.

Labor Relations- ***If we experience strikes or other work stoppages, our business will be harmed.*** Our workforce is highly unionized and operates under various collective bargaining agreements. We must negotiate to renew or extend any union contracts that have recently expired or are expiring in the near future. While we believe that we have generally had satisfactory labor relations, we may not be able to successfully negotiate new agreements without work stoppages or labor difficulties in the future or renegotiate them on favorable terms. If we are unable to successfully renegotiate the terms of any of these agreements, or if we experience any extended interruption of operations at any of our facilities as a result of strikes or other work stoppages, our business, results of operations and financial condition may be harmed.

Cyber Security - ***Risks related to security breaches of company, customer, employee, and vendor information, as well as the technology that manages our operations and other business processes, could adversely affect our business.*** We rely on various information technology systems to capture, process, store, and report data and interact with customers, vendors, and employees. Despite careful security and controls design, implementation, updating, and internal and independent third-party assessments, our information technology systems, and those of our third party providers, could become subject to cyber attacks or security breaches. Network, system, and data breaches could result in misappropriation of sensitive data or operational disruptions including interruption to systems availability and denial of access to and misuse of applications required by our customers to conduct business with us. Misuse of internal applications; theft of intellectual property, trade secrets, or other corporate assets; and inappropriate disclosure of confidential information could stem from such incidents. Delayed sales, slowed production, or other issues resulting from these disruptions could result in lost sales, business delays, and negative publicity and could have a material adverse effect on our operations, financial condition, or operating cash flows.

Debt obligations - ***Our debt service obligations may reduce our operating flexibility.*** At December 31, 2016, we had $2.6 billion of long-term debt outstanding and a $324.9 million undrawn revolving credit facility, after deducting letters of credit. We and our subsidiaries may incur additional indebtedness in the future. Our indebtedness includes $1.0 billion with floating interest rates. An increase in interest rates will increase the amount we must pay to service our indebtedness.

Our current borrowings, plus any future borrowings, may affect our ability to operate our business, including, without limitation:

- Result in significant cash requirements to make interest and maturity payments on our outstanding indebtedness;
- Increase our vulnerability to adverse changes in our business or industry conditions;
- Increase our vulnerability to increases in interest rates;
- Limit our ability to obtain additional financing for working capital, capital expenditures, general corporate, and other purposes;
- Limit our flexibility in planning for, or reacting to, changes in our business and our industry; and
- Limit our flexibility to make acquisitions.

Further, if we cannot service our indebtedness, we may have to take actions to secure additional cash by selling assets, seeking additional equity or reducing investments, which may not be achievable on acceptable terms or at all.

Market Price of our Common Stock - The market price of our common stock may be volatile, which could cause the value of the stock to decline. Securities markets worldwide periodically experience significant price declines and volume fluctuations. This market volatility, as well as general economic, market, or political conditions, could reduce the market price of our common stock in spite of our operating performance. In addition, our operating results could be below the expectations of public market analysts and investors, and in response, the market price of our common stock could decrease significantly.

Item 1B. ***UNRESOLVED STAFF COMMENTS***

None.

Item 2. ***PROPERTIES***

We own and lease properties in our business. Primarily all of our leases are noncancelable and are accounted for as operating leases. These leases are not subject to early termination except for standard nonperformance clauses.

Information concerning capacity and utilization of our principal operating facilities, the segments that use those facilities, and a map of geographical locations is presented in "Part I, Item 1. Business" of this Form 10-K. We assess the condition and capacity of our manufacturing, distribution, and other facilities needed to meet our operating requirements. Our properties have been generally well maintained and are in good operating condition. In general, our facilities have sufficient capacity and are adequate for our production and distribution requirements.

We currently own buildings and land for five containerboard mills and three white paper mills. Additionally, we have 94 corrugated manufacturing operations, of which the buildings and land for 52 are owned, including 44 combining operations, or corrugated plants, one corrugated sheet-only manufacturer, and seven sheet plants. We lease the building for 15 corrugated plants and 27 sheet plants. We own one warehouse and miscellaneous other properties, including sales offices and woodlands management offices. We lease space for regional design centers and numerous other distribution centers, warehouses, and facilities. The equipment in these leased facilities is, in virtually all cases, owned by us, except for forklifts and other rolling stock, which are generally leased.

We lease the cutting rights to approximately 75,000 acres of timberland located near our Valdosta mill (68,000 acres) and our Counce mill (7,000 acres). On average, these cutting rights agreements have terms with approximately 14 years remaining. Additionally, we lease approximately 9,000 acres of land for a fiber farm, located near our Wallula mill, where we plant, grow, and harvest fiber.

Our corporate headquarters is located in Lake Forest, Illinois. The headquarter facilities are leased for the next five years with provisions for two additional five year lease extensions. We also lease an administrative office in Boise, Idaho, through March 2018.

Item 3. ***LEGAL PROCEEDINGS***

Information concerning legal proceedings can be found in Note 18, Commitments, Guarantees, Indemnifications, and Legal Proceedings, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of this Form 10-K.

Item 4. ***MINE SAFETY DISCLOSURE***

Not applicable.

PART II

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

Market Information

PCA's common stock is listed on the New York Stock Exchange (NYSE) under the symbol "PKG". The following table sets forth the high and low sales prices as reported by the NYSE and the cash dividends declared per common share during the last two years.

	2016			2015		
	Sales Price		Dividends	Sales Price		Dividends
Quarter Ended	High	Low	Declared	High	Low	Declared
March 31	$ 62.67	$ 44.32	$ 0.55	$ 84.88	$ 73.03	$ 0.55
June 30	71.31	58.44	0.55	78.98	62.48	0.55
September 30	82.77	65.12	0.63	73.60	58.29	0.55
December 31	88.41	78.03	0.63	70.04	59.54	0.55

Stockholders

On February 24, 2017, there were 70 holders of record of our common stock.

Dividend Policy

PCA expects to continue to pay regular cash dividends, although there is no assurance as to the timing or level of future dividend payments because these depend on future earnings, capital requirements, and financial condition. The timing and amount of future dividends are subject to the determination of PCA's Board of Directors.

On August 31, 2016, PCA announced an increase of its quarterly cash dividend on its common stock from an annual payout of $2.20 per share to an annual payout of $2.52 per share. The first quarterly dividend of $0.63 per share was paid on October 14, 2016 to shareholders of record as of September 15, 2016.

Purchases of Equity Securities

Stock Repurchase Program

On February 25, 2016, PCA announced that its Board of Directors authorized the repurchase of $200 million of the Company's outstanding common stock. At the time of the announcement, there was no remaining authority under previously announced programs. Repurchases may be made from time to time in open market or privately negotiated transactions in accordance with applicable securities regulations. The timing and amount of repurchases will be determined by the company in its discretion based on factors such as PCA's stock price and market and business conditions.

In 2016, we paid $100.3 million to repurchase 1,987,187 shares of common stock which fully depleted the remaining $93.3 million authorized for repurchase under the July 2015 authorization. In 2015, we paid $154.7 million to repurchase 2,326,493 shares of common stock. In 2014, the Company did not repurchase any shares of common stock. All shares repurchased have been retired. As of December 31, 2016, $193.0 million of the authorized amount remained available for repurchase of the Company's common stock.

Pursuant to its equity incentive plan, the Company withholds shares from vesting employee equity awards to cover employee tax liabilities. Total shares withheld in 2016 were 172,438 for $11.2 million. Total shares withheld in 2015 were 129,983 for $8.7 million. Total shares withheld in 2014 were 183,170 for $13.2 million. Shares withheld are included in the number of shares repurchased in the table below.

The following table presents information related to our repurchases of common stock made under repurchase plans authorized by PCA's Board of Directors, and shares withheld to cover taxes on vesting of equity awards, during the three months ended December 31, 2016:

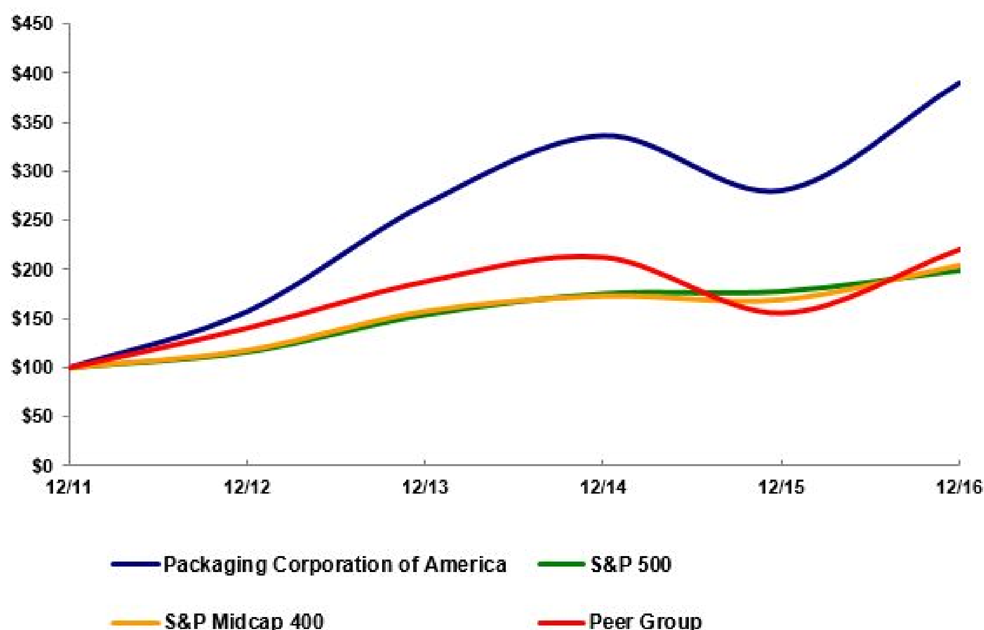
Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased (a)	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares That May Yet Be Purchased Under the Plans or Programs (in millions)
October 1-31, 2016	—	$ —	—	$ 193.0
November 1-30, 2016	—	—	—	193.0
December 1-31, 2016	11,429	86.28	—	193.0
Total	**11,429** (a)	**$ 86.28**	**—**	**$ 193.0**

(a) 11,429 shares were withheld from employees to cover income and payroll taxes on equity awards that vested during the period.

Performance Graph

The graph below compares PCA's cumulative 5-year total shareholder return on common stock with the cumulative total returns of the S&P 500 index; the S&P Midcap 400 index; and a Peer Group that includes two publicly-traded companies, which are International Paper Company and KapStone Paper and Packaging Corporation. The graph tracks the performance of a $100 investment (including the reinvestment of all dividends) in our common stock, in each index, and in the peer groups' common stock from December 31, 2011, through December 31, 2016. The stock price performance included in this graph is not necessarily indicative of future stock price performance.



*$100 invested on 12/31/11 in stock or index, including reinvestment of dividends.
Fiscal year ending December 31.

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	Cumulative Total Return					
	December 31					
	2011	2012	2013	2014	2015	2016
Packaging Corporation of America	$ 100.00	$ 157.35	$ 266.53	$ 336.07	$ 280.32	$ 389.91
S&P 500	100.00	116.00	153.58	174.60	177.01	198.18
S&P Midcap 400	100.00	117.88	157.37	172.74	168.98	204.03
Peer Group	100.00	139.99	186.93	211.57	155.34	219.34

The information in the graph and table above is not deemed "filed" with the Securities and Exchange Commission and is not to be incorporated by reference in any of PCA's filings under the Securities Act of 1933 or the Securities Exchange Act of 1934, whether made before or after the date of this Annual Report on Form 10-K, except to the extent that PCA specifically incorporates such information by reference.

Item 6. ***SELECTED FINANCIAL DATA***

The following table sets forth selected historical financial data of PCA (dollars and shares in millions, except per share data). The information contained in the table should be read in conjunction with the disclosures in "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" and "Part II, Item 8. Financial Statements and Supplementary Data" of this Form 10-K.

	Year Ended December 31				
	2016 (a)	**2015 (a)**	**2014 (a)**	**2013 (a)**	**2012**
Statement of Income Data (b):					
Net Sales	$ 5,779.0	$ 5,741.7	$ 5,852.6	$ 3,665.3	$ 2,843.9
Net Income	449.6	436.8	392.6	441.3	160.2
Net income per common share:					
— basic	4.76	4.47	3.99	4.57	1.66
— diluted	4.75	4.47	3.99	4.52	1.64
Weighted average common shares outstanding:					
— basic	93.5	96.6	97.0	96.6	96.4
— diluted	93.7	96.7	97.1	97.5	97.5
EBITDA(c)	$ 1,138.3	$ 1,106.5	$ 1,083.7	$ 683.7	$ 608.3
Cash dividends declared per common share	2.36	2.20	1.60	1.51	1.00
Balance Sheet Data (b):					
Total assets	$ 5,777.0	$ 5,272.3	$ 5,258.7	$ 5,182.1	$ 2,490.1
Total debt obligations	2,667.4	2,319.7	2,365.2	2,558.6	814.7
Stockholders' equity	1,759.8	1,633.3	1,521.4	1,356.8	1,008.2

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(a) On October 25, 2013, we acquired Boise Inc. (Boise). Our financial results include Boise subsequent to acquisition.

(b) Effective January 1, 2016, the Company adopted Accounting Standards Update (ASU) 2015-03 (Topic 835): *Simplifying the Presentation of Debt Issuance Costs*. We applied this guidance retrospectively, as required, and reclassified the debt issuance costs from "Other long-term assets" to "Long-term debt" on our Consolidated Balance Sheet to conform with current period presentation. Total assets for all periods presented have been updated to reflect this adoption.

Effective December 31, 2015, the Company adopted Accounting Standards Update 2015-17, *Balance Sheet Classification of Deferred Taxes.* The guidance eliminates the requirement to classify deferred taxes between current and noncurrent and requires that all deferred tax assets and liabilities, along with any related valuation allowance, be classified as noncurrent on the balance sheet. Our total assets for all periods presented have been updated to reflect this adoption.

Effective January 1, 2014, the Company changed its method of accounting for inventories from lower of cost, as determined by the LIFO method, or market, to lower of cost, as determined by the average cost method, or market. The Company applied the change retrospectively to all prior periods presented herein in accordance with US generally accepted accounting principles (GAAP) relating to accounting changes.

(c) EBITDA represents income before interest (interest expense and interest income), income tax provision (benefit), and depreciation, amortization, and depletion. We present EBITDA because it provides a means to evaluate our performance on an ongoing basis using the same measure that is used by our management and because it is frequently used by investors and other interested parties in the evaluation of companies. EBITDA, however, is not a measure of our liquidity or financial performance under generally accepted accounting principles (GAAP) and should not be considered as an alternative to net income, income from operations, or any other performance measure derived in accordance with GAAP or as an alternative to cash flow from operating activities as a measure of our liquidity. Any analysis of non-GAAP financial measures should be done in conjunction with results presented in accordance with GAAP. The non-GAAP measures are not intended to be substitutes for GAAP financial measures and should not be used as such. See "Reconciliations of Non-GAAP Financial Measures to Reported Amounts" included in "Part II, Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations" of this Form 10-K for a reconciliation of non-GAAP measures to the most comparable GAAP measure.

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

The following discussion and analysis of historical results of operations and financial condition should be read in conjunction with the audited financial statements and the notes thereto which appear elsewhere in this Form 10-K. This discussion includes forward-looking statements regarding our expectations with respect to our future performance, liquidity, and capital resources. Such statements, along with any other nonhistorical statements in the discussion, are forward-looking. See our discussion regarding forward-looking statements included under "Part I, Item 1A. Risk Factors" of this Form 10-K.

Overview

PCA is the fourth largest producer of containerboard products in the United States and the third largest producer of uncoated freesheet paper in the United States, based on production capacity. We operate five containerboard mills, three paper mills, and 94 corrugated products manufacturing plants. Our containerboard mills produce linerboard and corrugating medium, which are papers primarily used in the production of corrugated products. Our corrugated products manufacturing plants produce a wide variety of corrugated packaging products, including conventional shipping containers used to protect and transport manufactured goods, multi-color boxes and displays with strong visual appeal that help to merchandise the packaged product in retail locations, and honeycomb protective packaging. In addition, we are a large producer of packaging for meat, fresh fruit and vegetables, processed food, beverages, and other industrial and consumer products. We also manufacture and sell white papers, including both commodity and specialty papers, which may have custom or specialized features such as colors, coatings, high brightness, and recycled content. We are headquartered in Lake Forest, Illinois and operate primarily in the United States.

During 2016, we made two acquisitions in our corrugated products business: Tim-Bar Corporation ("TimBar") and Columbus Container, Inc. ("Columbus Container"). On August 29, 2016, we acquired substantially all of the assets of TimBar, a large independent corrugated products producer with six corrugated products production facilities for a purchase price of $386 million. To finance the acquisition, we borrowed $385 million under a new five-year term loan facility. TimBar provides solutions to customers in the higher margin retail, industrial packaging and display and fulfillment markets with a focus on multi-color graphics and technical innovation. On November 30, 2016, we acquired substantially all of the assets of Columbus Container for a purchase price of $100 million. Columbus Container is a full-service provider of corrugated packaging products, with a full-line corrugated products plant and warehousing facilities and other related operations located in Indiana and Illinois. We used available cash on hand to pay the purchase price. The operating results of TimBar and Columbus Container are included in our results and reported in the Packaging segment from and after the respective dates of acquisition. These acquisitions will accelerate the growth strategy and increase the containerboard integration level in our Packaging segment.

Executive Summary

We reported $450 million of net income, or $4.75 per diluted share, compared with $437 million, or $4.47 per share in 2015. Income included $19 million of pre-tax expense for special items in 2016 compared to $9 million in 2015. Excluding special items, we recorded $462 million of net income, or $4.88 per diluted share in 2016, compared with $443 million and $4.53 per diluted share in 2015. The increase was driven primarily by increased containerboard and corrugated products volumes, improved operating costs, and a lower share count, partially offset by lower containerboard and corrugated products prices and mix and lower paper volumes. In 2016, we successfully completed the acquisitions of TimBar and Columbus Container, achieved a record $801 million of operating cash flow, and returned $316 million to our shareholders through share repurchases and dividends.

Packaging segment income from operations was $711 million, compared with $715 million in 2015, and earnings before interest, taxes, depreciation, amortization, and depletion (EBITDA) excluding special items was $1,019 million, compared with $1,009 million in 2015. Volumes were up in both our containerboard mills and corrugated products plants in 2016, and we began implementing announced price increases during the fourth quarter. Higher volumes and improved operating costs were partially offset by unfavorable changes in containerboard and corrugated products price and mix compared with 2015.

Paper segment income from operations was $138 million, compared with $112 million in 2015, and EBITDA excluding special items was $199 million, compared with $161 million in 2015. The increase was primarily due to improved operating costs and favorable changes in price and mix, partially offset by lower volume as a result of the 2016 shutdown of market pulp operations at our Wallula, Washington mill.

Earnings per diluted share, excluding special items, in 2016 and 2015 were as follows:

	Year Ended December 31	
	2016	2015
Earnings per diluted share	$ 4.75	$ 4.47
Special items:		
Facilities closure costs (a)	0.07	—
Acquisition-related costs (b)	0.03	—
Wallula mill restructuring (c)	0.02	—
Multiemployer pension withdrawal (d)	0.01	—
DeRidder restructuring (e)	—	0.01
Integration-related and other costs (f)	—	0.10
Sale of St. Helens paper mill site (g)	—	(0.05)
Total special items	0.13	0.06
Earnings per diluted share, excluding special items	$ 4.88	$ 4.53

(a) Includes $11.0 million of closure costs related to corrugated product facilities and a paper products facility.

(b) Includes $4.5 million of acquisition-related costs for the TimBar Corporation and Columbus Container, Inc. acquisitions.

(c) Includes $2.7 million of costs related to ceased production of softwood market pulp operations at our Wallula, Washington mill and the permanent shutdown of the No.1 machine.

(d) Includes $0.9 million of costs related to our withdrawal from a multiemployer pension plan for one of our corrugated products facilities.

(e) Includes $2.0 million of restructuring activities at our mill in DeRidder, Louisiana, including costs related to the conversion of the No. 3 newsprint machine to containerboard, our exit from the newsprint business, and other improvements. The restructuring charges primarily related to accelerated depreciation.

(f) Includes $13.4 million of Boise acquisition integration-related and other costs. These costs primarily relate to professional fees, severance, retention, relocation, travel, and other integration-related costs.

(g) In September 2015, we sold the remaining land, buildings, and equipment at our paper mill site in St. Helens, Oregon, where we ceased paper production in December 2012. We recorded a $6.7 million gain on the sale.

Management excludes special items, as it believes these items are not necessarily reflective of the ongoing results of operations of our business. We present these measures because they provide a means to evaluate the performance of our segments and our company on an ongoing basis using the same measures that are used by our management, because these measures assist in providing a meaningful comparison between periods presented and because these measures are frequently used by investors and other interested parties in the evaluation of companies and the performance of their segments. A reconciliation of diluted EPS to diluted EPS excluding special items is included above and the reconciliations of other non-GAAP measures used in this Management's Discussion and Analysis of Financial Condition and Results of Operations, to the most comparable measure reported in accordance with GAAP, are included later in Item 7 under "Reconciliations of Non-GAAP Financial Measures to Reported Amounts." Any analysis of non-GAAP financial measures should be done in conjunction with results presented in accordance with GAAP. The non-GAAP measures are not intended to be substitutes for GAAP financial measures and should not be used as such.

Industry and Business Conditions

Trade publications reported that industry corrugated products shipments increased 2.1% during 2016, compared with 2015. Reported industry containerboard production was 1.2% higher than 2015, with export shipments up 4.6%. Published open market containerboard prices for linerboard decreased $15 per ton in January, followed by a $40 per ton increase in October. Medium decreased $20, $10, and $15 per ton in January, February, and August respectively, followed by a $40 increase in October.

The market for communication papers competes heavily with electronic data transmission and document storage alternatives. Increasing shifts to these alternatives have reduced usage of traditional print media and communication papers.

Trade publications reported that uncoated freesheet paper shipments were down 3.4% in 2016, compared with 2015. Trade publication average prices for uncoated freesheet decreased $19 per ton, or 1.9%, in 2016, compared with 2015.

Outlook

Looking ahead to the first quarter of 2017, we expect to realize the vast majority of our previously announced Packaging segment price increases and we expect higher corrugated products shipments with continuing strong demand. We expect lower containerboard and paper production volume as we have scheduled maintenance outages on one of our machines at both the Counce and DeRidder containerboard mills and on one of our machines at our Jackson, Alabama paper mill. We expect higher freight costs as well as higher labor and benefits costs with annual wage increases and other timing-related expenses. We also anticipate continued price inflation on recycled fiber, energy, and certain chemicals, and seasonally colder weather is expected to increase wood and energy costs. Considering these items, we expect first quarter earnings per share to be higher than fourth quarter 2016.

Results of Operations

Year Ended December 31, 2016, Compared with Year Ended December 31, 2015

The historical results of operations of PCA for the years ended December 31, 2016 and 2015 are set forth below (dollars in millions):

	Year Ended December 31		
	2016	2015	Change
Packaging	$ 4,584.8	$ 4,477.3	$ 107.5
Paper	1,093.9	1,143.1	(49.2)
Corporate and other and eliminations	100.3	121.3	(21.0)
Net sales	$ 5,779.0	$ 5,741.7	$ 37.3
Packaging	$ 711.1	$ 714.9	$ (3.8)
Paper	138.1	112.5	25.6
Corporate and other	(68.9)	(77.4)	8.5
Income from operations	$ 780.3	$ 750.0	$ 30.3
Interest expense, net	(91.8)	(85.5)	(6.3)
Income before taxes	688.5	664.5	24.0
Income tax expense	(238.9)	(227.7)	(11.2)
Net income	$ 449.6	$ 436.8	$ 12.8
Net income excluding special items (a)	$ 462.0	$ 442.6	$ 19.4
EBITDA (a)	$ 1,138.3	$ 1,106.5	$ 31.8
EBITDA excluding special items (a)	$ 1,154.5	$ 1,106.2	$ 48.3

(a) See "Reconciliations of Non-GAAP Financial Measures to Reported Amounts" included in this Item 7 for a reconciliation of non-GAAP measures to the most comparable GAAP measure.

Net Sales

Net sales increased $37 million, or 0.6%, to $5,779 million in 2016, compared with $5,742 million in 2015.

Packaging. Sales increased $108 million, or 2.4%, to $4,585 million, compared with $4,477 million in 2015. The increase was driven by increased corrugated products sales volume ($177 million), of which $117 million is related to our TimBar and Columbus acquisitions, partially offset by unfavorable changes in price and mix ($58 million) and the April 1, 2015 sale of our Hexacomb operations in Mexico and Europe ($11 million). Total corrugated products shipments in 2016 increased 5.0% over 2015. Packaging segment prices were lower than 2015, but trended up in the fourth quarter as we began implementing previously announced price increases to our containerboard and corrugated products customers. On average

during the year, our export prices were down 7.0% and domestic containerboard pricing was down 2.9% compared to last year. Containerboard mill production in 2016 was 3,736,000 total tons, compared with 3,656,000 total tons in 2015.

Paper. Sales decreased $49 million, or 4.3%, to $1,094 million, compared with $1,143 million in 2015. The decrease was related to lower volume as a result of the 2016 shutdown of market pulp operations at our Wallula mill, ($53 million), partially offset by favorable changes in price and mix ($3 million).

Gross Profit

Gross profit increased $68 million, or 5.6%, in 2016, compared with 2015. The increase was primarily due to higher containerboard and corrugated products volumes and lower fiber, energy, and freight costs, partially offset by lower prices and mix in containerboard and corrugated products. In 2016, gross profit included special items of $5 million for facility closure and acquisition-related costs, compared to $9 million in 2015, most of which related to incremental depreciation expense related to changing the estimated useful lives of assets in connection with our DeRidder mill restructuring. Excluding special items, gross profit increased $64 million in 2016, compared with 2015.

Selling, General, and Administrative Expenses

Selling, general, and administrative expenses increased $20 million, or 4.4%, in 2016, compared with 2015. The increase in 2016 was due primarily to higher administrative costs of $16 million corresponding to the TimBar and Columbus Container, Inc., acquisitions.

Other Expense, Net

Other expense, net, in 2016 was $24 million, compared with $7 million during 2015. Other expense in 2016 included $9 million of facility closure costs, $9 million of asset disposal costs, and $3 million of acquisition-related costs, among other miscellaneous expense items. Other expense in 2015 included $14 million of asset disposal costs and $13 million of Boise integration-related and other costs, partially offset by $7 million of income related to the DeRidder restructuring, a $7 million gain on the sale of our St. Helens paper mill site, and $4 million of income from a refundable state tax credit received related to our investments and the jobs retained at our DeRidder mill, among other miscellaneous income and expense items. We discuss these items in more detail in Note 5, Other Expense, Net of the Condensed Notes to the Consolidated Financial Statements in "Part II, Item 8. Financial Statements" of this Form 10-K.

Income from Operations

Income from operations increased $30 million, or 4.0%, for the year ended December 31, 2016, compared with 2015. Our 2016 income from operations included $19 million of expense from special items, compared with $9 million of expense from special items in 2015. Special items for 2016 included $11 million of facility closure costs related to corrugated manufacturing facilities and a paper distribution center, $4 million of TimBar and Columbus Container acquisition-related costs, $3 million related to shutdown of market pulp operations at our Wallula mill, and $1 million related to our withdrawal from a multiemployer pension plan for one of our corrugated products facilities. Special items for 2015 included $14 million of Boise acquisition-related expense, $2 million of expense related to restructuring the DeRidder mill, partially offset by $7 million gain on the sale of our St. Helens paper mill site. Excluding special items, income from operations increased $41 million in 2016, compared with 2015. The increase was driven primarily by higher containerboard and corrugated products volumes and lower operating costs, partially offset by lower prices and mix in containerboard and corrugated products.

Packaging. Segment income from operations decreased $4 million, or 0.5%, to $711 million, compared with $715 million in 2015. The decrease is primarily related to lower domestic containerboard and corrugated products prices and mix ($48 million), lower export containerboard prices ($12 million), higher labor costs ($12 million), greater expense for special items in 2016 compared to 2015 ($8 million), higher depreciation expense ($5 million), a 2015 state tax credit related to investments and jobs retained at our DeRidder mill ($4 million), and other items that were individually insignificant. These items were partially offset by higher volumes ($34 million), and lower freight ($19 million), mill outage ($14 million), energy ($13 million), and fiber ($9 million) costs. Special items in 2016 included $9 million of facility closure costs, $4 million of TimBar and Columbus Container acquisition-related costs, and $1 million related to our withdrawal from a multiemployer pension plan for one of our corrugated products facilities. Special items in 2015 included $4 million of Boise integration-related costs and $2 million of DeRidder restructuring charges.

Paper. Segment income from operations increased $26 million, or 22.8%, to $138 million, compared with $113 million for 2015. The increase is due primarily to lower fiber ($32 million), mill outage ($14 million), energy ($8 million), and labor ($3 million) costs, and higher paper prices and mix ($3 million), partially offset by lower volumes ($23 million), and greater expense for special items in 2016 compared to special items income in 2015 ($12 million). Special items expense in 2016 included $3 million related to the shutdown of market pulp operations at our Wallula mill and $2 million of facility closure costs in 2016. Special items income in 2015 included a $7 million gain on the sale of the St. Helens mill site in 2015.

Interest Expense, Net, and Income Taxes

Interest expense, net, was $92 million in 2016, compared with $86 million in 2015. The $6 million increase in interest expense was primarily due to higher interest rates on PCA's variable rate debt and additional interest due to the TimBar acquisition during 2016 compared to 2015.

During 2016, we recorded $239 million of income tax expense, compared with $228 million of expense during 2015. The effective tax rate for 2016 and 2015 was 34.7% and 34.3%, respectively.

Year Ended December 31, 2015, Compared with Year Ended December 31, 2014

The historical results of operations of PCA for the years ended December 31, 2015 and 2014 are set forth below (dollars in millions):

	Year Ended December 31		
	2015	2014	Change
Packaging	$ 4,477.3	$ 4,540.3	$ (63.0)
Paper	1,143.1	1,201.4	(58.3)
Corporate and other and eliminations	121.3	110.9	10.4
Net sales	$ 5,741.7	$ 5,852.6	$ (110.9)
Packaging	$ 714.9	$ 663.2	$ 51.7
Paper	112.5	135.4	(22.9)
Corporate and other	(77.4)	(95.9)	18.5
Income from operations	$ 750.0	$ 702.7	$ 47.3
Interest expense, net	(85.5)	(88.4)	2.9
Income before taxes	664.5	614.3	50.2
Income tax expense	(227.7)	(221.7)	(6.0)
Net income	$ 436.8	$ 392.6	$ 44.2
Net income excluding special items (a)	$ 442.6	$ 458.6	$ (16.0)
EBITDA (a)	$ 1,106.5	$ 1,083.7	$ 22.8
EBITDA excluding special items (a)	$ 1,106.2	$ 1,143.6	$ (37.4)

(a) See "Reconciliations of Non-GAAP Financial Measures to Reported Amounts" included in this Item 7 for a reconciliation of non-GAAP measures to the most comparable GAAP measure.

Net Sales

Net sales decreased $111 million, or 1.9%, to $5,742 million in 2015, compared with $5,853 million in 2014.

Packaging. Sales decreased $63 million, or 1.4%, to $4,477 million, compared with $4,540 million in 2014. Sales decreased $115 million due to the exit from our newsprint business in third quarter 2014 and the April 1, 2015, sale of our Hexacomb operations in Mexico and Europe. This decrease was partially offset by increased sales volumes in our corrugated products business ($17 million) and external containerboard sales ($31 million). Total corrugated products volume sold in 2015 increased approximately 1% over 2014. Our prices for corrugated products were approximately the same as 2014. With a full year of containerboard production on our D3 machine at our DeRidder, Louisiana mill, we increased our outside sales of containerboard, both domestic and export, by 52,000 tons compared with last year and we purchased 174,000 less tons of

containerboard from the outside market in 2015. On average during the year, our export prices were down 7% compared with 2014, while pricing for domestic containerboard sales was flat with last year. Containerboard mill production in 2015 was 3,656,000 total tons, compared with 3,452,000 total tons in 2014.

Paper. Sales decreased $58 million, or 4.9%, to $1,143 million, compared with $1,201 million in 2014. The decrease was primarily due to unfavorable changes in sales prices and mix ($58 million).

Gross Profit

Gross profit decreased $22 million, or 1.7%, in 2015, compared with 2014. In 2015 and 2014, gross profit included expenses of $9 million and $58 million of special items, respectively, most of which related to incremental depreciation expense related to changing the estimated useful lives of assets in connection with our DeRidder mill restructuring. Excluding special items, gross profit decreased $71 million in 2015, compared with 2014. The decrease was primarily due to lower paper prices and changes in mix, lower export containerboard prices, and higher labor and benefit costs, partially offset by higher packaging sales volume and lower energy, chemical, and freight costs. Gross profit was 21.0% of net sales in both 2015 and 2014.

Selling, General, and Administrative Expenses

Selling, general, and administrative expenses decreased $18 million, or 3.9%, in 2015, compared with 2014. The decrease in 2015 was due primarily to lower administrative employee costs from the headcount reductions related to the Boise integration.

Other Expense, Net

Other expense, net, in 2015 was $7 million, compared with $57 million during 2014. Other expense in 2015 included $14 million of asset disposals and write-off charges and $13 million of Boise integration-related and other costs, partially offset by $7 million of income, net of expenses, related to the DeRidder restructuring, a $7 million gain on the sale of our St. Helens paper mill site, and $4 million of income from a refundable state tax credit received related to our investments and the jobs retained at our DeRidder mill, among other miscellaneous income and expense items. Other expense, net, in 2014 included $20 million of Boise integration-related and other costs, $18 million of costs for the settlement of the Kleen Products LLC v Packaging Corp. of America et al class action lawsuit, $10 million of asset disposals and write-off charges, and $7 million of DeRidder restructuring charges.

Income from Operations

Income from operations increased $47 million, or 6.7%, for the year ended December 31, 2015, compared with 2014. Our 2015 income from operations included $9 million of expense from special items, compared with $102 million of expense from special items in 2014. See "Reconciliations of Non-GAAP Financial Measures to Reported Amounts" in this Item 7 for more information on special items. Excluding special items, income from operations decreased $46 million in 2015, compared with 2014. The decrease in income from operations, excluding special items, was driven primarily by lower gross profit as described above, partially offset by a decrease in employee administrative costs and a $4 million state tax credit related to investments and jobs retained at our DeRidder mill.

Packaging. Segment income from operations increased $52 million, or 7.8%, to $715 million, compared with $663 million in 2014. The increase in income from operations is primarily related to lower expense from special items in 2015 compared to 2014 ($65 million), higher volumes ($26 million) and lower energy costs ($24 million), partially offset by higher labor and benefit costs ($20 million), lower export containerboard prices ($13 million), higher annual outage costs due mostly to the first quarter extended annual outage at our DeRidder mill ($9 million), increased depreciation ($9 million), freight ($8 million), and fiber ($5 million) costs. Special items in 2015 included restructuring costs at our mill in DeRidder, Louisiana of $2 million and integration-related and other costs relating to the Boise acquisition of $4 million, compared with $66 million and $5 million, respectively, in 2014.

Paper. Segment income from operations decreased $23 million, or 16.9%, to $112 million, compared with $135 million for 2014. The decrease in income from operations is due primarily to lower white paper prices and mix ($58 million), partially offset by lower freight ($11 million), chemical ($10 million), and energy costs ($9 million), and special item income ($7 million) in 2015 related to the gain on the sale of our paper mill site in St. Helens, Oregon, where we ceased paper production in 2012. There were no special items in 2014.

Interest Expense, Net, and Income Taxes

Interest expense, net, was $85 million in 2015, compared with $88 million in 2014. Interest expense in 2014 included $2 million of expense related to the write-off of deferred financing costs in connection with the refinancing of debt.

During 2015, we recorded $228 million of income tax expense, compared with $222 million of expense during 2014. The effective tax rate for 2015 and 2014 was 34.3% and 36.1%, respectively. The decrease in our effective tax rate in 2015 was primarily due to an increased domestic manufacturing deduction resulting from less tax net operating losses remaining from the acquisition of Boise Inc.

Liquidity and Capital Resources

Sources and Uses of Cash

Our primary sources of liquidity are net cash provided by operating activities and available borrowing capacity under our revolving credit facility. We ended the year with $239 million of cash and $325 million of unused borrowing capacity under the revolving credit facility, net of letters of credit. Currently, our primary uses of cash are for operations, capital expenditures, acquisitions, debt service (including voluntary payments of debt), declared common stock dividends and share repurchases. We believe that net cash generated from operating activities, cash on hand, available borrowings under our revolving credit facility and available capital through access to capital markets will be adequate to meet our liquidity and capital requirements, including payments of any declared common stock dividends, for the foreseeable future. As our debt or credit facilities become due, we will need to repay, extend or replace such facilities. Our ability to do so will be subject to future economic conditions and financial, business, and other factors, many of which are beyond our control.

Below is a summary table of our cash flows, followed by a discussion of our sources and uses of cash through operating activities, investing activities, and financing activities (dollars in millions):

	Year Ended December 31		
	2016	2015	2014
Net cash provided by (used for):			
Operating activities	$ 801.2	$ 762.6	$ 736.1
Investing activities	(769.6)	(298.1)	(451.1)
Financing activities	23.5	(405.2)	(351.1)
Net increase (decrease) in cash and cash equivalents	$ 55.1	$ 59.3	$ (66.1)

Operating Activities

2016

During 2016, net cash provided by operating activities was $801 million, compared with $763 million for 2015, an increase of $38 million. Cash from operations excluding changes in cash used for operating assets and liabilities decreased $31 million. The decrease was primarily driven by 2016 cash contributions of $57 million to our pension plans, partially offset by record earnings in 2016. The remaining $69 million increase from changes in cash provided by operating assets and liabilities was primarily due higher accounts payable levels in 2016 compared to 2015 due to the timing of payments; lower required cash tax payments in 2016 resulting from utilization of prior year overpayments; and an increase in accrued liabilities due primarily to higher compensation and benefits accruals. These changes were partially offset by larger inventory prebuild for our first quarter 2017 planned maintenance outages and an increase in accounts receivable related to differences in the timing of collections of receivables. Cash requirements for operating activities are subject to PCA's operating needs and the timing of collection of receivables and payments of payables and expenses.

2015

During 2015, net cash provided by operating activities was $763 million, compared with $736 million for 2014, an increase of $27 million. Cash from operations excluding changes in cash used for operating assets and liabilities decreased $1 million. The remaining $28 million increase from changes in cash used for operating assets and liabilities was primarily related

to no inventory prebuild for our first quarter 2016 planned maintenance outages due to additional capacity added at our reconfigured DeRidder, Louisiana mill and a decrease in accounts receivable related to differences in the timing of collections of receivables. These changes were partially offset by higher required cash tax payments resulting from less net operating loss utilization and a decrease in accrued liabilities due primarily to lower compensation and benefits accruals. Cash requirements for operating activities are subject to PCA's operating needs and the timing of collection of receivables and payments of payables and expenses.

Investing Activities

2016

We used $770 million for investing activities in 2016, compared with $298 million in 2015. In 2016, we spent $274 million for capital investments, compared with $314 million in 2015. During 2016, we spent $485 million, net of cash acquired, for the TimBar and Columbus Container acquisitions. In April of 2015, we received $23 million of cash proceeds for the sale of our Hexacomb corrugated manufacturing operations in Mexico and Europe.

The details of capital expenditures for property and equipment, excluding acquisitions, by segment for the years ended December 31, 2016, 2015, and 2014, are included in the table below (dollars in millions).

	Year Ended December 31		
	2016	2015	2014
Packaging	$ 239.9	$ 250.3	$ 362.1
Paper	31.6	58.5	51.7
Corporate and Other	2.8	5.7	6.4
	$ 274.3	$ 314.5	$ 420.2

We expect capital investments in 2017 to be between $310 million and $325 million, including capital required for Boiler MACT spending, but excluding any acquisitions. These expenditures could increase or decrease as a result of a number of factors, including our financial results, future economic conditions, and our regulatory compliance requirements. We currently estimate capital expenditures to comply with Boiler MACT regulations (as discussed below under "Environmental Matters") in 2017 of up to $1 million and we expect other environmental capital expenditures of about $7 million in 2017. Our estimated environmental expenditures could vary significantly depending upon the enactment of new environmental laws and regulations, including those related to greenhouse gas emissions and industrial boilers. For additional information, see "Environmental Matters" in this Management's Discussion and Analysis of Financial Condition and Results of Operations.

At December 31, 2016, PCA had commitments for capital expenditures of $95 million. PCA believes that cash-on-hand combined with cash flow from operations will be sufficient to fund these commitments.

2015

We used $298 million for investing activities in 2015, compared with $451 million in 2014. In 2015, we spent $315 million for capital investments, compared with $420 million in 2014. The decrease in capital spending was due primarily to $104 million invested in 2014 for the conversion of the No. 3 newsprint machine at our DeRidder, Louisiana mill to produce containerboard. We received $23 million of cash proceeds for the sale of our Hexacomb corrugated manufacturing operations in Mexico and Europe during 2015.

Financing Activities

2016

In 2016, net cash used for financing activities changed by $429 million to a source of $24 million, compared with a use of $405 million in 2015. The change primarily related to proceeds from the issuance of a new $385 million unsecured five-year term loan facility, which PCA fully borrowed to finance its acquisition of TimBar Corporation, and lower repurchases of PCA common stock in 2016 compared to 2015. In 2016, we made $37 million of principal payments on long-term debt and capital leases, compared with $48 million of payments in 2015. During 2016, we paid $100 million to repurchase 1,987,187 shares of common stock, and we withheld 172,438 shares from vesting equity awards to cover employee tax liabilities of $11 million, compared with $155 million of share repurchases and $9 million of shares withheld on equity award vesting in 2015. We paid $216 million of dividends in 2016, compared with $201 million of dividends in 2015. On August 31, 2016, PCA's Board of Directors increased the regular quarterly cash dividend to $0.63 per share from the previous $0.55 per share, beginning with the dividend paid on September 15, 2016.

On February 25, 2016, PCA announced that its Board of Directors authorized the repurchase of $200 million of the Company's outstanding common stock. At the time of announcement, there was no remaining authority under previously announced programs. Repurchases may be made from time to time in the open market or privately negotiated transactions in accordance with applicable securities regulations. The timing and amount of repurchases will be determined by the Company in its discretion based on factors such as PCA's stock price and market and business conditions.

For more information about our debt, commitments, and treasury lock derivative instruments, see Note 9, Debt, Note 13, Derivative Instruments and Hedging Activities, and Note 18, Commitments, Guarantees, Indemnifications, and Legal Proceedings, respectively, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of this Form 10-K.

2015

In 2015, we used $405 million for financing activities, compared with $351 million in 2014. The increase in cash used for financing activities primarily relates to share repurchases and increased dividend payments, partially offset by a decrease in debt repayments, net of proceeds received. In 2015, we made $48 million of principal payments on long-term debt and capital leases, compared with $194 million of payments, net of debt proceeds received, in 2014. In 2014, we also paid $3 million of financing costs. We paid $201 million of dividends in 2015, compared with $157 million of dividends in 2014. On February 26, 2015, PCA's Board of Directors increased the regular quarterly cash dividend to $0.55 per share from the previous $0.40 per share dividend, beginning with the dividend paid on April 15, 2015. During 2015, we paid $155 million to repurchase 2,326,493 shares of common stock, and we withheld 129,983 shares from vesting equity awards to cover employee tax liabilities of $9 million, compared with no share repurchases and $13 million of shares withheld on equity award vesting in 2014. Tax benefits from share-based awards and proceeds from the exercise of stock options contributed $6 million in 2015, compared with $16 million in 2014.

Commitments

Contractual Obligations

The table below sets forth our enforceable and legally binding obligations as of December 31, 2016, for the categories described below. Some of the amounts included in the table are based on management's estimates and assumptions about these obligations, including their duration, the possibility of renewal, anticipated actions by third parties, and other factors. Because these estimates and assumptions are necessarily subjective, our actual payments may vary from those reflected in the table. Purchase orders made in the ordinary course of business are excluded from the table below. Any amounts for which we are liable under purchase orders are reflected on the Consolidated Balance Sheets as accounts payable and accrued liabilities (dollars in millions):

	Payments Due by Period				
	Total	**Less Than 1 Year**	**1-3 Years**	**3-5 Years**	**More Than 5 Years**
Term loan, due October 2020	$ 630.5	$ 6.5	$ 13.0	$ 611.0	$ —
Term loan, due August 2021	380.2	19.3	38.5	322.4	—
6.50% Senior Notes, due March 2018	150.0	—	150.0	—	—
3.90% Senior Notes, due June 2022	400.0	—	—	—	400.0
4.50% Senior notes, due November 2023	700.0	—	—	—	700.0
3.65% Senior notes, due September 2024	400.0	—	—	—	400.0
Total short-term and long-term debt (a)	2,660.7	25.8	201.5	933.4	1,500.0
Interest on long-term debt (b)	515.3	94.5	170.0	146.3	104.5
Capital lease obligations, including interest	31.2	2.7	5.4	5.4	17.7
Operating leases (c)	254.3	64.4	96.2	45.3	48.4
Capital commitments	94.7	94.7	—	—	—
Purchase commitments:					
Raw materials (d)	201.3	61.2	55.3	39.1	45.7
Energy related (e)	38.7	32.2	6.5	—	—
Other liabilities reflected on our Consolidated Balance Sheet (f):					
Compensation and benefits (g)	359.7	45.0	97.5	112.0	105.2
Other (h)	71.8	18.5	7.1	3.8	42.4
	$ 4,227.7	$ 439.0	$ 639.5	$ 1,285.3	$ 1,863.9

(a) The table assumes our long-term debt is held to maturity and includes the current portion of long-term debt. See Note 9, Debt, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of this Form 10-K. Amounts are reported gross and do not include unamortized debt discounts of $2.5 million at December 31, 2016.

(b) Amounts represent estimated future interest payments as of December 31, 2016, assuming our long-term debt is held to maturity and using interest rates in effect at December 31, 2016. See "Item 7A. Quantitative and Qualitative Disclosures About Market Risk" for the impact of changes in interest rates on PCA's future cash flows.

(c) We enter into operating leases in the normal course of business. We lease some of our operating facilities, as well as other property and equipment, under operating leases. Some lease agreements provide us with the option to renew the lease or purchase the leased property. Our operating lease obligations would change if we exercised these renewal options and/or if we entered into additional operating lease agreements.

(d) Included among our raw materials purchase obligations are contracts to purchase approximately $171.7 million of wood fiber. Purchase prices under most of these agreements are set quarterly, semiannually, or annually based on regional market prices, and the estimate is based on contract terms or first quarter 2017 pricing. Except for deposits required pursuant to wood supply contracts, these obligations are not recorded in our consolidated financial statements until contract payment terms take effect. Our log, fiber, and wood chip obligations are subject to change based on, among other things, the effect of governmental laws and regulations, disruptions to our manufacturing operations, and log and fiber availability.

(e) We enter into utility contracts for the purchase of electricity and natural gas. We also purchase these services under utility tariffs. The contractual and tariff arrangements include multiple-year commitments and minimum annual purchase requirements. Our payment obligations were based upon prices in effect on December 31, 2016, or contract language, if available.

(f) Long-term deferred income taxes of $334.7 million and unrecognized tax benefits of $6.3 million, including interest and penalties, are excluded from this table, because the timing of their future cash outflows are uncertain.

(g) Amounts primarily consist of pension and postretirement obligations, including current portion of $2.5 million. We have minimum qualified pension contributions of approximately $8 million in 2017. See Note 10, Employee Benefit Plans and Other Postretirement Benefits, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of this Form 10-K, for additional information.

(h) Amounts primarily consist of workers compensation, environmental, and asset retirement obligations.

Off-Balance-Sheet Arrangements

The Company does not have any off-balance sheet arrangements as of December 31, 2016.

Inflation and Other General Cost Increases

We are subject to both contractual, inflation, and other general cost increases. If we are unable to offset these cost increases by price increases, growth, and/or cost reductions in our operations, these inflation and other general cost increases could have a material adverse effect on our operating cash flows, profitability, and liquidity.

In 2016, our total company costs including cost of sales (COS) and selling, general, and administrative expenses (SG&A) was $5.0 billion, and excluding non-cash costs (depreciation, pension and postretirement expense, and share-based compensation expense) was $4.6 billion. A 1% increase in COS and SG&A costs would increase costs by $50 million and cash costs by $46 million.

Certain items of product input costs have historically been subject to more cost volatility including fiber, purchased energy, and chemicals.

Energy

In 2016, our mills, including both packaging and paper mills, consumed about 89 million MMBTU’s of fuel, including internally generated and externally purchased, to produce both steam and electricity. The following table for 2016 provides the total MMBTU's purchased externally by fuel type each quarter and the average cost per MMBTU by fuel type for the year. Our mills represent about 90% of our total purchased fuel costs. The cost per MMBTU includes the cost of the fuel plus our transportation and delivery costs.

	2016 Fuel Purchased (millions of MMBTU's)					2016 Avg.
Fuel Type	**First Quarter**	**Second Quarter**	**Third Quarter**	**Fourth Quarter**	**Full Year**	**Cost / MMBTU**
Natural gas	6.86	6.09	5.71	6.36	25.02	$ 3.08
Purchased bark	2.31	1.99	1.87	2.34	8.51	2.32
Other purchased fuels	0.45	0.39	0.40	0.31	1.55	3.81
Total Mills	9.62	8.47	7.98	9.01	35.08	$ 2.93

In addition, the mills purchased 21.59 million CkWh (hundred kilowatt-hours) of purchased electricity in 2016. The purchases by quarter and the average cost per CkWh were as follows:

	2016 Purchased Electricity (millions of CkWh)					2016 Avg.
	First Quarter	**Second Quarter**	**Third Quarter**	**Fourth Quarter**	**Full Year**	**Cost / CkWh**
Purchased electricity	5.12	5.17	5.67	5.63	21.59	$ 5.49

Environmental Matters

Environmental compliance requirements are a significant factor affecting our business. We employ processes in the manufacture of containerboard, paper, and pulp, which result in various discharges, emissions and waste disposal. These processes are subject to numerous federal, state, local and foreign environmental laws and regulations. We operate and expect to continue to operate, under environmental permits and similar authorizations from various governmental authorities that regulate such discharges, emissions, and waste disposal. The most significant of these laws affecting the Company are:

- Resource Conservation and Recovery Act (RCRA);
- Clean Water Act (CWA);
- Clean Air Act (CAA);
- The Emergency Planning and Community Right-to-Know-Act (EPCRA);
- Toxic Substance Control Act (TSCA); and
- Safe Drinking Water Act (SDWA).

We believe that we are currently in material compliance with these and all applicable environmental rules and regulations. Because environmental regulations are constantly evolving, the Company has incurred, and will continue to incur, costs to maintain compliance with these and other environmental laws. The Company works diligently to anticipate and budget for the impact of applicable environmental regulations, and does not currently expect that future environmental compliance obligations will materially affect its business or financial condition. For the years ended December 31, 2016, 2015, and 2014, we spent $44 million, $43 million, and $44 million, respectively, to comply with the requirements of these and other environmental laws. Additionally, we had $8 million of environmental capital expenditures in 2016, $16 million in 2015, and $29 million in 2014.

In January 2013, the U.S. Environmental Protection Agency (the "EPA") established a three-year deadline for compliance with the Boiler MACT regulations, establishing air emissions standards and certain other requirements for industrial boilers. PCA's compliance actions involved modifying or replacing certain boilers and PCA was set to achieve compliance by the deadline. On July 29, 2016, the U.S. Court of Appeals for the District of Columbia Circuit issued a ruling on the consolidated cases challenging Boiler MACT. The court vacated key portions of the rule, including emission limits for certain subcategories of solid fuel boilers, and remanded issues to the EPA for further rulemaking. At this time, we cannot predict with certainty how the recent decision will impact our existing Boiler MACT compliance efforts or whether we will incur additional costs to comply with any revised standards.

As is the case with any industrial operation, PCA has, in the past, incurred costs associated with the remediation of soil or groundwater contamination, as required by the federal Comprehensive Environmental Response, Compensation and Liability Act, commonly known as the federal "Superfund" law, and analogous state laws. Cleanup requirements arise with respect to properties the Company currently owns or operates, former facilities and off-site facilities where the Company has disposed of hazardous substances. As part of the sale to PCA of the containerboard and corrugated products business of Pactiv Corporation in April 1999, Pactiv agreed to retain all liability for all former facilities and all sites associated with pre-closing off-site waste disposal. Pactiv also retained environmentally impaired real property in Filer City, Michigan unrelated to current mill operations. In addition, OfficeMax (now an indirect, wholly owned subsidiary of Office Depot) retains responsibility for certain environmental liabilities related to some of the businesses, facilities, and assets we acquired from Boise. Generally, this responsibility relates to hazardous substance releases and other environmental incidents that arose before 2004. Some of these liabilities could be significant; however, Office Depot may not have sufficient funds to satisfy its indemnification obligations, and in some cases, we may not be entitled to such indemnification.

Because liability for remediation costs under environmental laws is strict, meaning that liability is imposed without fault, joint and several, meaning that liability is imposed on each party without regard to contribution, and retroactive, PCA could receive notifications of cleanup liability in the future and this liability could be material. From 2006 through 2015, there were no significant environmental remediation costs at PCA's mills and corrugated plants. As of December 31, 2016, we maintained an environmental reserve of $25 million relating to on-site landfills and surface impoundments as well as ongoing and anticipated remedial projects. The Company believes that it is not reasonably possible that future environmental expenses above the $25 million accrued at December 31, 2016, will have a material impact on its financial condition, results of operations, and cash flows.

While legislation regarding the regulation of greenhouse gas emissions has been proposed at the federal level, it is uncertain whether such legislation will be passed and, if so, what the breadth and scope of such legislation will be. The result of the regulation of greenhouse gas emissions could be an increase in our future environmental compliance costs, through caps, taxes or additional capital expenditures to modify facilities, which may be material. However, climate change legislation and the resulting future energy policy could also provide us with opportunities if the use of renewable energy is encouraged. We currently self-generate a significant portion of our power requirements at our mills using bark, black liquor and biomass as fuel, which are derived from renewable resources. While we believe we are well-positioned to take advantage of any renewable energy incentives, it is uncertain what the ultimate costs and opportunities of any climate change legislation will be and how our business and industry will be affected.

Critical Accounting Policies and Estimates

Management’s discussion and analysis of financial condition and results of operations are based upon the Company’s consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States of America. The preparation of these financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and related disclosures of contingent assets and liabilities. On an ongoing basis, PCA evaluates its estimates, including those related to business combinations, goodwill and intangible assets, pensions and other postretirement benefits, environmental liabilities, income taxes, and long-lived asset impairment, among others. PCA bases its estimates on historical experience and on various other assumptions that are believed to be reasonable under the circumstances, the results of which form the basis for making judgments about the carrying values of assets and liabilities that are not readily apparent from other sources. Actual results may differ from these estimates under different assumptions or conditions.

Critical accounting estimates are those that are most important to the portrayal of our financial condition and results. These estimates require management's most difficult, subjective, or complex judgments. We review the development, selection, and disclosure of our critical accounting estimates with the Audit Committee of our board of directors. The Company believes that of its significant accounting policies, the following involve a higher degree of judgment and/or complexity:

Pensions

The Company accounts for defined benefit pension plans in accordance with Accounting Standards Codification (ASC) 715, "Compensation - Retirement Benefits." The calculation of pension expense and pension liabilities requires decisions about a number of key assumptions that can significantly affect expense and liability amounts, including discount rates, expected return on plan assets, expected rate of compensation increases, longevity and service lives of participants, expected contributions, and other factors. The pension assumptions used to measure pension expense and liabilities are discussed in Note 10, Employee Benefit Plans and Other Postretirement Benefits.

We recognize the funded status of our pension plans on our Consolidated Balance Sheet and recognize the actuarial and experience gains and losses and the prior service costs and credits as a component of "Accumulated Other Comprehensive Loss" in our Consolidated Statement of Changes in Stockholders' Equity. Actual results that differ from assumptions are accumulated and amortized over future periods and, therefore, generally affect recognized expense in future periods. At December 31, 2016, we had approximately $121.5 million of actuarial losses and prior service costs, net of tax, recorded in "Accumulated other comprehensive loss" on our Consolidated Balance Sheet. Accumulated losses in excess of 10% of the greater of the projected benefit obligation or the market-related value of assets will be recognized on a straight-line basis over the average remaining service period of active employees in PCA plans (which is between seven to ten years) and over the average remaining lifetime of inactive participants of Boise plans (which is between 26 and 29 years), to the extent that losses are not offset by gains in subsequent years. While we believe that the assumptions used to measure our pension obligations are reasonable, differences in actual experience or changes in assumptions may materially affect our pension obligations and future expense.

We believe that the accounting estimate related to pensions is a critical accounting estimate because it is highly susceptible to change from period to period. As discussed above, the future effects of pension plans on our financial position and results of operations will depend on economic conditions, employee demographics, mortality rates, retirement rates, investment performance, and funding decisions, among other factors. The following table presents selected assumptions used and expected to be used in the measurement of pension expense in the following periods (dollars in millions):

	Year Ending December 31, 2017	Year Ended December 31	
		2016	2015
Pension expense	$ 25.3	$ 27.4	$ 31.3
Assumptions			
Discount rate	4.24%	4.49%	4.14%
Expected rate of return on plan assets	6.55%	6.57%	6.73%

A change of 0.25% in either direction to the discount rate or the expected rate of return on plan assets would have had the following effect on 2016 and 2017 pension expense (dollars in millions):

	Base Expense	Increase (Decrease) in Pension Expense (a)	
		0.25% Increase	0.25% Decrease
2016 Expense (b)			
Discount rate	$ 27.4	$ (2.6)	$ 3.1
Expected rate of return on plan assets	27.4	(1.9)	1.9
2017 Expense			
Discount rate	$ 25.3	$ (1.9)	$ 2.2
Expected rate of return on plan assets	25.3	(2.1)	2.1

(a) The sensitivities shown above are specific to 2016 and 2017. The sensitivities may not be additive, so the impact of changing multiple factors simultaneously cannot be calculated by combining the individual sensitivities shown.

(b) Beginning in 2016, we refined the method used to determine the service and interest cost components of our net periodic benefit cost. Previously, the cost was determined using a single weighted-average discount rate derived from the yield curve. Under the refined method, known as the spot rate approach, we use individual spot rates along the yield curve that correspond with the timing of each benefit payment. We believe this change provides a more precise measurement of service and interest costs by improving the correlation between projected cash outflows and corresponding spot rates on the yield curve. Compared to the previous method, the spot rate approach decreased the service and interest components of our benefit costs by about $8 million in 2016.

For more information related to our pension benefit plans, see Note 10, Employee Benefit Plans and Other Postretirement Benefits, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of this Form 10-K.

Goodwill Impairment

Goodwill represents the excess of the cost of an acquired business over the fair value of the identifiable tangible and intangible assets acquired and liabilities assumed in a business combination. At December 31, 2016, we had $737.9 million of goodwill, of which, during 2016, we recorded $157.3 million in connection with the acquisition of TimBar Corporation and $36.6 million in connection with the acquisition of Columbus Container, Inc. At December 31, 2016, we had $682.7 million and $55.2 million of goodwill recorded in our Packaging and Paper segments, respectively.

We maintain two reporting units for purposes of our goodwill impairment testing, Packaging and Paper, which are the same as our operating segments discussed in Note 17, Segment Information, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of this Form 10-K. We test goodwill for impairment annually in the fourth quarter or sooner if events or changes in circumstances indicate that the carrying value of the asset may exceed fair value.

Under ASC 350, “Intangibles - Goodwill and Other,” companies have the option of performing either a qualitative analysis or a quantitative analysis to test goodwill for possible impairment. The qualitative analysis is commonly referred to as "Step 0". The Step 0 assessment requires the evaluation of certain events and circumstances such as macroeconomic conditions, industry and market considerations, cost factors and overall financial performance, as well as company and reporting unit specific items. If, after assessing these qualitative factors, the Company determines that it is more likely than not that the carrying value of the reporting unit is less than its fair value, then no further testing is required. Otherwise, the Company would perform a quantitative analysis, also known as the two-step impairment analysis, below.

Step One of the analysis requires companies to compare the fair value of the reporting units to which goodwill was assigned to their respective carrying values. In calculating fair value, we use the income approach as our primary indicator of fair value. Under the income approach, we calculate the fair value of a reporting unit based on the present value of estimated future cash flows. These estimates are based on a number of factors including industry experience, business expectations and the economic environment. If the fair value exceeds the carrying value, no further work is required and no impairment loss is recognized. If the carrying value exceeds the fair value, the goodwill of the reporting unit is potentially impaired and the Company would then complete Step Two of the analysis in order to measure the impairment loss of the reporting unit. This step requires the determination of the fair value of all the individual assets and liabilities of the reporting unit as of the analysis date. Once these fair values have been determined, the implied fair value of the unit’s goodwill is calculated as the excess, if any, of the fair value of the reporting unit determined in Step One over the fair value of the net assets determined in Step Two. The carrying value of goodwill is then reduced to the implied value, or to zero if the fair value of the assets exceeds the fair value of the reporting unit, through an impairment charge.

During the annual goodwill impairment test, we assessed qualitative factors to determine whether it was more likely than not that the fair value of each reporting unit was less than its carrying value. Based on the results of the Step 0 goodwill impairment test, we determined that it was more likely than not that the carrying value was less than the fair value of the Packaging and Paper reporting units.

If management's estimates of future operating results materially change or if there are changes to other assumptions, the estimated fair value of our goodwill could change significantly. Such change could result in impairment charges in future periods, which could have a significant noncash impact on our operating results and financial condition. We cannot predict the occurrence of future events that might adversely affect the reported value of our goodwill. As additional information becomes known, we may change our estimates.

Long-Lived Asset Impairment

An impairment of a long-lived asset exists when the carrying value of an asset is not recoverable through future undiscounted cash flows from operations and when the carrying value of the asset exceeds its fair value. Long-lived asset impairment is a critical accounting estimate, as it is susceptible to change from period to period.

We review the carrying value of long-lived assets, including intangible assets, for impairment when events or changes in circumstances indicate that the carrying amount of assets may not be recoverable. For purposes of testing for impairment, we group our long-lived assets at the lowest level for which identifiable cash flows are largely independent of the cash flows from other assets and liabilities. Our asset groupings vary based on the related business in which the long-lived asset is employed and the interrelationship between those long-lived assets in producing net cash flows. Asset groupings could change in the future if changes in the operations of the business or business environment affect the way particular long-lived assets are employed or the interrelationships between assets. To estimate whether the carrying value of an asset or asset group is impaired, we estimate the undiscounted cash flows that could be generated under a range of possible outcomes. To measure future cash flows, we are required to make assumptions about future production volumes, future product pricing, and future expenses to be incurred. In addition, estimates of future cash flows may change based on the availability of fiber, environmental requirements, capital spending, and other strategic management decisions. We estimate the fair value of an asset or asset group based on quoted market prices for similar assets and liabilities or inputs that are observable either directly (Level 1 measurement) or indirectly (the amount for which the asset(s) could be bought or sold in a current transaction with a third party) when available (Level 2 measurement). When quoted market prices are not available, we use a discounted cash flow model to estimate fair value (Level 3 measurement).

We periodically assess the estimated useful lives of our assets. Changes in circumstances, such as changes to our operational or capital strategy, changes in regulation, or technological advances, may result in the actual useful lives differing

from our estimates. Revisions to the estimated useful lives of assets requires judgment and constitutes a change in accounting estimate, which is accounted for prospectively by adjusting or accelerating depreciation and amortization rates. In 2016, we recognized incremental depreciation expense of $2.9 million, primarily related to facilities closure costs and the Wallula mill restructuring. During the year ended December 31, 2015, we recognized $9.0 million of accelerated depreciation expense related to shortening the useful lives of assets at the DeRidder, Louisiana mill, which primarily related to the newsprint business we exited in 2014.

New and Recently Adopted Accounting Standards

For a listing of our new and recently adopted accounting standards, see Note 2, Summary of Significant Accounting Policies, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of this Form 10-K.

Reconciliations of Non-GAAP Financial Measures to Reported Amounts

Income from operations excluding special items, net income excluding special items, EBITDA, and EBITDA excluding special items are non-GAAP financial measures. Management excludes special items, as it believes that these items are not necessarily reflective of the ongoing operations of our business. These measures are presented because they provide a means to evaluate the performance of our segments and our Company on an ongoing basis using the same measures that are used by our management, because these measures assist in providing a meaningful comparison between periods and because these measures are frequently used by investors and other interested parties in the evaluation of companies and the performance of their segments. Any analysis of non-GAAP financial measures should be done in conjunction with results presented in accordance with GAAP. The non-GAAP measures are not intended to be substitutes for GAAP financial measures and should not be used as such. Reconciliations of the non-GAAP measures to the most comparable measure reported in accordance with GAAP for the years ended December 31, 2016, 2015, and 2014, follow (dollars in millions):

	Year Ended December 31					
	2016			2015		
	Income before Taxes	Income taxes	Net Income	Income before Taxes	Income Taxes	Net Income
As reported in accordance with GAAP	$ 688.5	$ (238.9)	$ 449.6	$ 664.5	$ (227.7)	$ 436.8
Special items:						
Facilities closure costs (a)	11.0	(3.9)	7.1	—	—	—
Acquisition-related costs (b)	4.5	(1.6)	2.9	—	—	—
Wallula mill restructuring (c)	2.7	(0.9)	1.8	—	—	—
Multiemployer pension withdrawal (d)	0.9	(0.3)	0.6	—	—	—
DeRidder restructuring (e)	—	—	—	2.0	(0.7)	1.3
Integration-related and other costs (f)	—	—	—	13.4	(4.5)	8.9
Sale of St. Helens paper mill site (g)	—	—	—	(6.7)	2.3	(4.4)
Total special items	19.1	(6.7)	12.4	8.7	(2.9)	5.8
Excluding special items	$ 707.6	$ (245.6)	$ 462.0	$ 673.2	$ (230.6)	$ 442.6

	Year Ended December 31		
	2014		
	Income before Taxes	Income Taxes	Net Income
As reported in accordance with GAAP	$ 614.3	$ (221.7)	$ 392.6
Special items:			
DeRidder restructuring (e)	65.8	(23.7)	42.1
Integration-related and other costs (f)	19.9	(7.2)	12.7
Class action lawsuit settlement (h)	17.6	(6.4)	11.2
Total special items	103.3	(37.3)	66.0
Excluding special items	$ 717.6	$ (259.0)	$ 458.6

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(a) Includes closure costs related to corrugated facilities and a paper products facility.

(b) Includes acquisition-related costs for the TimBar Corporation and Columbus Container, Inc. acquisitions.

(c) Includes costs related to ceased softwood market pulp operations at our Wallula, Washington mill and the permanent shutdown of the No.1 machine.

(d) Includes costs related to our withdrawal from a multiemployer pension plan for one of our corrugated products facilities.

(e) 2015 and 2014 include amounts from restructuring activities at our mill in DeRidder, Louisiana including costs related to the conversion of the No. 3 newsprint machine to containerboard, our exit from the newsprint business, and other improvements.

(f) 2015 and 2014 include Boise acquisition integration-related and other costs, primarily for severance, retention, travel, and professional fees. 2014 also includes $1.5 million of expense related to the write-off of deferred financing costs in connection with the debt refinancing.

(g) In September 2015, we sold the remaining land, buildings, and equipment at our paper mill site in St. Helens, Oregon where we ceased paper production in December 2012. We recorded a $6.7 million gain on the sale.

(h) Includes $17.6 million of costs for the settlement of the *Kleen Products LLC v Packaging Corp. of America et al* class action lawsuit. See Note 18, Commitments, Guarantees, Indemnifications, and Legal Proceedings, for more information.

The following table reconciles net income (loss) to EBITDA and EBITDA excluding special items for the periods indicated (dollars in millions):

	Year Ended December 31				
	2016	**2015**	**2014**	**2013**	**2012**
Net income	$ 449.6	$ 436.8	$ 392.6	$ 441.3	$ 160.2
Interest expense, net	91.8	85.5	88.4	58.3	62.9
Provision (benefit) for income taxes	238.9	227.7	221.7	(17.7)	214.5
Depreciation, amortization, and depletion	358.0	356.5	381.0	201.8	170.8
EBITDA	$ 1,138.3	$ 1,106.5	$ 1,083.7	$ 683.7	$ 608.4
Special items:					
Facilities closure costs	$ 10.2	$ —	$ —	$ —	$ 2.0
Acquisition-related costs	4.5	—	—	17.2	—
Wallula mill restructuring	0.6	—	—	—	—
Multiemployer pension withdrawal	0.9	—	—	—	—
DeRidder restructuring	—	(7.0)	23.9	—	—
Integration-related and other costs	—	13.4	18.4	17.4	—
Sale of St. Helens paper mill site	—	(6.7)	—	—	—
Class action lawsuit settlement	—	—	17.6	—	—
Acquisition inventory step-up	—	—	—	21.5	—
Pension curtailment charges	—	—	—	10.9	—
Alternative energy tax credits	—	—	—	—	(95.5)
EBITDA excluding special items	$ 1,154.5	$ 1,106.2	$ 1,143.6	$ 750.7	$ 514.9

The following table reconciles segment income (loss) to EBITDA and EBITDA excluding special items (dollars in millions):

	Year Ended December 31		
	2016	2015	2014
Packaging			
Segment income	$ 711.1	$ 714.9	$ 663.2
Depreciation, amortization, and depletion	293.3	297.3	323.0
EBITDA	1,004.4	1,012.2	986.2
Facilities closure costs	9.3	—	—
Acquisition-related costs	4.2	—	—
Multiemployer pension withdrawal	0.9	—	—
DeRidder restructuring	—	(7.0)	23.9
Integration-related and other costs	—	4.1	4.9
EBITDA excluding special items	**$ 1,018.8**	**$ 1,009.3**	**$ 1,015.0**
Paper			
Segment income	$ 138.1	$ 112.5	$ 135.4
Depreciation, amortization, and depletion	59.6	54.9	50.6
EBITDA	197.7	167.4	186.0
Wallula mill restructuring	0.6	—	—
Facilities closure costs	0.9	—	—
Sale of St. Helens paper mill site	—	(6.7)	—
EBITDA excluding special items	**$ 199.2**	**$ 160.7**	**$ 186.0**
Corporate and Other			
Segment income (loss)	$ (68.9)	$ (77.4)	$ (95.9)
Depreciation, amortization, and depletion	5.1	4.3	7.4
EBITDA	(63.8)	(73.1)	(88.5)
Acquisition-related costs	0.3	—	—
Integration-related and other costs	—	9.3	13.5
Class action lawsuit settlement	—	—	17.6
EBITDA excluding special items	**$ (63.5)**	**$ (63.8)**	**$ (57.4)**
EBITDA	**$ 1,138.3**	**$ 1,106.5**	**$ 1,083.7**
EBITDA excluding special items	**$ 1,154.5**	**$ 1,106.2**	**$ 1,143.6**

Item 7A. ***QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK***

PCA is exposed to the impact of interest rate changes and changes in the market value of its financial instruments. PCA periodically enters into derivatives in order to minimize these risks, but not for trading purposes. We were not party to any derivative-based arrangements at December 31, 2016. For a discussion of derivatives and hedging activities, see Note 13, Derivative Instruments and Hedging Activities, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of this Form 10-K.

The interest rates on approximately 62% of PCA's debt are fixed. A one percent increase in interest rates related to variable rate debt would have resulted in an increase in interest expense and a corresponding decrease in income before taxes of $10.1 million annually.

Item 8. ***FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA***

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REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

The Board of Directors and Stockholders
Packaging Corporation of America:

We have audited the accompanying consolidated balance sheets of Packaging Corporation of America and subsidiaries as of December 31, 2016 and 2015 and the related consolidated statements of income and comprehensive income, changes in stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2016. These consolidated financial statements are the responsibility of the Company's management. Our responsibility is to express an opinion on these consolidated 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 consolidated financial statements referred to above present fairly, in all material respects, the financial position of Packaging Corporation of America and subsidiaries as of December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the years in the three-year period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Packaging Corporation of America's internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO), and our report dated February 28, 2017 expressed an unqualified opinion on the effectiveness of the Company's internal control over financial reporting.

/s/ KPMG LLP

Chicago, Illinois
February 28, 2017

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM ON INTERNAL CONTROL OVER FINANCIAL REPORTING

The Board of Directors and Stockholders
Packaging Corporation of America:

We have audited Packaging Corporation of America’s internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Packaging Corporation of America’s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management's Report on Internal Control Over Financial Reporting included in Item 9A. 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, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audit also included 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, Packaging Corporation of America maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control-Integrated Framework (2013)* issued by COSO.

The Company acquired TimBar Corporation and Columbus Container, Inc. during 2016 and management excluded from its assessment of the effectiveness of the Company’s internal control over financial reporting as of December 31, 2016, TimBar Corporation and Columbus Container, Inc.’s internal control over financial reporting. As of and for the year ended December 31, 2016, TimBar Corporation accounted for approximately 7% of the Company’s consolidated total assets and 2% of consolidated net sales, and Columbus Container, Inc. accounted for approximately 2% of the Company’s consolidated total assets and less than 1% of consolidated net sales. Our audit of internal control over financial reporting of the Company also excluded an evaluation of the internal control over financial reporting of TimBar Corporation and Columbus Container, Inc.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Packaging Corporation of America as of December 31, 2016 and 2015, and the related consolidated statements of income and comprehensive income, changes in stockholders’ equity, and cash flows for each of the years in the three-year period ended December 31, 2016, and our report dated February 28, 2017 expressed an unqualified opinion on those consolidated financial statements.

/s/ KPMG LLP

Chicago, IL
February 28, 2017

Packaging Corporation of America

Consolidated Statements of Income and Comprehensive Income

(dollars in millions, except per-share data)

	Year Ended December 31		
	2016	**2015**	**2014**
Statements of Income:			
Net sales	$ 5,779.0	$ 5,741.7	$ 5,852.6
Cost of sales	(4,503.3)	(4,533.7)	(4,623.1)
Gross profit	1,275.7	1,208.0	1,229.5
Selling, general, and administrative expenses	(471.1)	(451.3)	(469.5)
Other expense, net	(24.3)	(6.7)	(57.3)
Income from operations	780.3	750.0	702.7
Interest expense, net	(91.8)	(85.5)	(88.4)
Income before taxes	688.5	664.5	614.3
Provision for income taxes	(238.9)	(227.7)	(221.7)
Net income	$ 449.6	$ 436.8	$ 392.6
Net income per common share:			
Basic	$ 4.76	$ 4.47	$ 3.99
Diluted	$ 4.75	$ 4.47	$ 3.99
Dividends declared per common share	$ 2.36	$ 2.20	$ 1.60
Statements of Comprehensive Income:			
Net income	$ 449.6	$ 436.8	$ 392.6
Other comprehensive income (loss), net of tax:			
Foreign currency translation adjustment	—	2.7	(2.6)
Reclassification adjustments to cash flow hedges included in net income, net of tax of $2.2 million, $2.2 million, and $2.2 million for 2016, 2015, and 2014, respectively	3.5	3.5	3.5
Amortization of pension and postretirement plans actuarial loss and prior service cost, net of tax of $4.2 million, $5.6 million, and $2.8 million for 2016, 2015, and 2014, respectively	6.7	8.8	4.2
Changes in unfunded employee benefit obligations, net of tax of $15.7 million, ($8.9) million, and $59.2 million for 2016, 2015, and 2014, respectively	(24.9)	14.0	(94.0)
Other comprehensive income (loss)	(14.7)	29.0	(88.9)
Comprehensive income	$ 434.9	$ 465.8	$ 303.7

See notes to consolidated financial statements.

Packaging Corporation of America

Consolidated Balance Sheets

(dollars and shares in millions, except per-share data)

	December 31	
	2016	**2015**
ASSETS		
Current assets:		
Cash and cash equivalents	$ 239.3	$ 184.2
Accounts receivable, net of allowance for doubtful accounts and customer deductions of $10.1 million and $10.3 million as of December 31, 2016 and 2015, respectively	689.2	636.5
Inventories	723.6	676.8
Prepaid expenses and other current assets	30.3	28.8
Federal and state income taxes receivable	13.9	28.2
Total current assets	1,696.3	1,554.5
Property, plant, and equipment, net	2,895.7	2,832.1
Goodwill	737.9	544.0
Intangible assets, net	367.1	270.8
Other long-term assets	80.0	70.9
Total assets	$ 5,777.0	$ 5,272.3
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Current maturities of long-term debt	$ 25.8	$ 6.5
Capital lease obligations	1.3	1.2
Accounts payable	323.8	294.2
Dividends payable	59.9	53.4
Accrued liabilities	201.2	193.5
Accrued interest	13.4	13.1
Total current liabilities	625.4	561.9
Long-term liabilities:		
Long-term debt	2,620.0	2,290.4
Capital lease obligations	20.3	21.6
Deferred income taxes	334.7	347.0
Compensation and benefits	357.2	358.6
Other long-term liabilities	59.6	59.5
Total long-term liabilities	3,391.8	3,077.1
Commitments and contingent liabilities		
Stockholders' equity:		
Common stock, par value $0.01 per share, 300.0 million shares authorized, 94.2 million and 96.1 million shares issued as of December 31, 2016 and 2015, respectively	0.9	1.0
Additional paid in capital	451.4	439.9
Retained earnings	1,447.1	1,317.3
Accumulated other comprehensive loss	(139.6)	(124.9)
Total stockholders' equity	1,759.8	1,633.3
Total liabilities and stockholders' equity	$ 5,777.0	$ 5,272.3

See notes to consolidated financial statements.

Packaging Corporation of America
Consolidated Statements of Cash Flows
(dollars in millions)

	Year Ended December 31		
	2016	2015	2014
Cash Flows from Operating Activities:			
Net income	$ 449.6	$ 436.8	$ 392.6
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation, depletion, and amortization of intangibles	358.0	356.5	381.6
Amortization of deferred financing costs	7.8	7.8	9.2
Share-based compensation expense	19.7	18.2	15.6
Deferred income tax provision (benefit)	(4.0)	1.7	2.6
Loss on disposals of property, plant, and equipment	7.3	0.5	7.0
Pension and post retirement benefits expense, net of contributions	(30.5)	31.2	25.4
Other, net	(5.9)	(20.3)	(0.9)
Changes in operating assets and liabilities, net of acquisitions:			
Decrease (increase) in assets —			
Accounts receivable	(3.6)	9.5	(8.5)
Inventories	(25.7)	(11.9)	(72.4)
Prepaid expenses and other current assets	—	4.1	(5.1)
Increase (decrease) in liabilities —			
Accounts payable	16.6	(37.3)	(36.0)
Accrued liabilities	(3.2)	(15.5)	7.0
Federal and state income tax payable/receivable	15.1	(18.7)	18.0
Net cash provided by operating activities	801.2	762.6	736.1
Cash Flows from Investing Activities:			
Additions to property, plant, and equipment	(274.3)	(314.5)	(420.2)
Proceeds from sale of a business	—	23.0	—
Acquisitions of businesses, net of cash acquired	(485.4)	—	(20.5)
Additions to other long-term assets	(10.4)	(12.3)	(12.5)
Other, net	0.5	5.7	2.1
Net cash used for investing activities	(769.6)	(298.1)	(451.1)
Cash Flows from Financing Activities:			
Proceeds from issuance of debt	385.0	—	398.9
Repayments of debt	(37.5)	(47.6)	(592.5)
Financing costs paid	(2.0)	—	(3.4)
Common stock dividends paid	(216.1)	(200.8)	(157.4)
Repurchases of common stock	(100.3)	(154.7)	—
Proceeds from exercise of stock options	—	—	3.7
Excess tax benefits from stock-based awards	5.7	6.0	12.2
Shares withheld to cover employee restricted stock taxes	(11.2)	(8.7)	(13.2)
Other, net	(0.1)	0.6	0.6
Net cash provided by (used for) financing activities	23.5	(405.2)	(351.1)
Net increase (decrease) in cash and cash equivalents	55.1	59.3	(66.1)
Cash and cash equivalents, beginning of year	184.2	124.9	191.0
Cash and cash equivalents, end of year	$ 239.3	$ 184.2	$ 124.9

See notes to consolidated financial statements.

Packaging Corporation of America

Consolidated Statements of Changes in Stockholders' Equity

(dollars in million and shares in thousands)

	Common Stock		Additional Paid in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount				
Balance at January 1, 2014	98,172	$ 1.0	$ 401.7	$ 1,019.1	$ (65.0)	$ 1,356.8
Common stock withheld and retired to cover taxes on vested stock awards	(183)	—	(1.2)	(12.0)	—	(13.2)
Common stock dividends declared	—	—	—	(157.5)	—	(157.5)
Restricted stock grants and cancellations	228	—	9.7	—	—	9.7
Exercise of stock options	151	—	6.3	—	—	6.3
Share-based compensation expense	—	—	15.6	—	—	15.6
Comprehensive income	—	—	—	392.6	(88.9)	303.7
Balance at December 31, 2014	98,368	$ 1.0	$ 432.1	$ 1,242.2	$ (153.9)	$ 1,521.4
Common stock repurchases and retirements	(2,326)	—	(15.6)	(139.1)	—	(154.7)
Common stock withheld and retired to cover taxes on vested stock awards	(131)	—	(0.8)	(7.9)	—	(8.7)
Common stock dividends declared	—	—	—	(214.7)	—	(214.7)
Restricted stock/performance unit grants and cancellations	218	—	6.0	—	—	6.0
Share-based compensation expense	—	—	18.2	—	—	18.2
Comprehensive income	—	—	—	436.8	29.0	465.8
Balance at December 31, 2015	96,129	$ 1.0	$ 439.9	$ 1,317.3	$ (124.9)	$ 1,633.3
Common stock repurchases and retirements	(1,987)	(0.1)	(13.1)	(87.1)	—	(100.3)
Common stock withheld and retired to cover taxes on vested stock awards	(172)	—	(1.1)	(10.1)	—	(11.2)
Common stock dividends declared	—	—	—	(222.6)	—	(222.6)
Restricted stock/performance unit grants and cancellations	243	—	5.7	—	—	5.7
Share-based compensation expense	—	—	19.7	—	—	19.7
Other	—	—	0.3	—	—	0.3
Comprehensive income	—	—	—	449.6	(14.7)	434.9
Balance at December 31, 2016	94,213	$ 0.9	$ 451.4	$ 1,447.1	$ (139.6)	$ 1,759.8

See notes to consolidated financial statements.

Notes to Consolidated Financial Statements

1. Nature of Operations and Basis of Presentation

Packaging Corporation of America ("we," "us," "our," "PCA," or the "Company") was incorporated on January 25, 1999. In April 1999, PCA acquired the containerboard and corrugated packaging products business of Pactiv Corporation (Pactiv), formerly known as Tenneco Packaging, Inc., a wholly owned subsidiary of Tenneco Inc. In October 2013, PCA acquired Boise Inc. (Boise). After the acquisition of Boise, we became a large diverse manufacturer of both packaging and paper products. We are headquartered in Lake Forest, Illinois and we operate primarily in the United States. We have approximately 14,000 employees.

We report our businesses in three reportable segments: Packaging, Paper, and Corporate and Other. Our Packaging segment produces a wide variety of corrugated packaging products. The Paper segment manufactures and sells a range of papers, including communication-based papers, and pressure sensitive papers. On December 1, 2016, we ceased softwood market pulp operations at our Wallula, Washington mill and permanently shut down the No. 1 machine, with pulp capacity of 100,000 tons. Corporate and other includes support staff services and related assets and liabilities, transportation assets, and activity related to other ancillary support operations. For more information about our segments, see Note 17, Segment Information.

The consolidated financial statements include the accounts of PCA and its majority-owned subsidiaries after elimination of intercompany balances and transactions.

2. Summary of Significant Accounting Policies

Use of Estimates

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America requires management to make estimates and assumptions about future events. These estimates and the underlying assumptions affect the amounts of assets and liabilities reported, disclosures about contingent assets and liabilities, and reported amounts of revenues and expenses. These estimates and assumptions are based on management's best estimates and judgment. Management evaluates its estimates and assumptions on an ongoing basis using historical experience and other factors, including the current economic environment. We adjust such estimates and assumptions when facts and circumstances dictate. As future events and their effects cannot be determined with precision, actual results could differ significantly from these estimates. Changes in these estimates will be reflected in the consolidated financial statements in future periods.

Revenue Recognition

We recognize revenue when the following criteria are met: persuasive evidence of an agreement exists, the customer takes title and assumes risk and rewards of ownership or services have been rendered, our price to the buyer is fixed or determinable, and collectability is reasonably assured. The timing of revenue recognition is dependent on transfer of title, which is normally either on exit from our plants (i.e., shipping point) or on arrival at customer’s location (i.e., destination point). Shipping and handling billings to a customer are included in net sales. Shipping and handling costs, such as freight to our customers' destinations, are included in cost of sales. We present taxes collected from customers and remitted to governmental authorities on a net basis in our Consolidated Statements of Income.

Planned Major Maintenance Costs

The Company accounts for its planned major maintenance activities in accordance with ASC 360, *Property, Plant, and Equipment*, using the deferral method. All maintenance costs incurred during the year are expensed in the year in which the maintenance activity occurs.

Share-Based Compensation

We recognize compensation expense for awards granted under the PCA long-term equity incentive plans based on the fair value on the grant date. We recognize the cost of the equity awards expected to vest over the period the awards vest. See Note 12, Share-Based Compensation, for more information.

Research and Development

Research and development costs are expensed as incurred. The amount charged to expense was $13.3 million, $13.1 million, and $12.3 million for the years ended December 31, 2016, 2015, and 2014, respectively.

Cash and Cash Equivalents

Cash and cash equivalents include all cash balances and highly liquid investments with a stated maturity of three months or less. Cash equivalents are stated at cost, which approximates market. Cash and cash equivalents totaled $239.3 million and $184.2 million at December 31, 2016 and 2015, respectively, which included cash equivalents of $178.4 million and $140.9 million, respectively. At December 31, 2016 and 2015, we had $3.4 million and $3.1 million, respectively, of cash at our operations outside the United States.

Trade Accounts Receivable, Allowance for Doubtful Accounts, and Customer Deductions

Trade accounts receivable are stated at the amount we expect to collect. The collectability of our accounts receivable is based upon a combination of factors. In circumstances where a specific customer is unable to meet its financial obligations to PCA (e.g., bankruptcy filings, substantial downgrading of credit sources), a specific reserve for bad debts is recorded against amounts due to the Company to reduce the net recorded receivable to the amount the Company reasonably believes will be collected. For all other customers, reserves for bad debts are recognized based on historical collection experience. If collection experience deteriorates (i.e., higher than expected defaults or an unexpected material adverse change in a major customer's ability to meet its financial obligations to the Company), the estimate of the recoverability of amounts due could be reduced by a material amount. We periodically review our allowance for doubtful accounts and adjustments to the valuation allowance are recorded as income or expense. Trade accounts receivable balances that remain outstanding after we have used reasonable collection efforts are written off through a charge to the valuation allowance and a credit to accounts receivable. At December 31, 2016 and 2015, the allowance for doubtful accounts was $3.8 million and $3.9 million, respectively.

The customer deductions reserve represents the estimated amount required for customer returns, allowances, and earned discounts. Based on the Company's experience, customer returns, allowances, and earned discounts have averaged approximately 1% of gross selling price. Accordingly, PCA reserves 1% of its open customer accounts receivable balance for these items. The reserves for customer deductions of $6.3 million and $6.4 million at December 31, 2016 and 2015, respectively, are also included as a reduction of the accounts receivable balance.

Derivative Instruments and Hedging Activities

The Company records its derivatives, if any, in accordance with ASC 815, *Derivatives and Hedging*. The guidance requires the Company to recognize derivative instruments as either assets or liabilities on the balance sheet at fair value. The accounting for changes in the fair value of a derivative depends on the intended use and designation of the derivative instrument. For a derivative designated as a fair value hedge, the gain or loss on the derivative is recognized in earnings in the period of change at fair value together with the offsetting gain or loss on the hedged item. For a derivative instrument designated as a cash flow hedge, the effective portion of the derivative's gain or loss is initially reported as a component of accumulated other comprehensive income (loss) (AOCI) and is subsequently recognized in earnings when the hedged exposure affects earnings. The ineffective portion of the gain or loss is recognized in earnings. We were not party to any derivative-based arrangements at December 31, 2016 and 2015.

Fair Value Measurements

PCA measures the fair value of its financial instruments in accordance with ASC 820, *Fair Value Measurements and Disclosures*. The guidance defines fair value as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants. It is determined based on assumptions that market participants would use in pricing an asset or liability. As a basis for considering such assumptions, ASC 820 establishes the following hierarchy that prioritizes the inputs to valuation methodologies used to measure fair value:

Level 1 — Valuations based on quoted prices for identical assets and liabilities in active markets.

Level 2 — Valuations based on observable inputs other than quoted prices included in Level 1, such as quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable market data.

Level 3 — Valuations based on unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

Financial instruments measured at fair value on a recurring basis include the fair value of our pension and postretirement benefit assets and liabilities. See Note 10, Employee Benefit Plans and Other Postretirement Benefits for more information. Other assets and liabilities measured and recognized at fair value on a nonrecurring basis include assets acquired and liabilities assumed in acquisitions and our asset retirement obligations. Given the nature of these assets and liabilities, evaluating their fair value from the perspective of a market participant is inherently complex. Assumptions and estimates about future values can be affected by a variety of internal and external factors. Changes in these factors may require us to revise our estimates and could require us to retroactively adjust provisional amounts that we recorded for the fair values of assets acquired and liabilities assumed in connection with business combinations. These adjustments could have a material effect on our financial condition and results of operations. See Note 3, Acquisitions and Dispositions, and Note 11, Asset Retirement Obligations, for more information.

Inventory Valuation

We value our raw materials, work in process, and finished goods inventories using lower of cost, as determined by the average cost method, or market. Supplies and materials are valued at the first-in, first-out (FIFO) or average cost methods.

The components of inventories were as follows (dollars in millions):

	December 31	
	2016	2015
Raw materials	$ 271.9	$ 260.6
Work in process	12.9	14.2
Finished goods	206.5	189.7
Supplies and materials	232.3	212.3
Inventories	$ 723.6	$ 676.8

Property, Plant, and Equipment

Property, plant, and equipment are recorded at cost. Cost includes expenditures for major improvements and replacements and the amount of interest cost associated with significant capital additions. Repairs and maintenance costs are expensed as incurred. When property and equipment are retired, sold, or otherwise disposed of, the asset's carrying amount and related accumulated depreciation are removed from the accounts and any gain or loss is included in "Net income" in our Consolidated Statements of Income.

Property, plant, and equipment consisted of the following (dollars in millions):

	December 31	
	2016	2015
Land and land improvements	$ 149.7	$ 146.4
Buildings	717.1	640.9
Machinery and equipment	4,951.4	4,747.1
Construction in progress	125.4	119.1
Other	66.7	61.3
Property, plant, and equipment, at cost	6,010.3	5,714.8
Less accumulated depreciation	(3,114.6)	(2,882.7)
Property, plant, and equipment, net	$ 2,895.7	$ 2,832.1

The amount of interest capitalized from construction in progress was $2.5 million, $2.0 million, and $2.8 million for the years ended December 31, 2016, 2015, and 2014, respectively.

Depreciation is computed on the straight-line basis over the estimated useful lives of the related assets. Assets under

capital leases are depreciated on the straight-line method over the term of the lease or the useful life, if shorter. The following lives are used for the various categories of assets:

Buildings and land improvements	5 to 40 years
Machinery and equipment	3 to 25 years
Trucks and automobiles	3 to 10 years
Furniture and fixtures	3 to 20 years
Computers and hardware	3 to 10 years
Leasehold improvements	Period of the lease or useful life, if shorter

The amount of depreciation expense was $324.1 million, $323.0 million, and $348.2 million for the years ended December 31, 2016, 2015, and 2014, respectively. In 2016, we recognized incremental depreciation expense of $2.9 million, primarily related to facilities closure costs and the Wallula mill restructuring. During the years ended December 31, 2015 and 2014, we recognized $9.0 million and $42.0 million, respectively, of incremental depreciation expense primarily related to shortening the useful lives of assets related to the restructuring at the DeRidder, Louisiana, mill.

Pursuant to the terms of an industrial revenue bond, title to certain property, plant, and equipment was transferred to a municipal development authority in 2009 in order to receive a property tax abatement. The title of these assets will revert back to PCA upon retirement or cancellation of the bond. The assets are included in the consolidated balance sheet under the caption "Property, plant, and equipment, net" as all risks and rewards remain with the Company.

Leases

We assess lease classification as either capital or operating at lease inception or upon modification. We lease some of our locations, as well as other property and equipment, under operating leases. For purposes of determining straight-line rent expense, the lease term is calculated from the date of possession of the facility, including any periods of free rent and any renewal option periods that are reasonably assured of being exercised.

Long-Lived Asset Impairment

Long-lived assets other than goodwill and other intangibles are reviewed for impairment in accordance with provisions of ASC 360, *Property, Plant and Equipment*. In the event that facts and circumstances indicate that the carrying amount of any long-lived assets may be impaired, an evaluation of recoverability is performed. If an evaluation is required, the estimated future undiscounted cash flows associated with the asset (or group of assets) is compared to the assets (or group of assets) carrying amount to determine if a write-down to fair value is required.

Goodwill and Intangible Assets

The Company has capitalized certain intangible assets, primarily goodwill, customer relationships, and trademarks and trade names, based on their estimated fair value at the date of acquisition. Amortization is provided for customer relationships on a straight-line basis over periods ranging from ten to 40 years, and trademarks and trade names over periods ranging from three to 20 years.

Goodwill, which amounted to $737.9 million and $544.0 million for the years ended December 31, 2016 and 2015, respectively, is not amortized but is subject to an annual impairment test in accordance with ASC 350, *Intangibles - Goodwill and Other*. We test goodwill for impairment annually in the fourth quarter or sooner if events or changes in circumstances indicate that the carrying value of the asset may exceed fair value. Additionally, we evaluate the remaining useful lives of our finite-lived purchased intangible assets to determine whether any adjustments to the useful lives are necessary. The Company concluded that none of the goodwill or intangible assets were impaired in the 2016, 2015, and 2014 annual impairment tests. See Note 7, Goodwill and Intangible Assets for additional information.

Pension and Postretirement Benefits

Several estimates and assumptions are required to record pension costs and liabilities, including discount rate, return on assets, and longevity and service lives of employees. We review and update these assumptions annually unless a plan

curtailment or other event occurs, requiring we update the estimates on an interim basis. While we believe the assumptions used to measure our pension and postretirement benefit obligations are reasonable, differences in actual experience or changes in assumptions may materially affect our pension and postretirement benefit obligations and future expense. See Note 10, Employee Benefit Plans and Other Postretirement Benefits, for additional information.

For postretirement health care plan accounting, the Company reviews external data and its own historical trends for health care costs to determine the health care cost trend rate assumption.

Environmental Matters

Environmental expenditures that extend the life of the related property or mitigate or prevent future environmental contamination are capitalized. Liabilities are recorded for environmental contingencies when such costs are probable and reasonably estimable. These liabilities are adjusted as further information develops or circumstances change. Environmental expenditures related to existing conditions resulting from past or current operations from which no current or future benefit is discernible are expensed as incurred.

Asset Retirement Obligations

The Company accounts for its retirement obligations related predominantly to landfill closure, wastewater treatment pond dredging, closed-site monitoring costs, and certain leasehold improvements under ASC 410, *Asset Retirement and Environmental Obligations*, which requires recognition of legal obligations associated with the retirement of long-lived assets whether these assets are owned or leased. These legal obligations are recognized at fair value at the time that the obligations are incurred. When we record the liability, we capitalize the cost by increasing the carrying amount of the related long-lived asset, which is amortized to expense over the useful life of the asset. See Note 11, Asset Retirement Obligations, for additional information.

Deferred Financing Costs

PCA has capitalized certain costs related to obtaining its financing. These costs are amortized to interest expense using the effective interest rate method over the terms of the related financing, which range from five to ten years. Effective January 1, 2016, the Company adopted Accounting Standards Update (ASU) 2015-03 (Topic 835): *Simplifying the Presentation of Debt Issuance Costs*. We applied this guidance retrospectively, as required, and reclassified $12.3 million from "Other long-term assets" to "Long-term debt" on our December 31, 2015 Consolidated Balance Sheet to conform with current period presentation. At December 31, 2016 deferred financing costs were $12.4 million.

Cutting Rights and Fiber Farms

We lease the cutting rights to approximately 75,000 acres of timberland, and we lease 9,000 acres of land where we operate fiber farms as a source of future fiber supply. For our cutting rights and fiber farms, we capitalize the annual lease payments and reforestation costs associated with these leases. Costs are recorded as depletion when the timber or fiber is harvested and used in operations or sold to customers. Capitalized long-term lease costs for our cutting rights and fiber farms, primarily recorded in "Other long-term assets" on our Consolidated Balance Sheet, were $43.9 million and $40.2 million as of December 31, 2016 and 2015, respectively. The amount of depletion expense was $4.7 million, $7.0 million, and $7.3 million for the years ended December 31, 2016, 2015, and 2014, respectively.

Deferred Software Costs

PCA capitalizes costs related to the purchase and development of software, which is used in its business operations. The costs attributable to these software systems are amortized over their estimated useful lives based on various factors such as the effects of obsolescence, technology, and other economic factors. Net capitalized software costs recorded in "Other long-term assets" on our Consolidated Balance Sheets were $4.5 million and $6.9 million for the years ended December 31, 2016 and 2015, respectively. Software amortization expense was $2.5 million, $3.0 million, and $2.9 million for the years ended December 31, 2016, 2015, and 2014, respectively.

Income Taxes

PCA utilizes the liability method of accounting for income taxes whereby it recognizes deferred tax assets and liabilities for the future tax consequences of temporary differences between the tax basis of assets and liabilities and their reported amounts in the financial statements. Deferred tax assets will be reduced by a valuation allowance if, based upon management's estimates, it is more likely than not that a portion of the deferred tax assets will not be realized in a future period. The estimates utilized in the recognition of deferred tax assets are subject to revision in future periods based on new facts or circumstances. PCA's practice is to recognize interest and penalties related to unrecognized tax benefits in income tax expense.

Trade Agreements

PCA regularly trades containerboard with other manufacturers primarily to reduce shipping costs. These agreements are entered into with other producers on an annual basis, pursuant to which both parties agree to ship an identical number of tons of containerboard to each other within the agreement period. These agreements lower transportation costs by allowing each party's containerboard mills to ship containerboard to the other party's closer corrugated products plant. PCA tracks each shipment to ensure that the other party's shipments to PCA match PCA's shipments to the other party during the agreement period. Such transfers are possible because containerboard is a commodity product with no distinguishing product characteristics. These transactions are accounted for at carrying value, and revenue is not recorded as the transactions do not represent the culmination of an earnings process. The transactions are recorded into inventory accounts, and no sale or income is recorded until such inventory is converted to a finished product and sold to an end-use customer.

Business Combinations

The Company accounts for acquisitions under ASC 805, *Business Combinations*, which requires separate recognition of assets acquired and liabilities assumed from goodwill, at the acquisition date fair values. Goodwill as of the acquisition date is measured as the excess of consideration transferred over the net of the acquisition date fair values of the assets acquired and liabilities assumed. During the measurement period, which may be up to one year from the acquisition date, the Company records adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. Upon the conclusion of the measurement period or final determination of the values of assets acquired or liabilities assumed, whichever comes first, any subsequent adjustments are recorded to the consolidated financial statements. In January 2017, the FASB issued ASU 2017-01, *Clarifying the Definition of a Business*, which adds guidance to assist entities with evaluating whether transactions should be accounted for as acquisitions (disposals) of assets or businesses. The guidance of ASU 2017-01 is effective for fiscal years beginning after December 15, 2017.

New and Recently Adopted Accounting Standards

In May 2014, the FASB issued ASU 2014-09 (Topic 606): *Revenue from Contracts with Customers*. This ASU amends the guidance for revenue recognition to replace numerous industry-specific requirements. The ASU implements a five-step process for customer contract revenue recognition that focuses on transfer of control as opposed to transfer of risk and rewards. The amendment also requires enhanced disclosures regarding the nature, amount, timing and uncertainty of revenue and cash flows from contracts with customers.

There are two permitted transition methods under the standard: full retrospective method, in which case the cumulative effect of applying the standard would be recognized in the earliest period shown, or the modified retrospective method, in which case the cumulative effect of applying the standard would be recognized at the date of initial application. The standard will be effective for reporting periods beginning after December 15, 2017.

We have been closely monitoring FASB activity related to the new standard. The following updates have been made as a result of implementation issues related to the new standard:

- In March 2016, the FASB issued ASU 2016-08, *Revenue from Contracts with Customers - Principal versus Agent Consideration (Reporting revenue gross versus net)*, which clarifies gross versus net revenue reporting when another party is involved in the transactions.
- In April 2016, FASB issued ASU 2016-10, *Revenue from Contracts with Customers - Identifying Performance Obligations and Licensing*, which amends the revenue guidance on identifying performance obligations and accounting for licenses of intellectual property.

- In May 2016, the FASB issued ASU 2016-12, *Revenue from Contracts with Customers - Narrow-Scope Improvements and Practical Expedients*, which provides narrow-scope improvements to the guidance on collectability, non-cash consideration, and completed contracts at transition
- In December 2016, the FASB issued ASU 2016-20, *Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers*, which provides additional guidance and clarification for application and interpretation of the new standard. The ASU makes technical corrections and improvements to the new revenue standard and to other Codification topics to address unintended consequences from applying the new guidance.

We have established a transition team to analyze the impact of the standard on our revenue contracts by reviewing our current accounting policies and practices and identifying potential differences that would result from applying the requirements of the new standard. Specifically, we have identified significant revenue streams within each of our reportable segments and are reviewing representative contracts to identify corresponding purchase obligations, variable consideration, acquisition costs and fulfillment costs. In addition, we are in the process of identifying appropriate changes to our business processes, systems and controls to support revenue recognition and disclosures under the new standard. This team has reported its findings and progress of the project to management and the Audit Committee on a periodic basis over the last year.

We are still assessing the impact of ASU 2014-09, the related updates as mentioned above, and the most appropriate transition method but we do not believe they will have a material effect on the Company’s financial position or its results of operations. We expect to finalize both our assessment and determine our adoption method by June 30, 2017. The new standard becomes effective for us as of January 1, 2018, with the option to early adopt the standard for annual periods beginning on or after December 15, 2016. We do not plan to early adopt the standard.

In January 2017, the FASB issued ASU 2017-01 (Topic 805), *Clarifying the Definition of a Business*, which amends the guidance in ASC 805, “Business Combinations”. The ASU changes the definition of a business to assist entities with evaluating when a set of transferred assets and activities is a business. Under the new guidance, an entity first determines whether substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets. If this threshold is met, the set is not a business. If it is not met, the entity then evaluates whether the set meets the requirements that a business include, at a minimum, an input and a substantive process that together significantly contribute to the ability to create outputs. The ASU defines an output as “the result of inputs and processes applied to those inputs that provide goods or services to customers, investment income (such as dividends or interest), or other revenues.” The ASU is effective for annual reporting periods beginning after December 15, 2017, including interim periods within those annual periods, and early adoption is permitted. The ASU will be applied prospectively to any transactions subsequent to adoption.

In August 2016, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2016-15, "Statement of Cash Flows (Topic 230): *Classification of Certain Cash Receipts and Cash Payments*. This ASU adds or clarifies guidance on the classification of certain cash receipts and payments in the statement of cash flows. It is effective for annual periods beginning after December 15, 2017, and interim periods within those annual periods, with early adoption permitted. The Company does not expect this ASU to have a material impact on the Company's financial condition, results of operations, or cash flows.

In March 2016, the FASB issued ASU 2016-09 (Topic 718): *Improvements to Employee Share-Based Payment Accounting*, which is intended to improve the accounting for share-based payment transactions as part of the FASB’s simplification initiative. This ASU requires all excess tax benefits and deficiencies from share-based payment awards (including tax benefits of dividends on share-based payment awards) to be recognized in the income statement when the awards vest or are settled. Excess tax benefits and deficiencies are currently recognized in additional paid in capital in our consolidated balance sheet. Additionally, the guidance requires these excess tax benefits and deficiencies to be presented as an operating activity in the statement of cash flows rather than as a financing activity. The guidance also allows an employer to repurchase more of an employee’s shares than it can today for tax withholding purposes without triggering liability accounting and to make a policy election to account for forfeitures as they occur. The provisions are effective for fiscal years beginning after December 15, 2016, including interim periods within those fiscal years. As a result of this adoption, the Company will prospectively record excess tax benefits and deficiencies from share-based compensation as income tax expense or benefit in the income statement for periods beginning after January 1, 2017. The magnitude of such impacts are dependent upon the Company's future stock price at vest or settlement date in relation to the fair value of share-based awards on the grant date, the Company's future grants of share-based awards, and the exercise behavior of the Company's equity compensation holders. The Company will also retrospectively reclassify excess tax benefits and deficiencies as an operating activity rather than a financing activity on its consolidated statements of cash flows. All other adopted amendments did not have a material impact on the Company's financial position, results of operations and cash flow.

In February 2016, the FASB issued ASU 2016-02 (Topic 842): *Leases*. This ASU amends a number of aspects of lease accounting, including requiring lessees to recognize operating leases with a term greater than one year on their balance sheet as a right-of-use asset and corresponding lease liability, measured at the present value of the lease payments. This ASU will be effective for us beginning in our first quarter of 2019 and early adoption is permitted. This ASU is required to be adopted using a modified retrospective approach. We are evaluating the timing and effects of the adoption of this ASU on our financial statements.

In July 2015, the FASB issued ASU 2015-11 (Topic 330): *Simplifying the Measurement of Inventory*, as part of its simplification initiative. Under the ASU, inventory is measured at the "lower of cost and net realizable value" and other options that currently exist for market value will be eliminated. ASU 2015-11 defines net realizable value as the estimated selling prices in the ordinary course of business, less reasonably predictable costs of completion, disposal and transportation. No other changes were made to the current guidance on inventory measurement. The Company adopted this standard, prospectively, on January 1, 2017. The adoption of this guidance did not have a material effect on our financial position or results of operations.

In April 2015, the FASB issued ASU 2015-03 (Topic 835): *Simplifying the Presentation of Debt Issuance Costs*. This ASU conforms the presentation of debt issuance costs with that required for debt discounts under U.S. GAAP. Under the ASU, debt issuance costs are presented in the balance sheet as a direct deduction from the related liability rather than as an asset. The Company adopted this standard on January 1, 2016. We applied this guidance retrospectively, as required, and reclassified $12.3 million from "Other long-term assets" to "Long-term debt" on our December 31, 2015 Consolidated Balance Sheet to conform with current period presentation. At December 31, 2016 deferred financing costs were $12.4 million.

There were no other accounting standards recently issued that had or are expected to have a material impact on our financial position or results of operations.

3. Acquisitions and Dispositions

TimBar Acquisition

On August 29, 2016, PCA acquired substantially all of the assets of TimBar Corporation (“TimBar”), a large independent corrugated products producer with six corrugated products production facilities, for a purchase price of $385.6 million, net of cash acquired. Funding for the acquisition came from a new $385.0 million five-year term loan facility. TimBar provides solutions to customers in the higher margin retail, industrial packaging and display and fulfillment markets with a focus on multi-color graphics and technical innovation. With the acquisition of TimBar, we acquired a 51% controlling interest in a wholesale distributor of polywoven plastic bags used in the transportation industry. TimBar financial results are included in the Packaging segment from the date of acquisition. For the period ended December 31, 2016, TimBar accounted for $116.9 million, or 2.0% of the Company's net sales. Had the acquisition occurred at the beginning of 2015, PCA's net sales would have been $6.0 billion and $6.1 billion for 2016 and 2015, respectively.

The Company accounted for TimBar using the acquisition method of accounting in accordance with ASC 805, *Business Combinations*. The total purchase price has been preliminarily allocated to tangible and intangible assets acquired and liabilities assumed based on respective fair values, as follows (dollars in millions):

	Initial Allocation	Adjustments	Revised Allocation
Goodwill	$ 148.1	$ 9.2	$ 157.3
Other intangible assets	101.6	(7.2)	94.4
Property, plant and equipment	96.9	(1.6)	95.3
Other net assets	39.0	(0.4)	38.6
Net assets acquired	$ 385.6	$ —	$ 385.6

The purchase price allocation presented above is preliminary and is subject to the finalization of various valuations and assessments, primarily related to property, plant, and equipment, working capital and intangible assets. Our current estimates and assumptions may change as more information becomes available. We expect to finalize the valuations within the 12-month period following the acquisition date.

Goodwill is calculated as the excess of the purchase price over the fair value of the net assets acquired. Among the factors that contributed to the recognition of goodwill were TimBar's commitment to continuous improvement and innovation in their operations, as well as the expected increases in PCA's containerboard integration levels. Goodwill is expected to be deductible for tax purposes.

Other intangible assets, primarily customer relationships, were assigned an estimated weighted average useful life of 14.2 years.

Property, plant and equipment were assigned estimated useful lives ranging from two to 24 years.

Columbus Container Acquisition

On November 30, 2016, PCA acquired substantially all of the assets of Columbus Container, Inc., an independent corrugated products producer with one corrugated products production facility and five warehousing facilities, for a purchase price of $99.7 million, net of cash acquired. Funding for the acquisition came from available cash on hand. Columbus Container, Inc. is a full-service provider of corrugated packaging products utilizing state-of-the-art technologies and design centers to provide customers a solution for nearly any packaging need. Columbus Container financial results are included in the Packaging segment from the date of acquisition.

PCA allocated the total purchase price to the Columbus Container assets as follows: $36.6 million to goodwill, $26.3 million to intangible assets, $27.2 million to property, plant, & equipment, and $9.6 million to other net assets. The allocation presented is preliminary and is subject to the finalization of various valuations and assessments, primarily related to property, plant, and equipment and intangible assets. Our current estimates and assumptions may change as more information becomes available. We expect to finalize the valuations within the 12-month period following the acquisition date.

Goodwill is calculated as the excess of the purchase price over the fair value of the net assets acquired. Among the factors that contributed to the recognition of goodwill were Columbus Container's commitment to continuous improvement and innovation in their operations, as well as the expected increases in PCA's containerboard integration levels. Goodwill is expected to be deductible for tax purposes.

Other intangible assets, primarily customer relationships, were assigned an estimated weighted average useful life of 14.4 years.

Property, plant and equipment were assigned estimated useful lives ranging from one to 32 years.

Sale of European and Mexican Operations

On April 1, 2015, we completed the sale of our Hexacomb corrugated manufacturing operations in Europe and Mexico for approximately $23.0 million. The sale included three locations in Europe and two locations in Mexico. Sales, net income, and total assets of these locations are not material to our consolidated financial position or results of operations in any period presented. The gain on the sale was insignificant.

Crockett Packaging Acquisition

On April 28, 2014, we acquired the assets of Crockett Packaging, a corrugated products manufacturer, for $21.2 million, before $0.7 million of working capital adjustments. The assets included a corrugated plant and a sheet plant in Southern California. Sales and total assets of the acquired company are not material to our overall sales and total assets. Operating results of the acquired assets subsequent to April 28, 2014, are included in our Packaging segment's operating results. In connection with the acquisition, we allocated the purchase price to the assets acquired and liabilities assumed based on estimates of the fair value at the date of the acquisition.

4. Earnings Per Share

The following table sets forth the computation of basic and diluted income per common share for the periods presented (dollars and shares in millions, except per share data).

	Year Ended December 31		
	2016	2015	2014
Numerator:			
Net income	$ 449.6	$ 436.8	$ 392.6
Less: distributed and undistributed earnings allocated to participating securities	(4.4)	(5.2)	(5.7)
Net income attributable to common shareholders	$ 445.2	$ 431.6	$ 386.9
Denominator:			
Weighted average basic common shares outstanding	93.5	96.6	97.0
Effect of dilutive securities	0.2	0.1	0.1
Diluted common shares outstanding	93.7	96.7	97.1
Basic income per common share	$ 4.76	$ 4.47	$ 3.99
Diluted income per common share	$ 4.75	$ 4.47	$ 3.99

As of June 29, 2014, we had no remaining options to purchase shares. For the year ended 2014, all outstanding options to purchase shares were included in the computation of diluted common shares.

5. Other Expense, Net

The components of other income (expense), net, were as follows (dollars in millions):

	Year Ended December 31		
	2016	2015	2014
Asset disposals and write-offs	$ (11.9)	$ (14.0)	$ (10.1)
Facilities closure costs (a)	(9.4)	—	—
Acquisition-related costs (b)	(3.3)	—	—
Multiemployer pension withdrawal (c)	(0.9)	—	—
Wallula mill restructuring (d)	(0.6)	—	—
Integration-related and other costs (e)	—	(12.9)	(20.0)
DeRidder restructuring (f)	—	7.1	(7.3)
Sale of St. Helens paper mill site (g)	—	6.7	—
Refundable state tax credit (h)	—	3.6	—
Class action lawsuit settlement (i)	—	—	(17.6)
Other	1.8	2.8	(2.3)
Total	$ (24.3)	$ (6.7)	$ (57.3)

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(a) Includes facilities closure costs related to corrugated products facilities and a paper products facility.

(b) Includes acquisition-related costs for the TimBar Corporation and Columbus Container, Inc. acquisitions.

(c) Includes costs related to our withdrawal from a multiemployer pension plan for one of our corrugated products facilities.

(d) Includes costs related to ceased softwood market pulp operations at our Wallula, Washington mill and the permanent shutdown of the No. 1 machine.

(e) Includes Boise acquisition integration-related and other costs, which primarily relate to severance, retention, travel, and professional fees.

(f) 2015 and 2014 include amounts from restructuring activities at our mill in DeRidder, Louisiana including costs related to the conversion of the No. 3 newsprint machine to containerboard, our exit from the newsprint business, and other improvements. We completed the restructuring activities in first quarter 2015. In 2015, we recorded $7.1 million of income from vendor settlements.

(g) In September 2015, we sold the remaining land, buildings, and equipment at our paper mill site in St. Helens, Oregon where we ceased paper production in December 2012. We recorded a $6.7 million gain on the sale.

(h) Includes a $3.6 million tax credit from the State of Louisiana related to our recent capital investment and the jobs retained at the DeRidder, Louisiana mill, which was recorded as a benefit.

(i) Includes $17.6 million of costs for the settlement of the *Kleen Products LLC v Packaging Corp. of America et al* class action lawsuit. See Note 18, Commitments, Guarantees, Indemnifications, and Legal Proceedings, for more information.

6. Income Taxes

The following is an analysis of the components of the consolidated income tax provision (dollars in millions):

	2016	2015	2014
Current income tax provision (benefit) -			
U.S. Federal	$ 213.6	$ 205.1	$ 185.1
State and local	29.1	20.5	33.1
Foreign	0.2	0.4	0.9
Total current provision for taxes	242.9	226.0	219.1
Deferred -			
U.S. Federal	(1.2)	(3.8)	(5.0)
State and local	(3.0)	5.6	7.6
Foreign	0.2	(0.1)	—
Total deferred provision (benefit) for taxes	(4.0)	1.7	2.6
Total provision (benefit) for taxes	$ 238.9	$ 227.7	$ 221.7

The effective tax rate varies from the U.S. Federal statutory tax rate principally due to the following (dollars in millions):

	2016	2015	2014
Provision computed at U.S. Federal statutory rate of 35%	$ 241.0	$ 232.6	$ 215.0
State and local taxes, net of federal benefit	19.8	20.0	20.5
Domestic manufacturers deduction	(21.1)	(19.9)	(16.5)
Other	(0.8)	(5.0)	2.7
Total	$ 238.9	$ 227.7	$ 221.7

The following details the scheduled expiration dates of our tax effected net operating loss (NOL) and other tax carryforwards at December 31, 2016 (dollars in millions):

	2017 Through 2026	2027 Through 2036	Indefinite	Total
U.S. federal and foreign NOLs	$ —	$ 65.3	$ —	$ 65.3
State taxing jurisdiction NOLs	1.3	0.8	—	2.1
U.S. federal, foreign, and state tax credit carryforwards	—	0.1	—	0.1
U.S. federal capital loss carryforwards	5.2	—	—	5.2
Total	$ 6.5	$ 66.2	$ —	$ 72.7

Deferred income taxes reflect the net tax effects of temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts for income tax purposes. Deferred income tax assets and liabilities at December 31 are summarized as follows (dollars in millions):

	December 31	
	2016	2015
Deferred tax assets:		
Accrued liabilities	$ 18.1	$ 18.3
Employee benefits and compensation	45.9	32.5
Inventories	9.9	3.9
Net operating loss carryforwards	67.4	73.2
Stock options and restricted stock	11.7	10.7
Pension and postretirement benefits	136.5	148.2
Derivatives	11.5	13.7
Capital loss, general business, foreign, and AMT credit carryforwards	5.3	5.2
Gross deferred tax assets	$ 306.3	$ 305.7
Valuation allowance (a)	(5.2)	(5.1)
Net deferred tax assets	$ 301.1	$ 300.6
Deferred tax liabilities:		
Property, plant, and equipment	$ (537.0)	$ (545.8)
Goodwill and intangible assets	(98.8)	(101.8)
Total deferred tax liabilities	$ (635.8)	$ (647.6)
Net deferred tax liabilities (b)	$ (334.7)	$ (347.0)

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(a) Deferred tax assets are reduced by a valuation allowance when it is more likely than not that some portion of the deferred tax assets will not be realized. Both the 2016 and 2015 valuation allowance relates to capital losses. We do not expect to generate capital gains before the capital losses expire. If or when recognized, the tax benefits relating to the reversal of any or all of the valuation allowance would be recognized as a benefit to income tax expense.

(b) As of December 31, 2016, we did not recognize U.S. deferred income taxes on our cumulative total of undistributed foreign earnings for our foreign subsidiaries. We indefinitely reinvest our earnings in operations outside the United States. It is not practicable to determine the amount of unrecognized deferred tax liability on these undistributed earnings because the actual tax liability, if any, is dependent on circumstances existing when the repatriation occurs.

Cash payments for federal, state, and foreign income taxes were $222.1 million, $238.3 million, and $189.5 million for the years ended December 31, 2016, 2015, and 2014, respectively.

The following table summarizes the changes related to PCA’s gross unrecognized tax benefits excluding interest and penalties (dollars in millions):

	2016	2015	2014
Balance as of January 1	$ (5.8)	$ (4.4)	$ (5.4)
Increases related to prior years’ tax positions	—	(2.8)	(1.0)
Increases related to current year tax positions	(0.5)	(0.4)	(0.3)
Decreases related to prior years' tax positions	0.1	—	0.9
Settlements with taxing authorities	0.3	0.7	0.5
Expiration of the statute of limitations	0.7	1.1	0.9
Balance at December 31	$ (5.2)	$ (5.8)	$ (4.4)

At December 31, 2016, PCA had recorded a $5.2 million gross reserve for unrecognized tax benefits, excluding interest and penalties. Of the total, $3.9 million (net of the federal benefit for state taxes) would impact the effective tax rate if recognized.

PCA recognizes interest accrued related to unrecognized tax benefits and penalties as income tax expense. At December 31, 2016 and 2015, we had $1.1 million and $1.0 million of interest and penalties recorded for unrecognized tax benefits. During the next 12 months, it is reasonably possible that PCA's unrecognized tax benefits could change by approximately $2.7 million due to settlements with state taxing authorities.

PCA is subject to taxation in the United States, various state and local, and foreign jurisdictions. A federal examination of the tax years 2010 - 2012 was concluded in February 2015. A federal examination of the 2013 tax year was concluded in November 2016. The tax years 2014 - 2016 remain open to federal examination. The tax years 2012 - 2016 remain open to state examinations. Some foreign tax jurisdictions are open to examination for the 2009 tax year forward. Through the Boise acquisition, PCA recorded net operating losses and credit carryforwards from 2008 through 2011 and 2013 that are subject to examinations and adjustments for at least three years following the year in which utilized.

7. Goodwill and Intangible Assets

Goodwill

Goodwill represents the excess of the cost of an acquired business over the fair value of the identifiable tangible and intangible assets acquired and liabilities assumed in a business combination. At December 31, 2016 and 2015, we had $682.7 million and $488.8 million, respectively, of goodwill recorded in our Packaging segment and $55.2 million for both years in our Paper segment on our Consolidated Balance Sheets.

Changes in the carrying amount of our goodwill were as follows (dollars in millions):

	Packaging	Paper	Goodwill
Balance at January 1, 2015	$ 491.6	$ 55.2	$ 546.8
Sale of Hexacomb Europe and Mexico (a)	(2.8)	—	(2.8)
Balance at December 31, 2015	488.8	55.2	544.0
Acquisitions (b)	193.9	—	193.9
Balance at December 31, 2016	$ 682.7	$ 55.2	$ 737.9

(a) During 2015, we sold the assets of Hexacomb Europe and Mexico, a corrugated products manufacturer, for $23.0 million and reduced goodwill in our Packaging segment by $2.8 million.

(b) In connection with the August 2016 acquisition of TimBar Corporation (TimBar), the Company recoded $157.3 million of goodwill in the Packaging segment. In November 2016, we acquired Columbus Container and recorded $36.6 million of goodwill in the Packaging segment. See Note 3, Acquisitions and Dispositions, for more information.

Intangible Assets

Intangible assets are comprised of customer relationships and trademarks and trade names.

The weighted average useful life, gross carrying amount, and accumulated amortization of our intangible assets were as follows (dollars in millions):

	As of December 31, 2016			As of December 31, 2015		
	Weighted Average Remaining Useful Life (in Years)	Gross Carrying Amount	Accumulated Amortization	Weighted Average Remaining Useful Life (in Years)	Gross Carrying Amount	Accumulated Amortization
Customer relationships (c)	13.1	$ 424.5	$ 79.8	13.3	$ 311.5	$ 57.3
Trademarks and trade names (c)	10.5	27.7	8.1	12.5	21.8	5.2
Other (c)	4.3	4.2	1.4	1.2	0.2	0.2
Total intangible assets (excluding goodwill)	12.9	$ 456.4	$ 89.3	13.3	$ 333.5	$ 62.7

(c) In connection with the August 2016 acquisition of TimBar, the Company recorded intangible assets of $88.0 million for customer relationships, $4.9 million for trade names, and $1.5 million for other intangibles. In November 2016, we acquired Columbus Container, Inc. and recorded intangible assets of $25.0 million for customer relationships, $1.0 million for trade names, and $0.3 million for other intangibles. See Note 3, Acquisitions and Dispositions, for more information.

Amortization expense was $26.6 million, $22.7 million, and $22.6 million for the years ended December 31, 2016, 2015, and 2014, respectively. Estimated amortization expense of intangible assets over the next five years is expected to approximate $33.3 million (2017), $32.2 million (2018), $29.5 million (2019), $29.5 million (2020), and $28.7 million (2021).

Impairment Testing

We test goodwill for impairment annually in the fourth quarter or sooner if events or changes in circumstances indicate that the carrying value of the asset may exceed fair value. Additionally, when we experience changes to our business or operating environment, we evaluate the remaining useful lives and recoverability of our finite-lived purchased intangible assets to determine whether any adjustments to the useful lives or impairment are necessary. We completed our test in the fourth quarter and there was no indication of goodwill or intangible asset impairment.

8. Accrued Liabilities

The components of accrued liabilities were as follows (dollars in millions):

	December 31,	
	2016	**2015**
Compensation and benefits	$ 120.4	$ 106.4
Medical insurance and workers' compensation	28.8	31.1
Customer volume discounts and rebates	18.9	15.3
Franchise, property, sales and use taxes	16.7	16.0
Environmental liabilities and asset retirement obligations	6.4	7.9
Severance, retention, and relocation	3.0	7.3
Other	7.0	9.5
Total	$ 201.2	$ 193.5

9. Debt

At December 31, 2016 and 2015, our long-term debt and interest rates on that debt were as follows (dollars in millions):

	December 31, 2016		December 31, 2015	
	Amount	Interest Rate	Amount	Interest Rate
Revolving Credit Facility, due August 2021	$ —	—%	$ —	—%
Five-Year Term Loan, due October 2018	—	—	25.0	1.80
Five-Year Term Loan, due August 2021	380.2	2.02	—	—
Seven-Year Term Loan, due October 2020	630.5	2.40	637.0	2.05
6.50% Senior Notes due March 2018	150.0	6.50	150.0	6.50
3.90% Senior Notes, net of discounts of $0.2 million and $0.3 million as of December 31, 2016 and 2015, respectively, due June 2022	399.8	3.90	399.7	3.90
4.50% Senior Notes, net of discount of $1.4 million and $1.5 million as of December 31, 2016 and 2015, respectively, due November 2023	698.6	4.50	698.5	4.50
3.65% Senior Notes, net of discount of $0.9 million and $1.0 million as of December 31, 2016 and 2015, due September 2024	399.1	3.65	399.0	3.65
Total	2,658.2	3.54	2,309.2	3.67
Less current portion	25.8	2.11	6.5	2.05
Less unamortized debt issuance costs	12.4		12.3	
Total long-term debt	$ 2,620.0	3.57%	$ 2,290.4	3.69%

As of December 31, 2016, the details of our borrowings were as follows:

- *Senior Unsecured Credit Agreement*. On October 18, 2013, we entered into a $1.65 billion senior unsecured credit facility. Loans bear interest at LIBOR plus a margin that is determined based upon our credit ratings. On August 29, 2016, we amended and restated our five-year credit agreement dated October 18, 2013, to finance the acquisition of TimBar Corporation. The financing consisted of:
    - *Revolving Credit Facility*: An extended $350.0 million unsecured revolving credit facility with variable interest (LIBOR plus a margin) due August 2021. During 2016, we did not borrow under the Revolving Credit Facility. At December 31, 2016, we had $25.1 million of outstanding letters of credit that were considered outstanding on the revolving credit facility, resulting in $324.9 million of unused borrowing capacity. The outstanding letters of credit were primarily for workers compensation. We are required to pay commitment fees on the unused portions of the credit facility.
    - *Five-Year Term Loan:* A new $385.0 million unsecured five-year term loan with variable interest (LIBOR plus 1.250%), payable quarterly, due August 2021. The balance outstanding at December 31, 2016 was $380.2 million.
    - *Seven-Year Term Loan*: A $650.0 million unsecured term loan with variable interest (LIBOR plus 1.625%), payable quarterly, due October 2020. The balance outstanding at December 31, 2016 was $630.5 million.
- *6.50% Senior Notes.* On March 25, 2008, we issued $150.0 million of 6.50% senior notes due March 15, 2018, through a registered public offering.
- *3.90% Senior Notes.* On June 26, 2012, we issued $400.0 million of 3.90% senior notes due June 15, 2022, through a registered public offering.
- *4.50% Senior Notes*. On October 22, 2013, we issued $700.0 million of 4.50% senior notes due November 1, 2023, through a registered public offering.
- *3.65% Senior Notes.* On September 5, 2014, we issued $400.0 million of 3.65% senior notes due September 15, 2024, through a registered public offering.

The instruments governing our indebtedness contain financial and other covenants that limit the ability of PCA and its subsidiaries to enter into sale and leaseback transactions, incur liens, incur indebtedness at the subsidiary level, enter into certain transactions with affiliates, merge or consolidate with any other person or sell or otherwise dispose of all or substantially

all of our assets. Our credit facility also requires us to comply with certain financial covenants, including maintaining a minimum interest coverage ratio and a maximum leverage ratio. A failure to comply with these restrictions could lead to an event of default, which could result in an acceleration of any outstanding indebtedness and/or prohibit us from drawing on the revolving credit facility. Such an acceleration may also constitute an event of default under the senior notes indenture. At December 31, 2016, we were in compliance with these covenants.

At December 31, 2016, we have $1,647.5 million of fixed-rate senior notes and $1,010.7 million of variable-rate term loans outstanding. At December 31, 2016, the fair value of our fixed-rate debt was estimated to be $1,717.6 million. The difference between the book value and fair value is due to the difference between the period-end market interest rate and the stated rate of our fixed-rate debt. We estimated the fair value of our fixed-rate debt using quoted market prices (Level 2 inputs), discussed further in Note 2, Summary of Significant Accounting Policies. The fair value of our variable-rate term debt approximates the carrying amount as our cost of borrowing is variable and approximates current market rates.

Repayments, Interest, and Other

In 2016, we used cash on hand to make principal payments of $25.0 million under the Five-Year Term Loan, due October 2018 (which is no longer outstanding), $4.8 million under the Five-Year Term Loan, due August 2021, and $6.5 million under the Seven-Year Term Loan, due October 2020.

In 2015, we used cash on hand to repay $40.0 million of debt outstanding under the Five-Year Term Loan, due October 2018 and $6.5 million under the Seven-Year Term Loan, due October 2020.

In 2014, we used the proceeds of our $400.0 million of 3.65% fixed-rate senior notes offering and other cash on hand to repay $591.5 million of debt outstanding under the Five-Year Term Loan, due October 2018 and Seven-Year Term Loan, due October 2020.

As of December 31, 2016, annual principal maturities for debt, excluding unamortized debt discount, are: $25.8 million for 2017; $175.8 million for 2018; $25.8 million for 2019; $630.3 million for 2020; $303.2 million for 2021; and $1.5 billion for 2022 and thereafter.

At December 31, 2016, the reference interest rate (LIBOR) for our Five-Year Term Loan, due August 2021, was 0.77% and the applicable margin was 1.250%. At December 31, 2015, the reference interest rate (LIBOR) for our Five-Year Term Loan, due October 2018, was 0.42% and the applicable margin was 1.375%. At December 31, 2016 and 2015, the reference interest rate (LIBOR) for our Seven-Year Term Loan, due October 2020, was 0.77% and 0.42%, respectively. At both December 31, 2016 and 2015, the applicable margin on our Seven-Year Term Loan, due October 2020, was 1.625%.

Interest payments and redemption premium payments paid in connection with the Company’s debt obligations for the years ended December 31, 2016, 2015, and 2014, were $88.3 million, $85.5 million, and $77.0 million, respectively.

Included in interest expense, net, are amortization of financing costs and amortization of treasury lock settlements. Amortization of treasury lock settlements was a $5.7 million net loss in 2016, 2015, and 2014. Amortization of financing costs in 2016, 2015, and 2014 was $1.9 million, $1.8 million, and $3.3 million (including $1.5 million write-off of deferred financing costs related to the September 2014 debt refinancing), respectively.

10. Employee Benefit Plans and Other Postretirement Benefits

PCA has defined pension benefit plans for both salaried and hourly employees. The plans covering salaried employees are closed to new entrants with only certain current active participants still accruing benefits. The plans covering certain hourly employees are closed to new participants. We also have a Supplemental Executive Retirement Plan (SERP) and other nonqualified defined benefit pension plans that provide unfunded supplemental retirement benefits to certain of our executives and former executives. The SERP provides for incremental pension benefits in excess of those offered in our principal pension plans.

Other Postretirement Benefits

PCA provides postretirement medical benefits for certain salaried employees and postretirement medical and life insurance benefits for certain hourly employees. For salaried employees, the plan covers employees retiring from PCA on or after attaining age 58 who have had at least 10 years of full-time service with PCA after attaining age 48. In April 2016, the

Company provided notice to eligible participants that the Salaried Retiree Medical Plan would be frozen as of December 31, 2016. As a result of the freeze, eligible plan participants who did not retire and elect coverage before December 31, 2016 would lose benefits attributable to service already rendered. In accordance with Accounting Standards Codification (ASC) 715, "Compensation--Retirement Benefits", the Company remeasured the Salaried Retiree Medical Plan benefit obligation using current assumptions, resulting in a decrease in the benefit obligation of $5.1 million with a corresponding increase in accumulated other comprehensive income of $3.1 million and deferred income taxes of $2.0 million.

Obligations and Funded Status of Defined Benefit Pension and Other Postretirement Benefits Plans

The funded status of PCA's plans change from year to year based on the plan asset investment return, contributions, benefit payments, the discount rate used to measure the liability, and expected participant longevity. The following table, which includes only company-sponsored defined benefit and other postretirement benefit plans, reconciles the beginning and ending balances of the projected benefit obligation and the fair value of plan assets. We recognize the unfunded status of these plans on the Consolidated Balance Sheets, and we recognize changes in funded status in the year changes occur through the Consolidated Statements of Comprehensive Income (dollars in millions):

	Pension Plans		**Postretirement Plans**	
	Year Ended December 31		**Year Ended December 31**	
	2016	**2015**	**2016**	**2015**
Change in Benefit Obligation				
Benefit obligation at beginning of period	$ 1,092.5	$ 1,129.6	$ 21.4	$ 31.9
Service cost	24.5	24.0	0.5	1.7
Interest cost	40.9	46.2	0.6	1.2
Plan amendments	1.8	3.0	(5.3)	—
Actuarial (gain) loss (a)	35.3	(75.7)	3.7	(11.4)
Participant contributions	—	—	1.3	1.2
Benefits paid	(36.6)	(34.6)	(2.7)	(3.2)
Benefit obligation at plan year end	$ 1,158.4	$ 1,092.5	$ 19.5	$ 21.4
Accumulated benefit obligation portion of above	$ 1,116.6	$ 1,048.5		
Change in Fair Value of Plan Assets				
Plan assets at fair value at beginning of period	$ 764.4	$ 805.9	$ —	$ —
Actual return on plan assets	44.4	(8.1)	—	—
Company contributions	58.2	1.2	1.4	2.0
Participant contributions	—	—	1.3	1.2
Benefits paid	(36.6)	(34.6)	(2.7)	(3.2)
Fair value of plan assets at plan year end	$ 830.4	$ 764.4	$ —	$ —
Underfunded status	**$ (328.0)**	**$ (328.1)**	**$ (19.5)**	**$ (21.4)**
Amounts Recognized on Consolidated Balance Sheets				
Current liabilities	$ (1.3)	$ (0.9)	$ (1.2)	$ (1.1)
Noncurrent liabilities	(326.7)	(327.2)	(18.3)	(20.3)
Accrued obligation recognized at December 31	**$ (328.0)**	**$ (328.1)**	**$ (19.5)**	**$ (21.4)**
Amounts Recognized in Accumulated Other Comprehensive (Income) Loss (Pre-Tax)				
Prior service cost (credit)	$ 21.1	$ 25.1	$ (5.0)	$ 0.2
Actuarial loss (gain)	183.9	149.4	(1.9)	(6.0)
Total	**$ 205.0**	**$ 174.5**	**$ (6.9)**	**$ (5.8)**

(a) The actuarial loss in 2016 was due primarily to a decrease in the weighted average discount rate used to estimate our pension benefit obligations, and updated mortality assumptions from the Society of Actuaries. In 2015, the increase in the weighted average

discount rate used to estimate our pension benefit obligations and changes in mortality assumptions from the Society of Actuaries resulted in an actuarial gain.

Components of Net Periodic Benefit Cost and Other Comprehensive (Income) Loss

The components of net periodic benefit cost and other comprehensive (income) loss (pretax) were as follows (dollars in millions):

	Pension Plans			Postretirement Plans		
	Year Ended December 31			Year Ended December 31		
	2016	2015	2014	2016	2015	2014
Service cost	$ 24.5	$ 24.0	$ 22.7	$ 0.5	$ 1.7	$ 1.6
Interest cost	40.9	46.2	45.9	0.6	1.2	1.2
Expected return on plan assets	(49.5)	(53.1)	(50.7)	—	—	—
Special termination benefits	—	—	0.3	—	—	—
Net amortization of unrecognized amounts						
Prior service cost (credit)	5.7	5.5	6.5	(0.1)	0.1	(0.2)
Actuarial loss	5.8	8.7	0.6	(0.4)	0.1	0.1
Net periodic benefit cost	$ 27.4	$ 31.3	$ 25.3	$ 0.6	$ 3.1	$ 2.7
Changes in plan assets and benefit obligations recognized in other comprehensive (income) loss						
Actuarial net (gain) loss	$ 40.4	$ (14.5)	$ 146.4	$ 3.6	$ (11.4)	$ 4.2
Prior service cost (credit)	1.8	3.0	2.6	(5.3)	—	—
Amortization of prior service cost	(5.7)	(5.5)	(6.5)	(0.3)	(0.1)	0.2
Amortization of actuarial loss	(5.8)	(8.7)	(0.6)	0.8	(0.1)	(0.1)
Total recognized in other comprehensive (income) loss (a)	30.7	(25.7)	141.9	(1.2)	(11.6)	4.3
Total recognized in net periodic benefit cost and other comprehensive (income) loss - pretax	$ 58.1	$ 5.6	$ 167.2	$ (0.6)	$ (8.5)	$ 7.0

(a) Accumulated losses in excess of 10% of the greater of the projected benefit obligation or the market-related value of assets will be recognized on a straight-line basis over the average remaining service period of active employees in PCA plans (which is between seven to ten years) and over average remaining lifetime of inactive participants of Boise plans (which is between 26 and 29 years), to the extent that losses are not offset by gains in subsequent years. The estimated net loss and prior service cost that will be amortized from "Accumulated other comprehensive loss" into net periodic benefit in 2017 is $12.7 million.

The accumulated benefit obligations for the plans with obligations in excess of plan assets, is $1.0 billion.

Assumptions

The following table presents the assumptions used in the measurement of our benefits obligations:

	Pension Plans			**Postretirement Plans**		
	December 31			**December 31**		
	2016	**2015**	**2014**	**2016**	**2015**	**2014**
Weighted-Average Assumptions Used to Determine Benefit Obligations at December 31						
Discount rate	4.24%	4.51%	4.14%	3.91%	4.35%	3.95%
Rate of compensation increase	4.00%	4.00%	4.00%	N/A	N/A	N/A
Weighted-Average Assumptions Used to Determine Net Periodic Benefit Cost for the Years Ended December 31						
Discount rate	4.49%	4.14%	5.00%	4.17%	3.95%	4.85%
Expected return on plan assets	6.57%	6.73%	6.69%	N/A	N/A	N/A
Rate of compensation increase	4.00%	4.00%	4.00%	N/A	N/A	N/A

Discount Rate Assumption. The discount rate reflects the current rate at which the pension obligations could be settled on the measurement date: December 31. The discount rate assumption used to calculate the present value of pension and postretirement benefit obligations reflects the rates available on high-quality, fixed-income debt instruments on December 31. In all periods, the bonds included in the models reflect anticipated investments that would be made to match the expected monthly benefit payments over time. The plans' projected cash flows were duration-matched to these models to develop an appropriate discount rate.

Beginning in 2016, we refined the method used to determine the service and interest cost components of our net periodic benefit cost. Previously, the cost was determined using a single weighted-average discount rate derived from the yield curve. Under the refined method, known as the spot rate approach, we will use individual spot rates along the yield curve that correspond with the timing of each benefit payment. We believe this change provides a more precise measurement of service and interest costs by improving the correlation between projected cash outflows and corresponding spot rates on the yield curve.

Asset Return Assumption. The expected return on plan assets reflects the expected long-term rates of return for the categories of investments currently held in the plans as well as anticipated returns for additional contributions made in the future. The expected long-term rate of return is adjusted when there are fundamental changes in expected returns on the plan investments. The weighted-average expected return on plan assets we will use in our calculation of 2017 net periodic pension benefit cost is 6.55%.

Rate of Compensation Increase. The rate of compensation increase is determined by PCA based upon annual reviews. The compensation increase assumption is not applicable for all plans as many of our pension plans are frozen and not accruing benefits.

Health Care Cost Trend Rate Assumptions. PCA assumed health care cost trend rates for its postretirement benefits plans were as follows:

	2016	**2015**	**2014**
Health care cost trend rate assumed for next year	7.35%	7.60%	7.75%
Rate to which the cost trend rate is assumed to decline (the ultimate trend rate)	4.50%	4.50%	5.00%
Year that the rate reaches the ultimate trend rate	2025	2024	2023

Postretirement Health Care Plan Assumptions. For postretirement health care plan accounting, PCA reviews external data and its own historical trends for health care costs to determine the health care cost trend rate assumption.

A one-percentage point change in assumed health care cost trend rates would have the following effects on the 2016 postretirement benefit obligation and the 2016 net post retirement benefit cost (dollars in millions):

	1-Percentage Point Increase	1-Percentage Point Decrease
Effect on postretirement benefit obligation	$ 1.0	$ (0.9)
Effect on net postretirement benefit cost	0.1	(0.1)

Investment Policies and Strategies

PCA has retained the services of professional advisors to oversee pension investments and provide recommendations regarding investment strategy. PCA’s overall strategy and related apportionments between equity and debt securities may change from time to time based on market conditions, external economic factors, and the funded status of the plans. The general investment objective for all of our plan assets is to optimize growth of the pension plan trust assets, while minimizing the risk of significant losses to enable the plans to satisfy their benefit payment obligations over time. The objectives take into account the long-term nature of the benefit obligations, the liquidity needs of the plans, and the expected risk/return trade-offs of the asset classes in which the plans may choose to invest. Assets of our pension plans were invested in the following classes of securities at December 31, 2016 and 2015:

	Percentage of Fair Value	
	2016	2015
Fixed income securities	54%	55%
International equity securities	23	22
Domestic equity securities	21	20
Real estate securities	1	1
Other	1	2

At December 31, 2016, the targeted investment allocations differed between the acquired Boise plans and PCA's historical plans based on funded status. At December 31, 2016, PCA's historical plans, which comprised $328.6 million of the fair value of plan assets, targeted 44% invested in equities, 53% invested in bonds, and 3% in other, whereas the Boise plans, which comprised $501.8 million of the total fair value of plan assets, targeted 45% in equities and 55% in bonds. Our retirement committee reviews the investment allocations for reasonableness at a minimum, semi-annually.

Investment securities, in general, are exposed to various risks, such as interest rate, credit, and overall market volatility risk, all of which are subject to change. Due to the level of risk associated with some investment securities, it is reasonably possible that changes in the values of investment securities will occur in the near term, and such changes could materially affect the reported amounts.

Fair Value Measurements of Plan Assets

The following tables set forth, by level within the fair value hierarchy, discussed in Note 2, Summary of Significant Accounting Policies, the pension plan assets, by major asset category, at fair value at December 31, 2016 and 2015 (dollars in millions):

	Fair Value Measurements at December 31, 2016			
Asset Category	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**	**Total**
Short-term investments (a)	$ —	$ 1.5	$ —	$ 1.5
Mutual funds (b):				
Domestic equities	65.7	—	—	65.7
International equities	68.7	—	—	68.7
Real estate	9.6	—	—	9.6
Fixed income	108.4	64.8	—	173.2
Common/collective trust funds (a):				
Domestic equities	—	107.9	—	107.9
International equities	—	124.5	—	124.5
Fixed income	—	271.6	—	271.6
Private equity securities (c)	—	—	5.7	5.7
Total securities at fair value	$ 252.4	$ 570.3	$ 5.7	$ 828.4
Receivables and accrued expenses				2.0
Total fair value of plan assets				$ 830.4

	Fair Value Measurements at December 31, 2015			
Asset Category	**Quoted Prices in Active Markets for Identical Assets (Level 1)**	**Significant Other Observable Inputs (Level 2)**	**Significant Unobservable Inputs (Level 3)**	**Total**
Short-term investments (a)	$ —	$ 4.1	$ —	$ 4.1
Mutual funds (b):				
Domestic equities	47.1	—	—	47.1
International equities	50.7	—	—	50.7
Real estate	8.5	—	—	8.5
Fixed income	156.5	—	—	156.5
Common/collective trust funds (a):				
Domestic equities	—	104.4	—	104.4
International equities	—	121.6	—	121.6
Fixed income	—	263.0	—	263.0
Private equity securities (c)	—	—	6.4	6.4
Total securities at fair value	$ 262.8	$ 493.1	$ 6.4	$ 762.3
Receivables and accrued expenses				2.1
Total fair value of plan assets				$ 764.4

(a) Investments in common/collective trust funds valued using net asset values (NAV) provided by the administrator of the funds. The NAV is based on the value of the underlying assets owned by the fund, minus its liabilities, and then divided by the number of units outstanding. While the underlying assets are actively traded on an exchange, the funds are not. There are currently no redemption restrictions on these investments. There are certain funds with one-day redeemable notice.

(b) Investments in mutual funds valued at quoted market values on the last business day of the fiscal year.

(c) Investments in this category are invested in the Pantheon Global Secondary Fund IV, LP. The fund specializes in investments in the private equity secondary market and occasionally directly in private companies to maximize capital growth. Fund investments are carried at fair value as determined quarterly using the market approach to estimate the fair value of private investments. The market approach utilizes prices and other relevant information generated by market transactions, type of security, size of the position, degree of liquidity, restrictions on the disposition, latest round of financing data, current financial position, and operating results, among other factors. In circumstances where fair values are not provided with respect to any of the company's fund investments, the investment advisor will seek to determine the fair value of such investments based on information provided by the general partners or managers of such funds or from other sources. Audited financial statements are provided by fund management annually. Notwithstanding the above, the variety of valuation bases adopted and quality of management data of the ultimate underlying investee companies means that there are inherent difficulties in determining the value of the investments. Amounts realized on the sale of these investments may differ from the calculated values. Boise had originally committed to a $15.0 million investment, with $5.0 million of the commitment unfunded at December 31, 2016.

The following table sets forth a summary of changes in the fair value of the pension plans' Level 3 assets for the year ended December 31, 2016 (dollars in millions):

	2016
Balance, beginning of year	$ 6.4
Sales	(0.7)
Balance, end of year	$ 5.7

Funding and Cash Flows

PCA makes pension plan contributions that are sufficient to fund its actuarially determined costs, generally equal to the minimum amounts required by the Employee Retirement Income Security Act (ERISA). From time to time, PCA may make discretionary contributions based on the funded status of the plans, tax deductibility, income from operations, and other factors. In 2016, we made contributions of $57.1 million to our qualified pension plans. In 2015, we did not make contributions to our qualified pension plans. In 2014, we contributed $0.4 million to our qualified pension plans. We expect to contribute at least the estimated required minimum contributions to our qualified pension plans of approximately $8.0 million in 2017.

The following are estimated benefit payments to be paid to current plan participants by year (dollars in millions). Qualified pension benefit payments are paid from plan assets, while nonqualified pension benefit payments are paid by the Company.

	Pension Plans	Postretirement Plans
2017	$ 41.1	$ 1.2
2018	45.0	1.3
2019	48.9	1.3
2020	52.6	1.4
2021	56.2	1.3
2021 - 2025	327.7	6.1

Defined Contribution Plans

Some of our employees participate in contributory defined contribution savings plans, available to most of our salaried and hourly employees. The defined contribution plans permit participants to make contributions by salary reduction pursuant to Section 401(k) of the Code. PCA made employer-matching contributions of $40.4 million, $37.9 million, and $28.3 million in 2016, 2015, and 2014, respectively. In 2015 and 2014, Company matching contributions to certain full-time salaried employees were made in company stock, through our Employee Stock Ownership Plan (ESOP). All other matching contributions were in cash. Beginning in 2016, all company-matching contributions to all employees were made in cash. We expense employer matching contributions and charge dividends on shares held by the ESOP to retained earnings. Shares of company stock held by the ESOP are included in basic shares for earnings-per-share computations. At both December 31, 2016 and 2015, the ESOP held 2.2 million shares of company stock.

Certain salaried and hourly employees that are not participating in a PCA sponsored defined benefit pension plan receive a service-related company retirement contribution to their defined contribution plan account in addition to any employer matching contribution. This contribution increases with years of service and ranges from 3% to 5% of base pay. We contributed

$14.9 million, $12.4 million, and $7.4 million for this retirement contribution during the years ended December 31, 2016, 2015, and 2014, respectively.

Deferred Compensation Plans

Key managers can elect to participate in a deferred compensation plan. The deferred compensation plan is unfunded; therefore, benefits are paid from our general assets. At December 31, 2016 and 2015, we had $13.7 million and $12.8 million, respectively, of liabilities attributable to participation in our deferred compensation plan on our Consolidated Balance Sheets.

11. Asset Retirement Obligations

Our asset retirement obligations relate predominantly to landfill closure, wastewater treatment pond dredging, closed-site monitoring costs, and certain leasehold improvements. In accordance with ASC 410, "Asset Retirement and Environmental Obligations," we recognize the fair value of these liabilities as an asset retirement obligation and capitalize that cost as part of the cost basis of the related asset in the period in which the costs are incurred if sufficient information is available to reasonably estimate the fair value of the obligation. Fair value estimates are determined using Level 3 inputs in the fair value hierarchy. The fair value of our asset retirement obligations is measured using expected future cash outflows discounted using the company's credit-adjusted risk-free interest rate. Over time, the liability is accreted to its settlement value, and the capitalized cost is depreciated over the useful life of the related asset. These liabilities are based on the best estimate of costs and are updated periodically to reflect current technology, laws and regulations, inflation, and other economic factors. Occasionally, we become aware of events or circumstances that require us to revise our future estimated cash flows. When revisions become necessary, we recalculate our obligation and adjust our asset and liability accounts utilizing appropriate discount rates. No assets are legally restricted for purposes of settling asset retirement obligations. Upon settlement of the liability, we will recognize a gain or loss for any difference between the settlement amount and the liability recorded.

The following table describes changes to the asset retirement obligation liability (dollars in millions):

	Year Ended December 31	
	2016	**2015**
Asset retirement obligation at beginning of period	$ 26.2	$ 37.0
Accretion expense	2.3	2.1
Payments	(2.2)	(1.6)
Revisions in estimated cash flows	1.2	0.2
Liabilities incurred	0.5	(0.3)
Sale of St. Helens (a)	—	(11.2)
Asset retirement obligation at end of period	$ 28.0	$ 26.2

(a) In September 2015, we sold the remaining land, buildings, and equipment at our paper mill site in St. Helens, Oregon where we ceased paper production in December 2012. We recorded a $6.7 million gain on the sale. In connection with the sale, we eliminated $11.2 million of asset retirement obligations that were assumed by the buyer.

We have additional asset retirement obligations with indeterminate settlement dates. The fair value of these asset retirement obligations cannot be estimated due to the lack of sufficient information to estimate the settlement dates of the obligations. These asset retirement obligations include, for example, (i) removal and disposal of potentially hazardous materials related to equipment and/or an operating facility if the equipment and/or facilities were to undergo major maintenance, renovation, or demolition and (ii) storage sites or owned facilities for which removal and/or disposal of chemicals and other related materials are required if the operating facility is closed. We will recognize a liability in the period in which sufficient information becomes available to reasonably estimate the fair value of these obligations.

12. Share-Based Compensation

The Company has a long-term equity incentive plan, which allows for grants of stock options, stock appreciation rights, restricted stock, and performance awards to directors, officers, and employees, as well as others who engage in services for PCA. The plan, as amended, terminates May 1, 2023, and authorizes 10.6 million shares of common stock for grant over the life of the plan. As of December 31, 2016, 1.2 million shares remained available for future issuance under the plan. Forfeitures are added back to the pool of shares of common stock available to be granted at a future date.

Restricted Stock

Restricted stock awards granted to officers and employees generally vest at the end of a four-year period, and restricted stock awards granted to directors vest immediately. The fair value of restricted stock is determined based on the closing price of the Company's stock on the grant date. A summary of the Company's restricted stock activity follows:

	2016		2015		2014	
	Shares	Weighted Average Grant- Date Fair Value	Shares	Weighted Average Grant- Date Fair Value	Shares	Weighted Average Grant- Date Fair Value
Restricted stock at January 1	1,007,794	$ 49.47	1,184,299	$ 41.71	1,463,694	$ 31.48
Granted	242,835	67.48	218,957	65.16	229,489	70.24
Vested (a)	(443,627)	34.11	(389,481)	32.77	(507,222)	26.29
Forfeitures	(20,923)	59.63	(5,981)	66.42	(1,662)	61.05
Restricted stock at December 31	786,079	$ 63.44	1,007,794	$ 49.47	1,184,299	$ 41.71

(a) The total fair value of awards upon vesting for the years ended December 31, 2016, 2015, and 2014 was $28.8 million, $26.3 million, and $36.4 million, respectively.

Performance Units

Performance award units granted to certain key employees vest four years after the grant date based on the achievement of defined performance rankings compared to a peer group. The performance units are paid out entirely in shares of the Company's common stock. The awards are valued at the closing price of the Company's stock on the grant date and expensed over the requisite service period based on the most probable number of awards expected to vest.

	2016		2015		2014	
	Units	Weighted Average Grant- Date Fair Value	Units	Weighted Average Grant- Date Fair Value	Units	Weighted Average Grant-Date Fair Value
Performance units at January 1	175,675	$ 59.94	127,489	$ 58.25	70,600	$ 47.83
Granted	77,017	67.57	53,102	65.04	56,889	71.19
Vested (a)	(20,604)	57.58	(4,916)	71.19	—	—
Performance units at December 31	232,088	$ 62.68	175,675	$ 59.94	127,489	$ 58.25

(a) The total fair value of awards upon vesting for the year ended December 31, 2016 was $1.1 million. Upon vesting of the awards, PCA issued 21,111 shares of its common stock, which included 507 shares for dividends accrued during the vesting period.

Compensation Expense

Our share-based compensation expense is recorded in "Selling, general, and administrative expenses." Compensation expense for share-based awards recognized in the Consolidated Statements of Income, net of forfeitures was as follows (dollars in millions):

	Year Ended December 31		
	2016	2015	2014
Restricted stock	$ 15.8	$ 15.2	$ 13.8
Performance units	3.9	3.0	1.8
Impact on income before income taxes	19.7	18.2	15.6
Income tax benefit	(7.7)	(7.1)	(6.1)
Impact on net income	$ 12.0	$ 11.1	$ 9.5

The fair value of restricted stock and performance units is determined based on the closing price of the Company's common stock on the grant date. As PCA's Board of Directors has the ability to accelerate vesting of share-based awards upon an employee's retirement, the Company accelerates the recognition of compensation expense for certain employees approaching normal retirement age.

The unrecognized compensation expense for all share-based awards was as follows (dollars in millions):

	December 31, 2016	
	Unrecognized Compensation Expense	Remaining Weighted Average Recognition Period (in years)
Restricted stock	$ 27.1	2.7
Performance units	8.1	2.8
Total unrecognized share-based compensation expense	$ 35.2	2.7

We evaluate share-based compensation expense on a quarterly basis based on our estimate of expected forfeitures, review of recent forfeiture activity, and expected future turnover. We recognize the effect of adjusting the forfeiture rate for all expense amortization in the period that we change the forfeiture estimate. The effect of forfeiture adjustments was insignificant in all periods presented.

13. Derivative Instruments and Hedging Activities

Hedging Strategy

When appropriate, we use derivatives as a risk management tool to mitigate the potential impact of certain market risks. The primary risks managed by using derivative financial instruments are interest rate risks. We do not enter into derivative financial instruments for trading or speculative purposes.

Interest Rate Risk

The Company has used treasury lock derivative instruments to manage interest costs and the risk associated with changing interest rates. In connection with contemplated issuances of ten-year debt securities, PCA entered into interest rate protection agreements with counterparties in 2008, 2010, and 2011 to protect against increases in the ten-year U.S. Treasury Note rate. These treasury rates served as references in determining the interest rates applicable to the debt securities the Company issued in March 2008, February 2011, and June 2012. As a result of changes in the interest rates on those treasury securities between the time PCA entered into the derivative agreements and the time PCA priced and issued the debt securities, the Company: (1) made a payment of $4.4 million to the counterparty upon settlement of the 2008 interest rate protection agreement on March 25, 2008; (2) received a payment of $9.9 million from the counterparties upon settlement of the 2010 interest rate protection agreements on February 4, 2011; and (3) made a payment of $65.5 million to the counterparty upon settlement of the 2011 interest rate protection agreement on June 26, 2012. The Company recorded the effective portion of the settlements in AOCI, and these amounts are being amortized over the terms of the respective notes.

Derivative Instruments

The impact of derivative instruments on the consolidated statements of income and accumulated OCI was as follows (dollars in millions):

	Net Loss Recognized in Accumulated OCI (Effective Portion) December 31	
	2016	2015
Treasury locks, net of tax	$ (17.7)	$ (21.2)

	Gain (Loss) Reclassified from Accumulated OCI into Income (Effective Portion) Year Ended December 31		
	2016	2015	2014
Amortization of treasury locks (included in interest expense, net)	$ (5.7)	$ (5.7)	$ (5.7)

The net amount of settlement gains or losses on derivative instruments included in accumulated OCI to be amortized over the next 12 months is a net loss of $5.7 million ($3.5 million after-tax).

14. Stockholders' Equity

Dividends

During the year ended December 31, 2016, we paid $216.1 million of dividends to shareholders. On December 13, 2016, PCA's Board of Directors approved a regular quarterly cash dividend of $0.63 per share, which was paid on January 13, 2017, to shareholders of record as of December 23, 2016. The dividend payment was $59.4 million.

On August 31, 2016, PCA announced an increase of its quarterly cash dividend on its common stock from an annual payout of $2.20 per share to an annual payout of $2.52 per share. The first quarterly dividend of $0.63 per share was paid on October 14, 2016 to shareholders of record as of September 15, 2016.

Share Repurchase Program

On February 25, 2016, PCA announced that its Board of Directors authorized the repurchase of $200.0 million of the Company's outstanding common stock. At the time of the announcement, there was no remaining authority under previously announced programs. Repurchases may be made from time to time in open market or privately negotiated transactions in accordance with applicable securities regulations. The timing and amount of repurchases will be determined by the company in its discretion based on factors such as PCA’s stock price and market and business conditions.

Share repurchase activity follows (in millions, except share and per share amounts).

	Shares	Weighted Average Price Per Share	Total
2015	2,326,493	$ 66.50	$ 154.7
2016	1,987,187	$ 50.49	$ 100.3

All shares repurchased have been retired. At December 31, 2016, $193.0 million of the authorized amount remained available for repurchase of the Company's common stock.

Accumulated Other Comprehensive Income (Loss)

Changes in AOCI, net of taxes, by component follows (dollars in millions). Amounts in parentheses indicate losses.

	Unrealized Loss On Treasury Locks, Net	Unrealized Loss on Foreign Exchange Contracts	Unfunded Employee Benefit Obligations	Total
Balance at December 31, 2015	$ (21.2)	$ (0.4)	$ (103.3)	$ (124.9)
Other comprehensive income (loss) before reclassifications, net of tax	—	—	(24.9)	(24.9)
Amounts reclassified from AOCI, net of tax	3.5	—	6.7	10.2
Net current-period other comprehensive income (loss)	3.5	—	(18.2)	(14.7)
Balance at December 31, 2016	$ (17.7)	$ (0.4)	$ (121.5)	$ (139.6)

The following table presents information about reclassifications out of AOCI (dollars in millions). Amounts in parentheses indicate expenses in the Consolidated Statements of Income.

	Amounts Reclassified from AOCI Year Ended December 31		
Details about AOCI Components	**2016**	**2015**	**Affected Line Item in the Statement Where Net Income is Presented**
Foreign currency translation adjustments	$ —	$ (4.2)	Other expense, net
	—	—	Tax benefit
	$ —	$ (4.2)	Net of tax
Unrealized loss on treasury locks, net	$ (5.7)	$ (5.7)	See (a) below
	2.2	2.2	Tax benefit
	$ (3.5)	$ (3.5)	Net of tax
Unfunded employee benefit obligations			
Amortization of prior service costs	$ (5.5)	$ (5.6)	See (b) below
Amortization of actuarial gains / (losses)	(5.4)	(8.8)	See (b) below
	(10.9)	(14.4)	Total before tax
	4.2	5.6	Tax benefit
	$ (6.7)	$ (8.8)	Net of tax

(a) This AOCI component is included in interest expense, net. Amount relates to the amortization of the effective portion of treasury lock derivative instruments recorded in AOCI. The net amount of settlement gains or losses on derivative instruments included in AOCI to be amortized over the next 12 months is a net loss of $5.7 million ($3.5 million after-tax). For a discussion of treasury lock derivative instrument activity, see Note 13, Derivative Instruments and Hedging Activities, for additional information.

(b) These AOCI components are included in the computation of net pension and postretirement benefit costs. See Note 10, Employee Benefit Plans and Other Postretirement Benefits, for additional information.

15. Concentrations of Risk

Our Paper segment has had a long-standing commercial and contractual relationship with Office Depot, our largest customer in the paper business. This relationship exposes us to a significant concentration of business and financial risk. Our sales to Office Depot represented 8% and 9% of our total company sales for 2016 and 2015, respectively, and about 42% and 45% of our Paper segment sales revenue for those periods, respectively. At December 31, 2016 and 2015, we had $31.8 million and $39.5 million of accounts receivable due from Office Depot, respectively, which represents 5% and 6% of our total company receivables, respectively.

In 2016, sales to Office Depot represented 42% of our Paper segment sales. If these sales are reduced, we would need to find new customers. We may not be able to fully replace any lost sales, and any new sales may be at lower prices or higher costs. Any significant deterioration in the financial condition of Office Depot affecting its ability to pay or any other change that affects its willingness to purchase our products will harm our business and results of operations.

During the second quarter of 2016, Office Depot and Staples terminated their merger agreement, and the acquisition of Office Depot by Staples was not completed. We continue to do business in the ordinary course with Office Depot.

Labor

At December 31, 2016, we had approximately 14,000 employees and approximately 50% of these employees worked pursuant to collective bargaining agreements. Approximately 70% of our hourly employees are represented by unions. The majority of our unionized employees are represented by the United Steel Workers (USW), the International Brotherhood of Teamsters (IBT), the International Association of Machinists (IAM), and the Association of Western Pulp and Paper Workers (AWPPW). Approximately 20% of our employees work pursuant to collective bargaining agreements that will expire within the next twelve months.

16. Transactions With Related Parties

Louisiana Timber Procurement Company, L.L.C. (LTP) is a variable-interest entity that is 50% owned by PCA and 50% owned by Boise Cascade Company (Boise Cascade). LTP procures sawtimber, pulpwood, residual chips, and other residual wood fiber to meet the wood and fiber requirements of PCA and Boise Cascade in Louisiana. PCA is the primary beneficiary of LTP, and has the power to direct the activities that most significantly affect the economic performance of LTP. Therefore, we consolidate 100% of LTP in our financial statements in our Corporate and Other segment. The carrying amounts of LTP's assets and liabilities (which relate primarily to non-inventory working capital items) on our Consolidated Balance Sheets were both $5.0 million at December 31, 2016, and $4.5 million at December 31, 2015. For 2016, 2015, and 2014, we recorded $86.9 million, $88.8 million, and $75.8 million, respectively, of LTP sales to Boise Cascade in "Net Sales" in the Consolidated Statements of Income and approximately the same amount of expenses in "Cost of Sales".

For 2016, 2015, and 2014, fiber purchases from related parties were $17.2 million, $20.7 million, and $28.7 million, respectively. Most of these purchases related to chip and log purchases by LTP from Boise Cascade's wood products business. These purchases are recorded in "Cost of Sales" in the Consolidated Statements of Income.

17. Segment Information

We report our business in three reportable segments: Packaging, Paper, and Corporate and Other. These segments represent distinct businesses that are managed separately because of differing products and services. Each of these businesses require distinct operating and marketing strategies.

Packaging. We manufacture and sell a wide variety of corrugated packaging products, including conventional shipping containers used to protect and transport manufactured goods, multi-color boxes and displays with strong visual appeal that help to merchandise the packaged product in retail locations. In addition, we are a large producer of packaging for meat, fresh fruit and vegetables, processed food, beverages, and other industrial and consumer products.

Paper. We manufacture and sell a range of white papers, including communication papers, and pressure sensitive papers, and market pulp. Our white papers can be manufactured as either commodity papers or specialty papers with specialized or custom features, such as colors, coatings, high brightness, or recycled content. We ship to customers both directly from our mills and through distribution centers. In 2016, our sales to Office Depot, our largest Paper segment customer,

represented 42% of our Paper segment sales revenue. Sales for market pulp decreased in 2016 as we ceased softwood market pulp operations at our Wallula, Washington mill with the permanent shutdown of the No.1 machine.

Corporate and Other. Our Corporate and Other segment includes corporate support staff services and related assets and liabilities, and foreign exchange gains and losses. This segment also includes transportation assets, such as rail cars and trucks, which we use to transport our products from some of our manufacturing sites and assets related to LTP. See Note 16, Transactions With Related Parties, for more information related to LTP. Sales in this segment relate primarily to LTP and our rail and truck business. We provide transportation services not only to our own facilities but also, on a limited basis, to third parties when geographic proximity and logistics are favorable. Rail cars and trucks are generally leased.

Each segments' profits and losses are measured on operating profits before interest expense and interest income. For many of these allocated expenses, the related assets and liabilities remain in the Corporate and Other segment.

Segment sales to external customers by product line were as follows (dollars in millions):

	Year Ended December 31		
	2016	2015	2014
Packaging sales	$ 4,584.8	$ 4,477.3	$ 4,540.3
Paper sales			
White papers	1,065.8	1,089.6	1,138.5
Market pulp	28.1	53.5	62.9
	1,093.9	1,143.1	1,201.4
Corporate and Other	100.3	121.3	110.9
	$ 5,779.0	$ 5,741.7	$ 5,852.6

Sales to foreign unaffiliated customers during the years ended December 31, 2016, 2015, and 2014 were $289.5 million, $177.2 million, and $378.8 million, respectively. At December 31, 2016 and 2015, we did not have significant long-lived assets held by foreign operations. At December 31, 2014, the net carrying value of long-lived assets held by foreign operations, all of which were in our Packaging segment, was $12.4 million. The sales to foreign unaffiliated customers and the net carrying value of long-lived assets held by foreign operations decreased in 2015 as we completed the sale of our Hexacomb corrugated manufacturing operations in Europe and Mexico on April 1, 2015.

An analysis of operations by reportable segment is as follows (dollars in millions):

	Sales, net							
Year Ended December 31, 2016	Trade	Inter-segment	Total	Operating Income (Loss)		Depreciation, Amortization, and Depletion	Capital Expenditures (j)	Assets
Packaging	$ 4,577.4	$ 7.4	$ 4,584.8	$ 711.1	(a)	$ 293.3	$ 239.9	$ 4,530.5
Paper	1,093.9	—	1,093.9	138.1	(b)	59.6	31.6	946.2
Corporate and Other	107.7	139.2	246.9	(68.9)	(c)	5.1	2.8	300.3
Intersegment eliminations	—	(146.6)	(146.6)	—		—	—	—
	$ 5,779.0	$ —	$ 5,779.0	780.3		$ 358.0	$ 274.3	$ 5,777.0
Interest expense, net				(91.8)				
Income before taxes				$ 688.5				

Year Ended December 31, 2015	Sales, net Trade	Inter-segment	Total	Operating Income (Loss)		Depreciation, Amortization, and Depletion	Capital Expenditures (j)	Assets
Packaging	$ 4,474.1	$ 3.2	$ 4,477.3	$ 714.9	(d)	$ 297.3	$ 250.3	$ 4,027.9
Paper	1,143.1	—	1,143.1	112.5	(e)	54.9	58.5	976.5
Corporate and Other	124.5	133.8	258.3	(77.4)	(f)	4.3	5.7	267.9
Intersegment eliminations	—	(137.0)	(137.0)	—		—	—	—
	$ 5,741.7	$ —	$ 5,741.7	750.0		$ 356.5	$ 314.5	$ 5,272.3
Interest expense, net				(85.5)				
Income before taxes				$ 664.5				

Year Ended December 31, 2014	Sales, net Trade	Inter-segment	Total	Operating Income (Loss)		Depreciation, Amortization, and Depletion	Capital Expenditures (j)	Assets
Packaging	$ 4,534.5	$ 5.8	$ 4,540.3	$ 663.2	(g)	$ 323.0	$ 362.1	$ 4,105.3
Paper	1,201.4	—	1,201.4	135.4		50.6	51.7	968.6
Corporate and Other	116.7	144.9	261.6	(95.9)	(h)	7.4	6.4	184.8
Intersegment eliminations	—	(150.7)	(150.7)	—		—	—	—
	$ 5,852.6	$ —	$ 5,852.6	702.7		$ 381.0	$ 420.2	$ 5,258.7
Interest expense, net				(88.4)	(i)			
Income before taxes				$ 614.3				

(a) Includes $9.3 million of closure costs related to corrugated product facilities.
Includes $4.2 million of acquisition-related costs for the TimBar Corporation and Columbus Container, Inc. acquisitions.
Includes $0.9 million of costs related to our withdrawal from a multiemployer pension plan for one of our corrugated products facilities.

(b) Includes $2.7 million of costs related to ceased softwood market pulp operations at our Wallula, Washington mill and the permanent shut down of the No.1 machine.
Includes $1.7 million of closure costs related to a paper products facility.

(c) Includes $0.3 million of acquisition-related costs for the TimBar Corporation acquisition.

(d) Includes net charges of $2.0 million primarily related to restructuring activities at our mill in DeRidder, Louisiana and $4.1 million of Boise acquisition integration-related and other costs.

(e) In September 2015, we sold the remaining land, buildings, and equipment at our paper mill site in St. Helens, Oregon where we ceased paper production in December 2012. We recorded a $6.7 million gain on the sale.

(f) Includes $9.3 million of Boise acquisition integration-related and other costs. These costs primarily relate to professional fees, severance, retention, relocation, travel, and other integration-related costs.

(g) Includes $65.8 million of costs related primarily to the conversion of the No. 3 newsprint machine at our DeRidder, Louisiana mill to produce lightweight linerboard and corrugating medium, and our exit from the newsprint business in September 2014. Includes $4.9 million of Boise acquisition integration-related and other costs.

(h) Includes $13.5 million of Boise acquisition integration-related and other costs and $17.6 million of costs for the settlement of the *Kleen Products LLC v Packaging Corp. of America et al* class action lawsuit. See Note 18, Commitments, Guarantees, Indemnifications, and Legal Proceedings, for more information.

(i) Includes $1.5 million of expense related to the write-off of deferred financing costs in connection with the debt refinancing discussed in Note 9, Debt.

(j) Includes "Additions to property, plant, and equipment" and excludes cash used for "Acquisitions of businesses, net of cash acquired" as reported on our Consolidated Statements of Cash Flows.

18. Commitments, Guarantees, Indemnifications, and Legal Proceedings

We have financial commitments and obligations that arise in the ordinary course of our business. These include long-term debt (discussed in Note 9, Debt), capital commitments, lease obligations, purchase commitments for goods and services, and legal proceedings (discussed below).

Capital Commitments

The Company had capital commitments of approximately $94.7 million and $83.7 million as of December 31, 2016 and 2015, respectively, in connection with the expansion and replacement of existing facilities and equipment.

Lease Obligations

PCA leases space for certain of its facilities, cutting rights to approximately 75,000 acres of timberland, land for a fiber farm, and equipment, primarily vehicles and rolling stock. Remaining lease terms average 14 years and may contain renewal options or escalation clauses. Substantially all lease agreements have fixed payment terms based on the passage of time. Some lease agreements provide us with the option to purchase the leased property. Additionally, some agreements contain renewal options averaging approximately six years. Some leases may require the Company to pay executory costs, which may include property taxes, maintenance and insurance. The minimum lease payments under non-cancelable operating leases with lease terms in excess of one year were as follows (dollars in millions):

2017	$ 64.4
2018	54.4
2019	41.8
2020	26.2
2021	19.1
Thereafter	48.4
Total	$ 254.3

Total lease expense, including base rent on all leases and executory costs, such as insurance, taxes, and maintenance, for the years ended December 31, 2016, 2015, and 2014, was $88.3 million, $87.9 million and $85.6 million, respectively. These costs are included in "Cost of sales" and "Selling, general, and administrative expenses" in our Consolidated Statements of Income. We had an insignificant amount of sublease rental income in the periods presented.

PCA was obligated under capital leases covering buildings and machinery and equipment in the amount of $21.6 million and $22.8 million at December 31, 2016 and 2015, respectively. Assets held under capital lease obligations were included in property, plant, and equipment as follows (dollars in millions):

	Year Ended December 31	
	2016	2015
Buildings	$ 0.3	$ 0.3
Machinery and equipment	28.5	28.5
Total	28.8	28.8
Less accumulated amortization	(13.7)	(12.2)
Total	$ 15.1	$ 16.6

Amortization of assets under capital lease obligations is included in depreciation expense.

The future minimum payments under capitalized leases at December 31, 2016 were as follows (dollars in millions):

2017	$	2.7
2018		2.7
2019		2.7
2020		2.7
2021		2.7
Thereafter		17.7
Total minimum capital lease payments		31.2
Less amounts representing interest		(9.6)
Present value of net minimum capital lease payments		21.6
Less current maturities of capital lease obligations		(1.3)
Total long-term capital lease obligations	$	20.3

Interest expense related to capital lease obligations was $1.5 million during the year ended December 31, 2016, and $1.6 million during both years ended December 31, 2015 and 2014.

Purchase Commitments

In the table below, we set forth our enforceable and legally binding purchase obligations as of December 31, 2016. Some of the amounts are based on management's estimates and assumptions about these obligations, including their duration, the possibility of renewal, anticipated actions by third parties, and other factors. Because these estimates and assumptions are necessarily subjective, our actual payments may vary from those reflected in the table. Purchase orders made in the ordinary course of business are excluded below. Any amounts for which we are liable under purchase orders are reflected on the Consolidated Balance Sheets as accounts payable and accrued liabilities. These obligations relate to various purchase agreements for items such as minimum amounts of fiber and energy purchases over periods ranging from one year to 22 years. Total purchase commitments were as follows (dollars in millions):

2017	$	93.4
2018		34.0
2019		27.8
2020		21.4
2021		17.7
Thereafter		45.7
Total	$	240.0

The Company purchased a total of $362.0 million, $299.6 million, and $265.9 million during the years ended December 31, 2016, 2015, and 2014, respectively, under these purchase agreements.

Environmental Liabilities

The potential costs for various environmental matters are uncertain due to such factors as the unknown magnitude of possible cleanup costs, the complexity and evolving nature of governmental laws and regulations and their interpretations, and the timing, varying costs and effectiveness of alternative cleanup technologies. From 2006 through 2016, there were no significant environmental remediation costs at PCA's mills and corrugated plants. At December 31, 2016, the Company had $25.3 million of environmental-related reserves recorded on its Consolidated Balance Sheet. Of the $25.3 million, approximately $17.2 million related to environmental-related asset retirement obligations discussed in Note 11, Asset Retirement Obligations, and $8.1 million related to our estimate of other environmental contingencies. The Company recorded $6.4 million in "Accrued liabilities" and $18.9 million in "Other long-term liabilities" on the Consolidated Balance Sheet. Liabilities recorded for environmental contingencies are estimates of the probable costs based upon available information and assumptions. Because of these uncertainties, PCA’s estimates may change. The Company believes that it is not reasonably possible that future environmental expenditures for remediation costs and asset retirement obligations above the $25.3 million accrued as of December 31, 2016, will have a material impact on its financial condition, results of operations, or cash flows.

Guarantees and Indemnifications

We provide guarantees, indemnifications, and other assurances to third parties in the normal course of our business. These include tort indemnifications, environmental assurances, and representations and warranties in commercial agreements. At December 31, 2016, we are not aware of any material liabilities arising from any guarantee, indemnification, or financial assurance we have provided. If we determined such a liability was probable and subject to reasonable determination, we would accrue for it at that time.

Legal proceedings

During 2010, PCA and eight other U.S. and Canadian containerboard producers were named as defendants in five purported class action lawsuits filed in the United States District Court for the Northern District of Illinois, alleging violations of the Sherman Act. The lawsuits were consolidated in a single complaint under the caption *Kleen Products LLC v Packaging Corp. of America et al.* The consolidated complaint alleges that the defendants conspired to limit the supply of containerboard, and that the purpose and effect of the alleged conspiracy was to artificially increase prices of containerboard products during the period of August 2005 to October 2010 (the time of filing of the complaint). The complaint was filed as a class action suit on behalf of all purchasers of containerboard products during such period. In 2014, we settled the class action lawsuit for $17.6 million. These costs were recorded in "Other expense, net" in our Consolidated Statement of Income for the year ended December 31, 2014.

We are also a party to other legal actions arising in the ordinary course of our business. These legal actions include commercial liability claims, premises liability claims, and employment-related claims, among others. As of the date of this filing, we believe it is not reasonably possible that any of the legal actions against us will, either individually or in the aggregate, have a material adverse effect on our financial condition, results of operations, or cash flows.

19. Quarterly Results of Operations (unaudited, dollars in millions, except per-share and stock price information)

	Quarter				
2016:	**First (a)**	**Second (b)**	**Third (c)**	**Fourth (d)**	**Total**
Net sales	$ 1,401.0	$ 1,417.4	$ 1,484.0	$ 1,476.6	$ 5,779.0
Gross profit	299.0	320.1	329.5	327.1	1,275.7
Income from operations	180.8	200.2	206.4	192.9	780.3
Net income	103.7	115.9	119.4	110.6	449.6
Basic earnings per share	1.09	1.23	1.27	1.17	4.76
Diluted earnings per share	1.09	1.23	1.26	1.17	4.75
Stock price - high	62.67	71.31	82.77	88.41	88.41
Stock price - low	44.32	58.44	65.12	78.03	44.32

	Quarter				
2015:	**First (e)**	**Second (f)**	**Third (g)**	**Fourth (h)**	**Total**
Net sales	$ 1,425.7	$ 1,454.3	$ 1,470.8	$ 1,390.9	$ 5,741.7
Gross profit	277.0	317.6	328.3	285.0	1,208.0
Income from operations	157.1	197.6	219.4	175.9	750.0
Net income	90.8	114.0	127.8	104.3	436.8
Basic earnings per share	0.92	1.16	1.31	1.07	4.47
Diluted earnings per share	0.92	1.16	1.31	1.07	4.47
Stock price - high	84.88	78.98	73.60	70.04	84.88
Stock price - low	73.03	62.48	58.29	59.54	58.29

Note: The sum of the quarters may not equal the total of the respective year's earnings per share on either a basic or diluted basis due to changes in the weighted average shares outstanding throughout the year.

(a) Includes $2.8 million of closure costs related to a corrugated products facility and a paper products facility. ($1.9 million after-tax or $0.02 per diluted share).

(b) Includes $1.7 million of closure costs related to a corrugated products facility and a paper products facility ($1.0 million after-tax or $0.01 per diluted share), $0.3 million of acquisition-related costs for TimBar Corporation ($0.2 million after-tax or $0.0 per diluted share), and $0.9 million related to our withdrawal from a multiemployer pension plan for one of our corrugated products facilities ($0.6 million after-tax or $0.01 per diluted share).

(c) Includes $2.0 million of closure costs related to a corrugated products facility and a paper products facility ($1.4 million after-tax or $0.02 per diluted share) and $2.9 million of acquisition-related costs for TimBar Corporation and Columbus Container, Inc. acquisitions ($1.9 million after-tax or $0.02 per diluted share).

(d) Includes $4.5 million of closure costs related to a corrugated products facility and a paper products facility ($2.9 million after-tax or $0.03 per diluted share), $2.7 million of costs related to ceased production of softwood market pulp operations at our Wallula, Washington mill and the permanent shutdown of the No.1 machine ($1.8 million after-tax or $0.02 per diluted share), and $1.2 million of acquisition-related costs for TimBar Corporation and Columbus Container, Inc. acquisitions ($0.8 million after-tax or $0.01 per diluted share).

(e) Includes $10.3 million of DeRidder restructuring charges ($6.6 million after-tax or $0.07 per diluted share) and $3.5 million of integration-related and other costs ($2.2 million after-tax or $0.02 per diluted share). Also includes a $3.6 million tax credit from the State of Louisiana related to our capital investment and the jobs retained at the DeRidder, Louisiana mill.

(f) Includes $1.0 million of income from DeRidder restructuring ($0.7 million after-tax or $0.01 per diluted share) and $3.7 million of integration-related and other costs ($2.3 million after-tax or $0.03 per diluted share).

(g) Includes $3.8 million of income from DeRidder restructuring ($2.3 million after-tax or $0.02 per diluted share) and $2.4 million of integration-related and other costs ($1.7 million after-tax or $0.02 per diluted share). Also includes $6.7 million gain from the sale of our paper mill site at St. Helens, Oregon ($4.4 million after tax or $0.05 per diluted share).

(h) Includes $3.5 million of income from DeRidder restructuring ($2.2 million after-tax or $0.02 per diluted share) and $3.8 million of integration-related and other costs ($2.6 million after-tax or $0.03 per diluted share).

20. Subsequent Event

On February 8, 2017, there was an explosion at our DeRidder, Louisiana paper mill. The incident involved annual repair work being performed on piping in the pulp mill area and resulted in three contractor fatalities. The cause of the incident is under investigation. At the time of the incident, the D1 machine was down for its annual outage and the D3 machine was running and continues to operate. As of February 19, 2017, the mill resumed full operation. We are in the process of estimating the financial impact of the incident at this time. We maintain property and business interruption insurance subject to a $5 million deductible.

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

Not applicable.

Item 9A. ***CONTROLS AND PROCEDURES***

Controls and Procedures

PCA maintains disclosure controls and procedures (as defined in Rule 13a-15(e) of the Securities Exchange Act of 1934) that are designed to provide reasonable assurance that information required to be disclosed in PCA's filings under the Securities Exchange Act is recorded, processed, summarized and reported within the periods specified in the rules and forms of the SEC and that such information is accumulated and communicated to PCA's management, including its Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

Prior to filing this report, PCA completed an evaluation under the supervision and with the participation of PCA's management, including PCA's Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of PCA's disclosure controls and procedures as of December 31, 2016. The evaluation of PCA's disclosure controls and procedures included a review of the controls' objectives and design, PCA's implementation of the controls and the effect of the controls on the information generated for use in this report. Based on this evaluation, PCA's Chief Executive Officer and Chief Financial Officer concluded that PCA's disclosure controls and procedures were effective at the reasonable assurance level as of December 31, 2016.

Changes in Internal Control over Financial Reporting

On August 29, 2016, PCA acquired TimBar Corporation ("TimBar"). Additionally, on November 30, 2016, PCA acquired Columbus Container, Inc. ("Columbus"). We are currently in the process of evaluating and integrating TimBar's and Columbus' controls over financial reporting which may result in changes or additions to PCA's internal control over financial reporting. Under guidelines established by the SEC, companies are permitted to exclude acquisitions from their assessment of internal control over financial reporting during the first year of an acquisition while integrating the acquired company. We excluded TimBar and Columbus from the assessment of internal control over financial reporting at December 31, 2016. Except as may relate to the TimBar and Columbus acquisitions, there were no other changes in our internal control over financial reporting (as defined in Rule 13a-15(f) under the Exchange Act) that occurred during the most recent fiscal quarter ended December 31, 2016 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting. As of and for the year ended December 31, 2016, TimBar accounted for approximately 7% of the Company's consolidated total assets and 2% of consolidated sales, and Columbus accounted for approximately 2% of the Company's consolidated total assets and less than 1% of consolidated net sales.

Management's Report on Internal Control Over Financial Reporting

PCA's management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). 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. 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 Company's assets; (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 are being made only with proper authorizations; 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, PCA's internal control over financial reporting may not prevent or detect misstatements. A control system, no matter how well conceived and operated, can provide only reasonable, not absolute, assurance that objectives of the control system are met. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, have been detected. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls become inadequate because of changes in conditions, or that the degree of compliance with the policies and procedures may deteriorate.

PCA's management, under the supervision of and with the participation of the Chief Executive Officer and Chief Financial Officer, assessed the Company's internal control over financial reporting as of December 31, 2016, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on this assessment and excluding the operations acquired from TimBar and Columbus, PCA's management concluded that its internal control over financial reporting was effective as of December 31, 2016, based on the specified criteria.

KPMG LLP, the independent registered public accounting firm that audited PCA's financial statements included in this Form 10-K, has also audited the effectiveness of the Company's internal control over financial reporting. Their attestation report precedes PCA's audited financial statements included elsewhere in this report.

Item 9B. ***OTHER INFORMATION***

None.

PART III

Item 10. *DIRECTORS, EXECUTIVE OFFICERS, AND CORPORATE GOVERNANCE*

Information regarding PCA's executive officers required by this Item 10 is set forth in Item 1 of Part I of this report under the caption "Executive Officers of the Registrant."

The following information required by this Item 10 will be included in PCA's Proxy Statement for the 2017 Annual Meeting of Stockholders and is incorporated by reference herein:

- Information regarding PCA's directors included under the caption "Election of Directors"
- Information regarding PCA's Audit Committee and financial experts included under the caption "Election of Directors - Audit Committee"
- Information regarding PCA's code of ethics included under the caption "Election of Directors - Code of Ethics"
- Information regarding PCA's stockholder nominating procedures included under the captions "Election of Directors - Nominating and Governance Committee," "Other Information - Recommendations for Board - Nominated Director Nominees," and "Other Information - Procedures for Nominating Directors or Bringing Business Before the 2017 Annual Meeting"
- Information regarding compliance with Section 16(a) of the Securities Exchange Act of 1934 included under the caption "Section 16(a) Beneficial Ownership Reporting Compliance"

Item 11. *EXECUTIVE COMPENSATION*

Information with respect to executive compensation required by this Item 11 will be included in PCA's Proxy Statement under the captions "Compensation Discussion and Analysis," "Executive Officer and Director Compensation" (including all subcaptions and tables thereunder) and "Board Committees - Compensation Committee" and is incorporated herein by reference.

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

Information with respect to security ownership of certain beneficial owners and management required by this Item 12 will be included in PCA's Proxy Statement under the caption "Ownership of Our Stock" and is incorporated herein by reference.

Authorization of Securities under Equity Compensation Plans — Securities authorized for issuance under our equity compensation plans at December 31, 2016 are as follows:

	Column		
	A	B	C
Plan Category	**Number of Securities to Be Issued Upon Exercise of Outstanding Options, Warrants, and Rights (a)**	**Weighted Average Exercise Price of Outstanding Options, Warrants, and Rights**	**Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans (Excluding Securities Reflected in Column A)**
Equity compensation plans approved by securityholders	—	$ —	1,238,703
Equity compensation plans not approved by securityholders	N/A	N/A	N/A
Total	**—**	**$ —**	**1,238,703**

(a) Does not include 1,018,311 shares of unvested restricted stock and performance units granted pursuant to our Amended and Restated 1999 Long-Term Equity Incentive Plan.

Item 13. ***CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE***

Information with respect to certain relationships and related transactions and director independence required by this Item 13 will be included in PCA's Proxy Statement under the captions "Transactions with Related Persons" and "Election of Directors - Determination of Director Independence," respectively, and is incorporated herein by reference.

Item 14. ***PRINCIPAL ACCOUNTING FEES AND SERVICES***

Information with respect to fees and services of the principal accountant required by this Item 14 will be included in PCA's Proxy Statement under the caption "Ratification of Appointment of the Independent Registered Public Accounting Firm" under the subcaptions "- Fees to the Independent Registered Public Accounting Firm" and "- Audit Committee Preapproval Policy for Audit and Non-Audit Fees" and are incorporated herein by reference.

PART IV

Item 15. ***EXHIBITS, FINANCIAL STATEMENT SCHEDULES***

(a) The following documents are filed as a part of this report:

(1) The financial statements listed in the "Index to Financial Statements."

(2) Financial Statement Schedule.

All schedules for which provision is made in the applicable accounting regulations of the Securities and Exchange Commission are not required under the related instructions, are inapplicable or not material, or the information called for thereby is otherwise included in the financial statements or the accompanying notes to the financial statements and therefore, have been omitted.

(3) Exhibits

Exhibit Number	Description
2.1	Contribution Agreement, dated as of January 25, 1999, among Pactiv Corporation (formerly known as Tenneco Packaging Inc.) ("Pactiv"), PCA Holdings LLC ("PCA Holdings") and Packaging Corporation of America ("PCA"). (Incorporated herein by reference to Exhibit 2.1 to PCA's registration Statement on Form S-4, Registration No. 333-79511).
2.2	Letter Agreement Amending the Contribution Agreement, dated as of April 12, 1999, among Pactiv, PCA Holdings and PCA. (Incorporated herein by reference to Exhibit 2.2 to PCA's Registration Statement on Form S-4, Registration No. 333-79511).
2.3	Agreement and Plan of Merger, dated September 16, 2013, between PCA, Bee Acquisition Corp. and Boise Inc. (Incorporated herein by reference to Exhibit 2.1 to PCA's Current Report on Form 8-K filed September 17, 2013, File No. 1-15399). PCA will furnish supplementally a copy of any omitted schedule or exhibit to the SEC upon request; provided, however, that PCA may request confidential treatment pursuant to Rule 24b-2 of the Securities Exchange Act of 1934, as amended, for any schedule or exhibit so furnished.
3.1	Restated Certificate of Incorporation of PCA. (Incorporated herein by reference to Exhibit 3.1 to PCA's Registration Statement on Form S-4, Registration No. 333-79511).
3.2	Certificate of Amendment to Restated Certificate of Incorporation of PCA. (Incorporated herein by reference to Exhibit 3.2 to PCA's Registration Statement on Form S-4, Registration No. 333-109437.)
3.3	Amended and Restated By-laws of PCA. (Incorporated herein by reference to Exhibit 3.1 to PCA's Current Report on Form 8-K filed December 7, 2012, File No. 1-15399.)
4.1	Form of certificate representing shares of common stock. (Incorporated herein by reference to Exhibit 4.9 to PCA's Registration Statement on Form S-1, Registration No. 333-86963.)
4.2	Indenture, dated as of July 21, 2003, between PCA and U.S. Bank National Association. (Incorporated herein by reference to Exhibit 4.2 to PCA's Quarterly Report on Form 10-Q for the period ended June 30, 2003, File No. 1-15399.)
4.3	First Supplemental Indenture, dated as of July 21, 2003, between PCA and U.S. Bank National Association. (Incorporated herein by reference to Exhibit 4.3 to PCA's Quarterly Report on Form 10-Q for the period ended June 30, 2003, File No. 1-15399.)
4.4	Form of Rule 144A Global Note. (Incorporated herein by reference to Exhibit 4.5 to PCA's Quarterly Report on Form 10-Q for the period ended June 30, 2003, File No. 1-15399.)
4.5	Officers' Certificate, dated March 25, 2008, pursuant to Section 301 of the Indenture filed herewith as Exhibit 4.2 (Incorporated herein by reference to Exhibit 4.1 to PCA's Current Report on Form 8-K filed March 25, 2008, File No. 1-15399.)
4.6	6.50% Senior Notes due 2018. (Incorporated herein by reference to Exhibit 4.2 to PCA's Current Report on Form 8-K filed March 25, 2008, File No. 1-15399.)
4.7	Officers' Certificate, dated as of June 26, 2012, pursuant to Section 301 of the Indenture filed herewith as Exhibit 4.2 and 3.90% Senior Notes due 2022. (Incorporated herein by reference to Exhibit 4.2 to PCA's Current Report on Form 8-K filed June 26, 2012, File No. 1-15399.)
4.8	Officers' Certificate, dated as of October 22, 2013, pursuant to Section 301 of the Indenture filed herewith as Exhibit 4.2. (Incorporated herein by reference to Exhibit 4.1 to PCA's Current Report on Form 8-K filed October 22, 2013, File No 1-15399.)

4.9	4.500% Senior Notes due 2023. (Incorporated herein by reference to Exhibit 4.2 to PCA's Current Report on Form 8-K filed October 22, 2013, File No 1-15399.)
4.10	Officers' Certificate, dated September 5, 2014, pursuant to Section 301 of the Indenture filed herewith as Exhibit 4.2 (Incorporated herein by reference to Exhibit 4.1 to PCA's Current Report on Form 8-K filed September 5, 2014, File No. 1-15399).
4.11	3.650% Senior Notes due 2024 (Incorporated herein by reference to Exhibit 4.2 to PCA's Current Report on Form 8-K filed September 5, 2014, File No. 1-15399).
10.1	Amended and Restated Credit Agreement, dated as of August 29, 2016, by and among PCA and the lenders and agents named therein. (Incorporated herein by reference to Exhibit 10.1 to PCA's Current Report on Form 8-K filed September 1, 2016, File No. 1-15399.)
10.2	Packaging Corporation of America Thrift Plan for Hourly Employees and First Amendment of Packaging Corporation of America Thrift Plan for Hourly Employees, effective February 1, 2000. (Incorporated herein by reference to Exhibit 4.5 to PCA's Registration Statement on Form S-8, Registration No. 333-33176.)*
10.3	Packaging Corporation of America Retirement Savings Plan, effective February 1, 2000. (Incorporated herein by reference to Exhibit 4.6 to PCA's Registration Statement on Form S-8, Registration No. 333-33176.)*
10.4	Form of Restricted Stock Award Agreement for employees and non-employee directors under the Amended and Restated 1999 Long-term Equity Incentive Plan. (Incorporated herein by reference to Exhibit 10.3 to PCA's Current Report on Form 8-K, filed March 14, 2006, File No. 1-15399.)*
10.5	Packaging Corporation of America Supplemental Executive Retirement Plan, as Amended and Restated Effective as of January 1, 2005. (Incorporated herein by reference to Exhibit 10.31 to PCA's Annual Report on Form 10-K for the year ended December 31, 2006, File No. 1-15399.)*
10.6	Packaging Corporation of America Deferred Compensation Plan, effective as of January 1, 2009, conformed to incorporate all amendments. †
10.7	First Amendment of Packaging Corporation of America Supplemental Executive Retirement Plan, effective as of January 1, 2008. (Incorporated herein by reference to Exhibit 10.17 to PCA's Annual Report on Form 10-K for the year ended December 31, 2008, file No. 1-15399.)*
10.8	Amended and Restated 1999 Long-Term Equity Incentive Plan, effective as of May 1, 2013, conformed to incorporate all amendments. †
10.9	PCA Amended and Restated Performance Incentive Plan, effective as of May 12, 2015. (Incorporated herein by reference to Appendix A to PCA's Definitive Proxy Statement on Schedule 14A, filed with the SEC on March 27, 2015, File No. 1-15399.)*
10.10	Amended and Restated Agreement, dated February 26, 2015, between Packaging Corporation of America and Paul T. Stecko. (Incorporated herein by reference to Exhibit 10.12 to PCA's Annual Report on Form 10-K for the year ended December 31, 2014, File No. 1-15399).
10.11	Second Amendment of Packaging Corporation of America Supplemental Executive Retirement Plan, effective as of February 28, 2013. (Incorporated herein by reference to Exhibit 10.22 to PCA's Annual Report on Form 10-K for the year ended December 31, 2012, File No. 1-15399.)*
10.12	Third Amendment of Packaging Corporation of America Supplemental Executive Retirement Plan, effective as of February 28, 2013. (Incorporated herein by reference to Exhibit 10.23 to PCA's Annual Report on Form 10-K for the year ended December 31, 2012, File No. 1-15399.) *
10.13	Form of Restricted Stock Agreement for executive officer awards made in June 2013. (Incorporated by reference to Exhibit 10.1 to PCA's Quarterly Report on Form 10-Q for the period ended June 30, 2013, File No. 1-15399).*
10.14	Form of Performance Unit Agreement for executive officer awards made in June 2013. (Incorporated by reference to Exhibit 10.2 to PCA's Quarterly Report on Form 10-Q for the period ended June 30, 2013, File No. 1-15399).*
10.15	Performance Based Equity Award Pool for Executive Officers relating to awards made in June 2013. (Incorporated by reference to Exhibit 10.3 to PCA's Quarterly Report on Form 10-Q for the period ended June 30, 2013, File No. 1-15399).*
10.16	Paper Purchase Agreement, dated June 25, 2011 (the "Paper Purchase Agreement"), between Boise White Paper, L.L. C. and OfficeMax Incorporated (Incorporated by reference to Exhibit 10.1 to Boise, Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2013, File No. 1-33541)
10.17	First Amendment to Paper Purchase Agreement, dated June 20, 2013, between Boise White Paper, L.L.C. and OfficeMax Incorporated (Incorporated by reference to Exhibit 10.2 to Boise, Inc.'s Quarterly Report on Form 10-Q for the period ended June 30, 2013, File No. 1-33541)
10.18	Second Amendment to Paper Purchase Agreement, effective January 1, 2015 and executed and delivered August 19, 2015, between Boise White Paper, L.L.C. and Office Depot Inc. (Incorporated by reference to Exhibit 10.1 to PCA's Quarterly Report on Form 10-Q for the period ended September 30, 2015, File No. 1-33541)
10.19	Form of Performance Unit Agreement for executive officer awards made in June 2014. (Incorporated by reference to Exhibit 10.1 to PCA's Quarterly Report on Form 10-Q for the period ended June 30, 2014, File No. 1-15399).*

10.20	Form of Restricted Stock Agreement for executive officer awards made in June 2014. (Incorporated by reference to Exhibit 10.2 to PCA's Quarterly Report on Form 10-Q for the period ended June 30, 2014, File No. 1-15399).*
10.21	Form of Performance Unit Agreement for executive officer awards made in 2015. (Incorporated by reference to Exhibit 10.1 to PCA's Quarterly Report on Form 10-Q for the period ended June 30, 2015, File No. 1-15399).*
10.22	Form of Restricted Stock Agreement for executive officer awards made in 2015. (Incorporated by reference to Exhibit 10.2 to PCA's Quarterly Report on Form 10-Q for the period ended June 30, 2014, File No. 1-15399).*
10.23	Agreement, dated December 16, 2015, between Packaging Corporation of America and Paul T. Stecko, director and Senior Advisor (Incorporated by reference to Exhibit 10.2 to PCA's Current Report on Form 8-K filed on December 17, 2015, File No. 1-15399).
10.24	Form of Performance Unit Agreement for executive officer awards made in 2016. (Incorporated by reference to Exhibit 10.2 to PCA's Quarterly Report on Form 10-Q for the period ended June 30, 2016, File No. 1-15399).*
10.25	Form of Restricted Stock Agreement for executive officer awards made in 2016. (Incorporated by reference to Exhibit 10.1 to PCA's Quarterly Report on Form 10-Q for the period ended June 30, 2016, File No. 1-15399).*
12.1	Statement Regarding Computation of Ratio of Earnings to Fixed Charges†
21.1	Subsidiaries of the Registrant.†
23.1	Consent of KPMG LLP.†
24.1	Powers of Attorney.†
31.1	Certification of Chief Executive Officer, As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.†
31.2	Certification of Chief Financial Officer, As Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.†
32	Certification of Chief Executive Officer and Chief Financial Officer Pursuant to 18 U.S.C. §1350, As Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.†
101	The following financial information from Packaging Corporation of America's Annual Report on Form 10-K for the year ended December 31, 2016, formatted in XBRL (eXtensible Business Reporting Language): (i) Consolidated Statements of Income for the years ended December 31, 2016, 2015, and 2014, (ii) Consolidated Balance Sheets at December 31, 2016 and 2015, (iii) Consolidated Statements of Cash Flows for the years ended December 31, 2016, 2015, and 2014, (iv) Consolidated Statements of Changes in Stockholders' Equity for the years ended December 31, 2016, 2015, and 2014, (v) the Notes to Consolidated Financial Statements, and (vi) Financial Statement Schedule-Valuation and Qualifying Accounts.

* Management contract or compensatory plan or arrangement.

† Filed herewith.

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrants have duly caused this report to be signed on their behalf by the undersigned, thereunto duly authorized on February 28, 2017.

Packaging Corporation of America

/s/ MARK W. KOWLZAN

Mark W. Kowlzan
Chairman of the Board and Chief Executive Officer

/s/ ROBERT P. MUNDY

Robert P. Mundy
Senior Vice President and Chief Financial Officer

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below on February 28, 2017, by the following persons on behalf of the registrants and in the capacities indicated.

Signature	Capacity
/s/ MARK W. KOWLZAN Mark W. Kowlzan	Chairman of the Board and Chief Executive Officer (Principal Executive Officer)
/s/ ROBERT P. MUNDY Robert P. Mundy	Senior Vice President and Chief Financial Officer (Principal Financial and Accounting Officer)
* Cheryl K. Beebe	Director
* Duane Farrington	Director
* Hasan Jameel	Director
* Robert C. Lyons	Director
* Thomas P. Maurer	Director
* Samuel M. Mencoff	Director
* Roger B. Porter	Director
* Thomas S. Souleles	Director
* Paul T. Stecko	Director
* James D. Woodrum	Director
/s/ ROBERT P. MUNDY Robert P. Mundy *(Attorney-In-Fact)*	

Exhibit 10.6

PACKAGING CORPORATION OF AMERICA
DEFERRED COMPENSATION PLAN

PLAN DOCUMENT

JANUARY 1, 2009
REFLECTING ALL AMENDMENTS THROUGH MAY 11, 2010

1. Introduction and Purpose

The Packaging Corporation of America Deferred Compensation Plan (the "Plan") was originally established April 12, 1999 by Packaging Corporation of America (the "Company"). The purpose of the Plan is to provide a select group of management or highly compensated employees of the Company and its affiliates an opportunity to defer compensation in accordance with the terms and conditions set forth herein.

The Company hereby amends and restates the Plan, effective as of January 1, 2009 (the "Effective Date"). The Plan was previously amended and restated, effective as of January 1, 2005, to comply with Section 409A. The terms of the Plan as provided herein shall apply to all Deferred Amounts attributable to any period beginning on or after January 1, 2005. Any amounts deferred and vested under the Plan on or prior to December 31, 2004, and any earnings attributable thereto, shall be grandfathered for purposes of Section 409A and shall be subject to the terms of the Plan as in effect on October 3, 2004 ("Grandfathered Deferrals"). Neither this restatement nor any subsequent amendment hereto shall be deemed to apply to Grandfathered Deferrals, unless such amendment explicitly states otherwise.

2. Definitions

As used in this Plan, the following words shall have the following meanings:

"Administrator" means the person, persons or entity designated as the administrator of the Plan in Section 9.

"Affiliate" means any parent, subsidiary, or other entity that is directly or indirectly controlled by, or controls, the Company, and any entity that is directly or indirectly controlled by the Company's parent.

"Board" means the Company's Board of Directors.

"Bonus" means an EICP Bonus and/or a Sign-On Bonus.

"Code" means the Internal Revenue Code of 1986, as amended. Any reference to any Code Section shall also mean any successor provision thereto.

"Company" means Packaging Corporation of America, a Delaware corporation, any successor thereto as provided in Section 20, and where applicable, shall include any Affiliate that adopts the Plan or has employees or former employees who are Participants in the Plan.

"Deferral Credit" means a Bonus deferral made pursuant to Section 4.

"Deferred Amount" means the amount otherwise payable to the Participant that is deferred pursuant to Section 4.

"Deferred Compensation Account" means a memorandum account established at the time an amount is deferred pursuant to Section 4, and maintained by the Company on its books for the Participant to or against which amounts are credited or charged under the Plan.

"EICP Bonus" means a bonus paid under the PCA Executive Incentive Compensation Plan or the PCA Performance Incentive Plan.

"Employment Termination Date" means, with respect to any Participant, the date on which such Participant experiences a "separation from service," as defined in Section 409A.

"ERISA" means the Employee Retirement Income Security Act of 1974, as amended.

"Executive" means a member of a select group of management or highly compensated employees of the Company.

"Participant" means an Executive who meets the eligibility requirements for the Plan set forth in Section 3 and who has deferred a portion of his or her Bonus. A Participant shall retain such status for purposes of the Plan until his or her Deferred Compensation Account has been distributed in full.

"Participation Election" means the form signed and submitted by an Executive to the Administrator prior to the required election date under Section 4.

"Performance Based Compensation" means compensation that is contingent upon the satisfaction of pre-established organizational or individual performance criteria relating to a performance period of at least 12 consecutive months in which the Participant is employed or such other compensation that satisfies the definition of "performance based compensation" under Section 409A.

"Plan" means the Packaging Corporation of America Company Deferred Compensation Plan as set forth herein and as hereinafter amended from time to time.

"Plan Year" means the calendar year.

"Section 409A" means Section 409A of the Code and any regulations or other interpretive authority issued thereunder.

"Sign-On Bonus" means a bonus payable as an incentive to accept employment with the Company.

"Specified Employee" means any person defined in Section 416(i) of the Code, without regard to paragraph (5) thereof, as determined on each September 30 and applied for the 12-month period beginning on the following January 1.

"Surviving Spouse" means an individual of the opposite sex who is legally married to a Participant at the time of the Participant's death.

"Unforeseeable Emergency" means a severe financial hardship of a Participant resulting from an illness or accident of the Participant, the Participant's spouse, or a dependent (as defined in Section 152(a)

of the Code) of the Participant, loss of the Participant's property due to casualty, or other similar extraordinary and unforeseeable circumstances arising as a result of events beyond the control of the Participant.

3. Eligibility

U.S. paid participants in the Company’s Executive Incentive Compensation Plan or Performance Incentive Plan and those individuals designated by the Vice President of Human Resources and the Director of Benefits of the Company shall be eligible to participate in the Plan. Only those Executives who are in a select group of management or are highly compensated (within the meaning of Title I of ERISA) may be designated as eligible to participate under this provision.

4. Elections to Defer

(a) Deferrals of EICP Bonus. A Participant may elect in a written Participation Election to defer receipt of all or a specified portion of his or her EICP Bonus to be received on account of a calendar year. The Participation Election must be submitted to the Administrator pursuant to such procedures as may be established

(b) by the Administrator from time to time, and specify (i) such portions of his or her EICP Bonus to be credited to his Deferred Compensation Account under the Plan as a Deferral Credit (instead of receiving current payments), and (ii) the time or events upon which such Deferred Amounts shall be distributed pursuant to Section 7(a) below.

(b) Timing of Election to Defer EICP Bonus. The Administrator may determine that a separate Participation Election to defer an EICP Bonus must be made with respect to each Plan Year or that a Participant’s election for one Plan Year will be deemed to apply to the following Plan Year, unless revoked or modified by such Participant. Any such Participation Election (or revocation thereof) must be made and shall be irrevocable at such times as set forth below:

(i) at any time prior to the thirty-first (31st) day of December prior to the beginning of the Plan Year during which the EICP Bonus to be deferred is otherwise earned;

(ii) in the case of an EICP Bonus that is Performance Based Compensation, at any time prior to six (6) months before the end of the performance period for which it is earned, provided that such compensation has not yet become both substantially certain and readily ascertainable;

(iii) in the case of the first year in which a Participant becomes eligible to participate in the Plan (as aggregated with other plans of its type as defined in Section 1.409A-1(c) of the Code), at any time within 30 days after the Participant first becomes eligible to participate; provided, however, that such election may apply only to compensation attributable to services to be performed after the Participation Election, and in the case of compensation based upon a performance period (other than Performance Based Compensation), may apply only to a prorated portion of such compensation based upon the number of days remaining in such performance period; and

(iv) at any other time as may be permitted under Section 409A.

(c) Deferrals of Sign-On Bonuses.

(i) In the case of a Sign-On Bonus that is immediately vested or may become vested within 13 months of its award, the Company may require through a non-elective deferral that all or any portion of the Participant’s Sign-On Bonus shall be deferred as a Deferral Credit and distributed in such

form, and at such time, as provided in Section 7. The Company's non-elective deferral of such Sign-On Bonus shall be made at such times as are permitted under Section 409A (for example, prior to the Participant having a legally binding right to such Sign-On Bonus).

(ii) In the case of a Sign-On Bonus that cannot become vested within 13 months of its award due to vesting conditions (except for accelerated vesting upon death, disability or change in control, as such terms are defined in Section 409A), a Participant may elect in a written Participation Election to defer receipt of all or a specified portion of his or her Sign-On Bonus. The Participation Election shall specify (i) such portions of his or her Sign-On Bonus to be credited to his Deferred Compensation Account under the Plan as a Deferral Credit, and (ii) the time or events upon which such Deferred Amounts shall be distributed pursuant to Section 7(a) below. A Participant must make a Participation Election with respect to a Sign-On Bonus no later than 30 days after the Participant receives a legally binding right to such Sign-On Bonus, subject to the applicable vesting conditions, or at such other time as permitted under Section 409A.

5. Crediting of Deferred Payments to the Deferred Compensation Account

The Company shall establish a Deferred Compensation Account for each Participant. The Company may establish subaccounts, as necessary, to track Deferred Amounts attributable to any particular Plan Year. Each Participant's Deferred Compensation Account (or subaccount) shall be credited with such Participant's Deferred Amount for such Plan Year as of the day on which the Participant would otherwise have been entitled to receive the bonus or incentive compensation to which the Deferred Amount is attributable. Adjustments as provided in Section 6 below, shall be made to the Participant's Deferred Compensation Account.

6. Adjustments to Deferred Compensation Account

The Administrator shall credit the balance of the Participant's Deferred Compensation Account with an earnings factor. The earnings factor will equal the amount the Participant's Deferred Compensation Account would have earned if it had been invested in the deemed investment options listed below. The Participant is permitted to select the deemed investment option used to determine the earnings factor and may change the selection at any time. The Participant may choose more than one deemed investment option in increments of at least one (1) percent. The Administrator reserves the right to change or amend any of the deemed investment options at any time.

The deemed investment options used to determine the earnings factor are:

(a) The prime rate of interest as reported by The Chase Manhattan Bank at the first day of each calendar month.

(b) The return for the following mutual funds currently offered in the Company Retirement Savings Plan for Salaried Employees:

(i) Fidelity Growth Company Fund
(ii) PIMCO Total Return Fund
(iii) Barclays Daily Equity Index Fund

The Company is under no obligation to acquire or provide any of the investments designated by a Participant, and any investments actually made by the Company will be made solely in the name of the Company and will remain the property of the Company.

The crediting of an earnings factor shall occur so long as there is a balance in the Participant's Deferred Compensation Account regardless of whether the Participant has terminated employment with the Company.

7. Payment of Deferred Amounts

(a) Timing of Distribution. Except as otherwise provided in this Section 7, a Participant's Deferred Amount shall be paid, or commence to be paid, to the Participant, or the Participant's beneficiary, within thirty (30) days after the earliest of:

(i) the Participant's death;

(ii) the Participant's Employment Termination Date; or

(iii) a date specified at the time of the deferral.

(b) Form of Distribution. Distributions shall be made in the form of a lump sum or in a number of annual installments not to exceed five (5). The form of distribution shall be elected by each Participant in his Participation Election, or designated by the Company pursuant to Section 4(c). If no election is properly made, distribution will be in the form of a lump sum payment.

(c) Tax Withholding. The Company shall withhold any taxes or other amounts with respect to a Participant's Deferred Amounts required to be withheld under federal, state or local law. Such taxes shall be withheld from the Participant's non-deferred compensation to the maximum extent possible with any excess being withheld from the Participant's elected Deferred Amount. Each Participant shall bear the ultimate responsibility for payment of all taxes owed under this Plan.

(d) Distribution Upon Death. In the event of the Participant's death, payment of the balance in the Participant's Deferred Compensation Account shall be made to the Participant's designated beneficiary, or if none, to the Surviving Spouse, or if none, to the Participant's estate.

(e) Distributions to Specified Employees. Notwithstanding anything contained herein to the contrary, in the case of any Specified Employee, distributions pursuant to 7(a)(ii) above may not commence until (i) six (6) months after the date of the Specified Employee's Employment Termination Date or (ii) the date of the Participant's death, whichever is earlier.

(f) Hardship Distribution. In the event a Participant incurs an Unforeseeable Emergency, the Administrator, in its sole discretion and upon written application of such Participant, may direct immediate payment of all or a portion of the then current value of such Participant's Deferred Compensation Account; provided that such payment shall in no event exceed the amount necessary to satisfy the Unforeseeable Emergency, plus amounts necessary to pay taxes reasonably anticipated as a result of the distribution.

(g) Distribution Restrictions. No distribution may be made pursuant to the Plan if the Company reasonably determines that such distribution would (i) violate Federal securities laws or other applicable law; (ii) be nondeductible pursuant to Section 162(m) of the Code; or (iii) jeopardize the Company's ability to continue as a going concern. In any such case, distribution shall be made at the earliest date at which Company determines such distribution would not trigger clauses (i), (ii) or (iii) above.

(h) Section 409A Violations. Notwithstanding any provision of the Plan, in the event the Plan or a Deferred Amount fails to satisfy the requirements of Section 409A, a portion of the Participant's Deferred

Compensation Account shall be distributed equal to the amount required to be included in income as a result of the failure to comply with Section 409A.

8. Participant Reports

The Administrator shall provide a statement to the Participant at least annually concerning the status of his or her Deferred Compensation Account.

9. Plan Administration and Expenses

The Administrator of this Plan shall be the Benefits Administration Committee, as appointed by the Company's Board; provided that, as permitted by law, the Administrator may delegate some or all of its authority under the Plan. The Administrator shall administer the Plan in accordance with its terms and purposes and shall have the authority, which may be exercised in its discretion, to interpret the Plan, to make any necessary rules and regulations, and to determine benefits under the Plan. The Administrator shall also be responsible for complying with statutory reporting and disclosure requirements. Any determination made by the Administrator in good faith shall be binding upon the Participant, his Surviving Spouse, and the Company.

The Administrator shall not be subject to liability with respect to the administration of the Plan. The Company shall indemnify and hold harmless the Administrator and each member of the Administrator, or any employee of the Company, or any individual acting as an employee or agent of either of them (to the extent not indemnified or saved harmless under any liability insurance or any other indemnification arrangement) from any and all claims, losses, liabilities, costs and expenses (including attorneys' fees) arising out of any actual or alleged act or failure to act made in good faith pursuant to the provisions of the Plan, including expenses reasonably incurred in the defense of any claim relating thereto with respect to the administration of the Plan, except that no indemnification or defense shall be provided to any person with respect to any conduct that has been judicially determined, or agreed by the parties, to have constituted willful misconduct on the part of such person, or to have resulted in his or her receipt of personal profit or advantage to which he or she is not entitled. The rights of indemnification provided hereunder shall be in addition to any right to which any person concerned may otherwise be entitled by contract or as a matter of law, and shall inure to the benefit of the heirs, executors, and administrators of any such person.

The Company shall pay all expenses of Plan.

10. Claims Procedures and Decisions of Administrator

In general, distributions under this Plan are automatic and no claim for benefits need be filed. However, a Participant (or the Participant's Surviving Spouse) may submit a claim for benefits under this Plan in writing to the Administrator. The following procedure shall apply in such case:

(a) If such claim for benefits is wholly or partially denied, the Administrator shall notify the claimant of the denial of the claim within a reasonable period of time, but no later than 90 days after receipt of the written claim, unless special circumstances require an extension of time for processing the claim. In such event, written notice of the extension shall be furnished to the claimant prior to the end of the 90-day period and shall indicate the special circumstances requiring the extension and the date by which a final decision is expected. In no event shall the extension period exceed 90 days from the end of the initial 90 day period. The notice of denial: (i) shall be in writing; (ii) shall be written in a manner calculated to be understood by the claimant; and (iii) shall contain (A) the specific reason or reasons for denial of the claim; (B) a specific reference to the pertinent Plan provisions upon which the denial is based; (C) a description of

any additional material or information necessary for the claimant to perfect the claim; and (D) an explanation of the Plan's claims review procedure.

(b) Within 60 days of the receipt by the claimant of the written notice of denial of the claim, or if the claim has not been granted within the applicable time period, the claimant may file a written request with the Administrator that it conduct a full and fair review of the denial of the claimant's claim for benefits. In connection with the claimant's appeal of the denial of his or her benefit, the claimant may review pertinent documents and may submit issues and comments in writing.

(c) The Administrator shall deliver to the claimant a written decision on the claim promptly, but not later than 60 days after the receipt of the claimant's request for review, except that if there are special circumstances which require an extension of time for processing, the 60-day period shall be extended to a maximum of 120 days, in which case written notice of the extension shall be furnished to the claimant prior to the end of the 60-day period. The Administrator's decision shall: (i) be written in a manner calculated to be understood by the claimant; (ii) include specific reasons for the decision; and (iii) contain specific references to the pertinent Plan provisions upon which the decision is based. If a written decision on review is not furnished to the claimant within the applicable time period, the claim shall be deemed denied on review.

11. Amendment, Suspension and Termination

The Company may at any time and from time to time, alter, amend, suspend, or modify the Plan in whole or in part. Notwithstanding the foregoing, no modification of the Plan will, without the prior written consent of the Participant, alter or impair any rights or obligations of the Participant, except to the extent the Administrator determines such modification is necessary to maintain compliance with Section 409A. In addition, the Company may in its discretion terminate the Plan subject to the following:

(a) the Plan may be terminated within the 30 days preceding, or 12 months following, a change in control (as defined in Section 409A) provided that all Deferred Compensation Accounts shall be distributed in full within 12 months after termination;

(b) the Plan may be terminated in the Company’s discretion at any time provided that (i) all deferred compensation arrangements of similar type maintained by the Company are terminated, (ii) all Deferred Compensation Accounts shall be distributed in full at least 12 months and no more than 24 months after the termination, and (C) the Company does not adopt a new deferred compensation arrangement of similar type for a period of five years following the termination of the Plan; and

(c) the Plan may be terminated within 12 months of a corporate dissolution taxed under Section 331 of the Code or with the approval of a bankruptcy court pursuant to 11 U.S.C. 503(b)(1)(A) provided that all Deferred Compensation Accounts are distributed in full by the latest of the (i) the end of the calendar year of the termination, (ii)) the calendar year in which such Deferred Amounts are fully vested, or (iii) the first calendar year in which such payment is administratively practicable.

12. Source of Benefits Transferability of Interests

During the period of deferral, all Deferred Amounts shall be general assets of the Company for use as it deems necessary and shall be subject to the claims of the Company creditors.

The rights and interests of a Participant during the period of deferral shall be those of a general creditor except that such Participant’s rights and interests may not be reached by the creditors of the Participant or the beneficiary, or anticipated, assigned, pledged, transferred or other-wise encumbered except in the event of the death of the Participant, and then only by will or the laws of descent and distribution.

13. No Right to Employment or Other Benefits

Nothing contained herein shall be construed as conferring upon any Participant the right to continue in the employ of the Company. Any compensation deferred and any payments made under this Plan shall not be included in creditable compensation in computing benefits under any employee benefit plan of the Company except to the extent expressly provided for therein.

14. Governing Law

The provisions of this Plan shall be construed according to the laws of the State of Illinois to the extent such laws are not preempted by ERISA. In any question of interpretation or other matter of doubt, the Company and the Administrator may rely upon the opinion of legal counsel.

15. Reliance on Documents, Instruments, etc.

The Administrator may rely on any certificate, statement or other representation made on behalf of the Company, a Participant or a Surviving Spouse, which it in good faith believes to be genuine, and on any certificate, statement, report or other representation made to it by any agent or any attorney, accountant or other expert retained by it or the Company in connection with the operation and administration of the Plan.

16. Information Requests

Each Participant, Surviving Spouse and Company shall furnish to the Administrator such documents, evidence, data, and other information, as the Administrator considers necessary or desirable for administering the Plan. Retirement Benefits under the Plan are conditioned on an Participant's promptly furnishing full, true and complete documents, evidence, data, and other information requested by the Administrator or Company in connection with the Plan's administration.

17. Mistake of Fact

Any mistake of fact or misstatement of fact shall be corrected when it becomes known and proper adjustment made by reason thereof. Without limiting the prior sentence, the Administrator is expressly authorized to take reasonable steps to recover mistaken overpayments from the Plan.

18. Severability

If any provision of the Plan is held invalid or unenforceable, its invalidity or unenforceability will not affect any other provisions of the Plan and will be construed and enforced as if such provision had not been included herein.

19. Successors

All obligations of the Company under the Plan will be binding on any successor to the Company, whether the existence of the successor results from a direct or indirect purchase of all or substantially all of the business of the Company, or a merger, consolidation, or otherwise.

20. Gender and Number

Words in the masculine general shall include the feminine gender and the singular shall include the plural, and vice versa, unless qualified by the context. Any headings used herein are included for reference only, and are not to be construed so as to alter the terms hereof.

21. Interpretation under Section 409A

The Plan at all times shall be operated in accordance with the requirements of Section 409A and, in the event of any inconsistency between any provision of the Plan and Section 409A, the provisions of Section 409A shall control and the provision of the Plan shall be void and without effect. In addition, any provision that is required to appear in the Plan that is not expressly set forth herein shall be deemed set forth herein, and the Plan shall be administered in all respects as if such provision were expressly set forth herein.

22. No Guarantee of Tax Consequences

Neither the Administrator nor the Company makes any commitment or guarantee that any amounts deferred or credited hereunder will be excludable from the Participant's gross income for federal or state income tax purposes, or that any other federal or state income tax treatment will or will not apply to or be available to any Participant.

IN WITNESS WHEREOF, and as conclusive evidence of the adoption of the foregoing, Packaging Corporation of America has caused these presents to be duly authorized in its name and behalf by its proper officers thereunto as of February ___, 2009.

By:
Stephen T. Calhoun

Its: Vice President - Human Resources

Appendix A

Special Benefit for Paul T. Stecko

This Special Appendix sets forth certain special provisions of the Plan with respect to the benefits of Paul T. Stecko ("Stecko").

1. Defined Terms. Unless otherwise noted, capitalized terms used in this Appendix A shall have the same meanings ascribed to them in the Plan.

2. Special Contribution. Notwithstanding any provision of the Plan to the contrary, Stecko's Deferred Compensation Account shall be credited with an additional Company contribution ("Special Contribution") as of the first day of each calendar month, beginning on April 1, 2009 and ending on the first day of the month in which Stecko incurs an Employment Termination Date. The amount of the Special Contribution shall be $17,000 per month (or such other amount as may be determined by the Board from time to time).

3. Distribution of Special Contribution. Notwithstanding any provision of the Plan to the contrary, all Special Contributions shall be distributed to Stecko or his beneficiary in the form of a lump sum upon the earlier of his death or his Employment Termination Date (subject to Section 7(e) of the Plan).

4. Applicability of Plan. Special Contributions shall be subject to all provisions of the Plan, except as provided otherwise in this Appendix A.

Appendix B

Supplemental Contributions for Certain Executives

This Appendix B sets forth special provisions of the Plan with respect to the benefits of certain named Executives.

1. Defined Terms. Unless otherwise noted, capitalized terms used in this Appendix B shall have the same meanings ascribed to them in the Plan.

2. Eligibility. Participant eligibility to receive any benefit under this Appendix B shall be determined by the Board in its sole discretion. A Participant's eligibility to receive a benefit under this Appendix B for any Plan Year does not guarantee any future benefit under this Appendix B for any other Plan Year.

3. Supplemental Contribution. Notwithstanding any provision of the Plan to the contrary, a Participant’s Deferred Compensation Account may be credited with an additional Company contribution (“Supplemental Contribution”) as of the 31st day of December of any Plan Year or such other date within such Plan Year as the Board determines in its sole discretion (the “Supplemental Contribution Date”). A Participant who is approved for a Supplemental Contribution during a Plan Year but who incurs an Employment Termination Date prior to the Supplemental Contribution Date will not receive a Supplemental Contribution in that Plan Year or any subsequent Plan Year unless otherwise approved by the Board. The Board shall determine the amount of each eligible Participant's Supplemental Contribution in its sole discretion, which amount need not be uniform for all eligible Participants. The amount of the Supplemental Contribution for each eligible Participant may, in the Board's sole discretion, remain in effect for future Plan Years unless and until the amount is changed by future Board action.

4. Investment. Any Supplemental Contribution awarded under this Appendix B shall be invested pursuant to the deemed investment option under Section 6(a) of the Plan, unless the Board permits the Participant to designate one or more alternate deemed investments under Section 6 of the Plan.

5. Distribution of Supplemental Contribution. Notwithstanding any provision of the Plan to the contrary, all Supplemental Contributions shall be distributed to the Participant or his beneficiary in the form of a lump sum upon his Employment Termination Date (subject to Section 7(e) of the Plan). However, the Board in its sole discretion, may permit a Participant to elect an alternative form and time distribution as permitted under Section 409A of the Code.

6. Vesting. Any Supplemental Contribution granted to a Participant under this Appendix B shall be subject to any vesting requirements that the Board may impose in its sole discretion.

7. Board Delegation. The Board may delegate to the Company's Chief Executive Officer any of the Board's discretion and authority under this Appendix B with respect to any Executive who is not a named executive officer of the Company for Securities Exchange Commission reporting purposes.

8. Applicability of Plan. Supplemental Contributions shall be subject to all provisions of the Plan, except as provided otherwise in this Appendix B.

Exhibit 10.8

A-1

PACKAGING CORPORATION OF AMERICA

AMENDED AND RESTATED
1999 LONG-TERM EQUITY INCENTIVE PLAN

as adopted May 1, 2013 and amended December 13, 2016

1. Purpose.

This plan shall be known as the Packaging Corporation of America Amended and Restated 1999 Long-Term Equity Incentive Plan (the "Plan"). The purpose of the Plan shall be to promote the long-term growth and profitability of Packaging Corporation of America (the "Company") and its Subsidiaries by (a) providing Eligible Individuals (as described herein) with incentives to maximize stockholder value and otherwise contribute to the success of the Company and (b) enabling the Company to attract, retain and reward the best available persons for positions of responsibility.

2. Definitions.

(a) "Award" means any award granted under the Plan in accordance with the terms hereof.

(b) "Board" mean the board of directors of the Company.

(c) "Cash Incentive Award" has the meaning set forth in Section 7(b).

(d) "Cause" means, unless otherwise provided by the Committee, the occurrence of one or more of the following events:

(i) a Participant's theft or embezzlement, or attempted theft or embezzlement, of money or property of the Company or its Subsidiaries, perpetration or attempted perpetration of fraud, or participation in a fraud or attempted fraud, on the Company or its Subsidiaries or unauthorized appropriation of, or attempt to misappropriate, any tangible or intangible assets or property of the Company or its Subsidiaries;

(ii) any act or acts of disloyalty, misconduct or moral turpitude by a Participant injurious to the interest, property, operations, business or reputation of the Company or its Subsidiaries or conviction of a Participant of a crime the commission of which results in injury to the Company or its Subsidiaries; or

(iii) a Participant's failure or inability (other than by reason of his or her permanent disability) to carry out effectively his or her duties and obligations to the Company or its Subsidiaries or to participate effectively and actively in the management of the Company or its Subsidiaries, as determined in the reasonable judgment of the Board.

(e) "Change in Control" means the occurrence of one of the following events:

(iv) if any "person" or "group" as those terms are used in Sections 13(d) and 14(d) of the Exchange Act or any successors thereto, other than an Exempt Person, is or becomes the "beneficial owner" (as defined in Rule 13d-3 under the Exchange Act or any successor thereto), directly or indirectly, of securities of the Company representing 50% or more of the combined voting power of the Company's then outstanding securities; or

(v) during any period of two consecutive years, individuals who at the beginning of such period constitute the Board and any new directors whose election by the Board or nomination for election by the Company's stockholders was approved by at least two-thirds of the directors then still in office who either were directors at the beginning of the period or whose election was previously so approved, cease for any reason to constitute a majority thereof; or

(vi) consummation of a merger or consolidation of the Company with any other corporation, other than a merger or consolidation (A) which would result in all or a portion of the voting securities of the Company outstanding immediately prior thereto continuing to represent (either by remaining outstanding or by being converted into voting securities of the surviving entity) more than 50% of the combined voting power of the voting securities of the Company or such surviving entity outstanding immediately after such merger or consolidation or (B) by which the corporate existence

of the Company is not affected and following which the Company's chief executive officer and directors retain their positions with the Company (and constitute at least a majority of the Board); or

(vii) consummation of a plan of complete liquidation of the Company or a sale or disposition by the Company of all or substantially all the Company's assets, other than a sale to an Exempt Person.

(f) "Code" means the Internal Revenue Code of 1986, as amended.

(g) "Committee" means the Compensation Committee of the Board, which shall consist solely of two or more members of the Board; provided, however, that the Committee with respect to Awards to Non-Employee Directors shall be the Board. Notwithstanding the foregoing (other than the proviso applicable to Non-Employee Directors), (i) as long as the Company is subject to Section 16 of the Exchange Act, the Committee for purpose of the Plan shall consist of not fewer than two members of the Board or such greater number as may be required for compliance with Rule 16b-3 issued under the Exchange Act and shall be comprised of persons who are independent for purposes of applicable stock exchange listing requirements, and (ii) any Award granted under the Plan which is intended to constitute Performance-Based Compensation (including Options and SARs) shall be granted by a Committee consisting solely of two or more "outside directors" within the meaning of Section 162(m) of the Code and applicable regulations.

(h) "Common Stock" means the Common Stock, par value $0.01 per share, of the Company, and any other shares into which such stock may be changed by reason of a recapitalization, reorganization, merger, consolidation or any other change in the corporate structure or capital stock of the Company.

(i) "Competition" is deemed to occur if a person whose employment with the Company or its Subsidiaries has terminated obtains a position as a full-time or part-time employee of, as a member of the board of directors of, or as a consultant or advisor with or to, or acquires an ownership interest in excess of 5% of, a corporation, partnership, firm or other entity that engages in any of the businesses of the Company or any Subsidiary with which the person was involved in a management role at any time during his or her last five years of employment with or other service for the Company or any Subsidiaries.

(j) "Disability" means, except as otherwise provided by the Committee, a disability that would entitle an eligible Participant to payment of monthly disability payments under any Company disability plan. "Disability" means, except as otherwise provided by the Committee, the Participant's inability, by reason of a medically determinable physical or mental impairment, to engage in the material and substantial duties of his position for the Company and its Subsidiaries, which condition is expected to be permanent; provided, however, that in the case of a Non-Employee Director, "Disability" means an injury or illness which, as determined by the Committee, renders the Participant unable to serve as a director of the Company.

(k) "Effective Date" has the meaning set forth in Section 17.

(l) "Eligible Individual" means any directors, officer or employee of the Company or any Subsidiary, any individual who perform services for the Company or any Subsidiary, or any individual for whom an offer of employment has been extended by the Company and its Subsidiaries; provided, however, that an Award to a person to whom an offer of employment has been extended shall not be effective until such individual begins to provide services to the Company or any Subsidiary.

(m) "Exchange Act" means the Securities Exchange Act of 1934, as amended.

(n) "Exempt Person" means any employee benefit plan of the Company or a trustee or other administrator or fiduciary holding securities under an employee benefit plan of the Company.

(o) "Exercise Price" has the meaning set forth in Section 6(a).

(p) "Expiration Date" has the meaning set forth in Section 6(c).

(q) "Family Member" has the meaning given to such term in General Instruction A.1(a)(5) to Form S-8 under the Securities Act of 1933, as amended, and any successor thereto.

(r) "Fair Market Value" of a share of Common Stock means, as of the date in question, the officially-quoted closing selling price of the stock (or if no selling price is quoted, the bid price) on the principal securities exchange on which the Common Stock is then listed for trading (the "Market") for the applicable trading day or, if the Common Stock is not then listed or quoted in the Market, the Fair Market Value shall be the fair market value of the Common Stock determined in good faith by the Board; provided, however, that when Shares received upon exercise of an Option are immediately sold in the open market, the net sale price received may be used to determine the Fair Market Value of any Shares used to pay the Exercise Price and applicable withholding taxes and to compute the withholding taxes.

(s) "Full Value Award" has the meaning set forth in Section 7(a).

(t) "Good Reason" means, unless otherwise provided by the Committee, the occurrence of one or more of the following events:

(viii) a substantial adverse alteration in the nature of the Participant's status or responsibilities from those in effect immediately prior to the Change in Control; or

(ix) a material reduction in the Participant’s annual base salary and target bonus, if any, or, in the case of a Participant who is a Non-Employee Director, the Participant’s annual compensation, as in effect immediately prior to the Change in Control.

A Participant’s Termination Date shall not be considered to be on account of Good Reason unless, within 30 days after the occurrence of an event described above, the Participant notifies the Company that the event has occurred, the Company has not remedied the event or condition by the 30th day following the date of such notice and the Participant terminates employment within 30 days following the expiration of the Company’s 30 day cure period.

(u) “Incentive Stock Option” means an Option conforming to the requirements of Section 422 of the Code and any successor thereto.

(v) “Non-Employee Director” has the meaning given to such term in Rule 16b-3 under the Exchange Act and any successor thereto.

(w) “Non-Qualified Stock Option” means any Option other than an Incentive Stock Option.

(x) “Option” means the grant of an Award under the Plan that entitles the Participant to purchase Shares at an Exercise Price established by the Committee at the time of grant. Options may be either Incentive Stock Options or Non-Qualified Stock Options, as determined by the Committee; provided, however, that an Incentive Stock Option may only be granted to an employee of the Company or a Subsidiary. An Option will be deemed to be a Non-Qualified Stock Option unless it is specifically designated by the Committee as an Incentive Stock Option.

(y) “Participant” means any person to whom an Award is granted under the Plan.

(z) “Performance-Based Compensation” has the meaning specified in Section 8.

(aa) "Performance Criteria" means performance targets based on one or more of the following criteria (i) earnings including pre-tax income or after-tax income, operating income, earnings before or after taxes, earnings before or after interest, depreciation, amortization, or book value per share or net earnings; (ii) earnings per share (basic or diluted); (iii) operating profit; (iv) revenue, revenue growth or rate of revenue growth; (v) return on assets (gross or net), return on investment, return on capital (including return on total capital or return on invested capital), or return on equity; (vi) returns on sales or revenues; (vii) operating expenses; (viii) stock price appreciation or total shareholder return; (ix) cash flow (before or after dividends), free cash flow, cash flow return on investment (discounted or otherwise), net cash provided by operations, cash flow in excess of cost of capital or cash flow per share (before or after dividends); (x) implementation or completion of critical projects or processes; (xi) economic profit; (xii) cumulative earnings per share growth; (xiii) operating margin or profit margin (including any of the earnings measures described in clause (i) above as a percentage of revenues); (xiv) cost targets, reductions and savings, productivity and efficiencies; (xv) strategic business criteria, consisting of one or more objectives based on meeting specified market penetration, geographic business expansion, customer satisfaction, employee satisfaction, human resources management, supervision of litigation, information technology, and goals relating to acquisitions, divestitures, joint ventures and similar transactions, and budget comparisons; (xvi) personal professional objectives, including any of the foregoing performance targets, the implementation of policies and plans, the negotiation of transactions, the development of long term business goals, formation of joint ventures, research or development collaborations, and the completion of other corporate transactions; (xvii) improvement in or attainment of expense levels or working capital levels; or (xviii) any combination of, or a specified increase in, any of the foregoing. Where applicable, the performance targets may be expressed in terms of attaining a specified level of the particular criteria or the attainment of a percentage increase or decrease in the particular criteria, and may be applied to one or more of the Company, a Subsidiary, or a division or strategic business unit of the Company or any Subsidiary, or may be applied to the performance of the Company relative to a market index, a group of other companies or a combination thereof, all as determined by the Committee. The performance targets may include a threshold level of performance below which no payment will be made (or no vesting will occur), levels of performance at which specified payments will be made (or specified vesting will occur), and a maximum level of performance above which no additional payment will be made (or at which full vesting will occur). Each of the foregoing performance targets shall be determined in accordance with generally accepted accounting principles, if applicable, and shall be subject to certification by the Committee; provided that the Committee shall have the authority to exclude, impact of charges for restructurings, discontinued operations, extraordinary items and other unusual or non-recurring events and the cumulative effects of tax or accounting principles and identified in financial statements, notes to financial statements, management’s discussion and analysis or other SEC filings.

(ab) “Retirement” means retirement as defined under any Company pension plan or retirement program or termination of one’s employment or service on retirement with the approval of the Committee.

(ac) “Share” has the meaning specified in Section 4(a).

(ad) "SAR" means an Award granted under the Plan that entitles the Participant to receive that number of Shares having a Fair Market Value equal to the excess of (i) the Fair Market Value of a specified number of Shares at the time of exercise, over (ii) an Exercise Price established by the Committee at the time of grant.

(ae) "Subsidiary" means a corporation or other entity of which outstanding shares or ownership interests representing 50% or more of the combined voting power of such corporation or other entity entitled to elect the management thereof, or such lesser percentage as may be approved by the Committee, are owned directly or indirectly by the Company; provided, however, that for purpose of Incentive Stock Options, a "Subsidiary" will be limited to a corporation that is a subsidiary of the Company within the meaning of Section 424(f) of the Code.

(af) "Substitute Award" means an Award of Shares issued by the Company in assumption of, or in substitution or exchange for, an award previously granted, or the right or obligation to make a future award, in all cases by a company acquired by the Company or any Subsidiary or with which the Company or any Subsidiary combines. In no event shall the issuance of Substitute Awards change the terms of such previously granted awards such that the change, if applied to a current Award, would be prohibited under Section 6(e).

(ag) "Termination Date" means the date on which a Participant both ceases to be an employee of the Company and the Subsidiaries and ceases to perform material services for the Company and the Subsidiaries, regardless of the reason for the cessation; provided, however, that a "Termination Date" shall not be considered to have occurred during the period in which the reason for the cessation of services is a leave of absence approved by the Company or the Subsidiary which was the recipient of the Participant's services; and provided further that with respect to a Non-Employee Directors, "Termination Date" means the date on which the Non-Employee Director's service as a Non-Employee Director terminates for any reason. The transfer of an employee from the Company to a Subsidiary, from a Subsidiary to the Company, or from one Subsidiary to another shall not be considered a termination of employment; nor shall it be considered a termination of employment if an employee is placed on military or sick leave or such other leave of absence which is considered by the Committee as continuing intact the employment relationship.

3. Administration.

(a) Administration Generally. The Plan shall be administered by the Committee; provided that the Board may, in its discretion, at any time and from time to time, resolve to administer the Plan, in which case the term "Committee" shall be deemed to mean the Board.

(b) Rights and Powers of Committee. Subject to the provisions of the Plan, the Committee shall be authorized to (i) select Eligible Individuals who will receive Awards under the Plan, (ii) determine the time, form and substance of Awards made under the Plan to each Participant, and the terms, conditions, performance targets, restrictions and other provisions applicable to any Award, (iii) certify that the conditions and restrictions applicable to any Award have been met, (iv) modify the terms of, cancel or suspend Awards made under the Plan, (v) conclusively interpret the Plan and Awards made thereunder, (vi) accelerate the vesting or exercisability of any Award, (vii) make any adjustments necessary or desirable in connection with Awards made under the Plan to Eligible Individuals located outside the United States, and (viii) adopt, amend, or rescind such rules and regulations relating the Plan, to determine the terms and provisions of any agreements made pursuant to the Plan and to and make such all determinations, for carrying out the Plan as it may deem appropriate. Subject to the terms and conditions of the Plan, the Committee will have the authority and discretion to determine the extent to which Awards under the Plan will be structured to conform to the requirements for Performance-Based Compensation, and to take such actions, establish such procedures and impose such restrictions at the time such Awards are granted as the Committee determines to be necessary or appropriate to conform to such requirements. Without limiting the generality of the foregoing, it is the intention of the Company that, to the extent that any provisions of this Plan or any Awards granted hereunder are subject to Section 409A of the Code, the Plan and the Awards comply with the requirements of Section 409A of the Code and that the Plan and Awards be administered in accordance with such requirements and the Committee shall have the authority to amend any outstanding Awards to conform to the requirements of Section 409A.

(c) Decisions Binding. Decisions of the Committee on all matters relating to the Plan shall be in the Committee's sole discretion and shall be conclusive and binding on all parties. The validity, construction, and effect of the Plan and any rules and regulations relating to the Plan shall be determined in accordance with applicable federal and state laws and rules and regulations promulgated pursuant thereto and the rules and regulations of the principal securities exchange on which the Common Stock is then listed for trading.

(d) Delegation. Except to the extent prohibited by applicable law or the rules of any stock exchange on which the Common Stock is listed, the Committee may allocate all or any portion of its responsibilities and powers to any one or more of its members and may delegate all or any part of its responsibilities and powers to any person or persons selected by it. Any such allocation or delegation may be revoked by the Committee at any time.

(e) Furnishing of Information. The Company and its Subsidiaries shall furnish the Committee such data and information as may be required for it to discharge its duties. The records of the Company and the Subsidiaries as to an individual's or Participant's employment or provision of services, termination of employment or cessation of the provision of services, leave of absence, reemployment and compensation shall be conclusive on all persons unless determined to be incorrect. Participants and other persons entitled to benefits under the Plan must furnish the Committee such evidence, data or information as the Committee consider desirable to carry out the terms of the Plan.

(f) Liability of Committee Members. No member of the Committee and no officer of the Company shall be liable for any action taken or omitted to be taken by such member, by any other member of the Committee or by any officer of the Company in connection with the performance of duties under the Plan, except for such person's own willful misconduct or as expressly provided by statute. The Committee, the individual members thereof, and persons acting as the authorized delegates of the Committee under the Plan, shall be indemnified by the Company against any and all liabilities, losses, costs and expenses (including legal fees and expenses) of whatsoever kind and nature which may be imposed on, incurred by or asserted against the Committee or its members or authorized delegates by reason of the performance of a Committee function if the Committee or its members or authorized delegates did not act dishonestly or in willful violation of the law or regulation under which such liability, loss, cost or expense arises. This indemnification shall not duplicate but may supplement any coverage available under any applicable insurance.

(g) Expenses and Funding. The expenses of the Plan shall be borne by the Company. The Plan shall not be required to establish any special or separate fund or make any other segregation of assets to assume the payment of any award under the Plan.

4. Shares Reserved and Limitations.

(a) Generally. Subject to adjustments as provided in Section 4(d), an aggregate of [10,550,000] shares of Common Stock (the "Shares") may be issued pursuant to the Plan. Such Shares may be in whole or in part authorized and unissued or held by the Company as treasury shares. If any grant under the Plan expires or terminates unexercised, becomes unexercisable or is forfeited as to any Shares, then such unpurchased or forfeited Shares shall thereafter be available for further grants under the Plan. Substitute Awards shall not reduce the number of Shares that may be issued under the Plan or that may be covered by Awards granted to any one Participant during any period pursuant to Section 4(b).

(b) Limitations.

(i) Incentive Stock Options. Subject to the terms and conditions of the Plan, the maximum number of Shares that may be delivered to Participants and their Beneficiaries with respect to Incentive Stock Options under the Plan shall be [10,550,000]; provided, however, that to the extent that shares not delivered must be counted against this limit as a condition of satisfying the rules applicable to Incentive Stock Options, such rules shall apply to the limit on Incentive Stock Options granted under the Plan.

(ii) Limits on Options and SARs. The maximum number of Shares that may be covered by Awards granted to any one Participant during any one calendar-year period pursuant to Section 6 (relating to Options and SARs) shall not exceed 400,000. For purposes of this Section 4(b)(ii), if an Option is in tandem with an SAR, such that the exercise of the Option or SAR with respect to a share of Common Stock cancels the tandem SAR or Option right, respectively, with respect to such share, the tandem Option and SAR rights with respect to each share of Common Stock shall be counted as covering only one share of Stock for purposes of applying the limitations of this Section 4(b)(ii).

(iii) Limits on Full Value Awards. For Full Value Awards that are intended to be Performance-Based Compensation, no more than 400,000 Shares may be delivered pursuant to such Awards granted to any one Participant during any one calendar-year period (regardless of whether settlement of the Award is to occur prior to, at the time of, or after the time of vesting); provided that Awards described in this Section 4(b)(iii) shall be subject to the following:

(A) If the Awards are denominated in Shares but an equivalent amount of cash is delivered in lieu of delivery of Shares, the foregoing limit shall be applied based on the methodology used by the Committee to convert the number of Shares into cash.

(B) If delivery of Shares or cash is deferred until after the Shares have been earned, any adjustment in the amount delivered to reflect actual or deemed investment experience after the date the Stock is earned shall be disregarded.

(iv) Limits on Cash Incentive Awards. For Cash Incentive Awards that are intended to be Performance-Based Compensation, the maximum amount payable to any Participant with respect to any twelve month performance period shall equal $5,500,000.00 (pro rated for performance periods that are greater or lesser than twelve months); provided that Awards described in this Section 4(b)(iv), shall be subject to the following:

(A) If the Awards are denominated in cash but an equivalent amount of Common Stock is delivered in lieu of delivery of cash, the foregoing limit shall be applied to the cash based on the methodology used by the Committee to convert the cash into Common Stock.

(B) If delivery of Common Stock or cash is deferred until after cash has been earned, any adjustment in the amount delivered to reflect actual or deemed investment experience after the date the cash is earned shall be disregarded.

(c) Form of Award. To the extent provided by the Committee, any Award may be settled in cash rather than in Shares.

(d) Adjustments. In the event of a reorganization, recapitalization, stock split, stock dividend, combination of shares, merger, consolidation, distribution of assets, or any other change in the corporate structure or shares of the Company, the Committee shall, in its sole discretion (i) adjust in the number and kind of shares or other property available for issuance under the Plan (including, without limitation, the total number of Shares available for issuance under the Plan pursuant to Section 4(a) and 4(b), including number of shares that may be delivered to an individual during any specified time as described in Section 4(b)), (ii) adjust the number and kind of shares or other property subject to outstanding Awards under the Plan, (iii) adjust the Exercise Price of outstanding Options and SARs, and (iv) make any other adjustments that the Committee determines to be equitable (which may include, without limitation, (A) replacement of Awards with other awards which the Committee determines have comparable value and which are based on stock of a company resulting from the transaction, and (B) cancellation of the Award in return for cash payment of the current value of the Award, determined as though the Award is fully vested at the time of payment, provided that in the case of an Option or SAR, the amount of such payment may be the excess of value of the shares of Common Stock subject to the Option or SAR at the time of the transaction over the Exercise Price (or for no consideration if the Exercise Price exceeds the value of the Shares); provided, however, that the Committee shall not be required to make any adjustment that would (I) require the inclusion of any compensation deferred pursuant to provisions of the Plan (or an award thereunder) in a Participant's gross income pursuant to Section 409A of the Code and the regulations issued thereunder from time to time and/or (II) cause any award made pursuant to the Plan to be treated as providing for the deferral of compensation pursuant to such Code section and regulations. Any such adjustment shall be final, conclusive and binding for all purposes of the Plan. In the event of any merger, consolidation or other reorganization in which the Company is not the surviving or continuing corporation or in which a Change in Control is to occur, all of the Company's obligations regarding Awards that are outstanding on the date of such event shall, on such terms as may be approved by the Committee prior to such event, be (1) canceled in exchange for cash or other property or (2) assumed by the surviving or continuing corporation

5. Participation.

Participation in the Plan shall be limited to Eligible Individuals. Subject to the terms and conditions of the Plan, the Committee shall determine and designate, from time to time, from among the Eligible Individuals those person who will be granted one or more Awards under the Plan. Subject to the terms and conditions of the Plan, a Participant may be granted any Award permitted under the Plan and more than one Award may be granted to a Participant. Nothing in the Plan or in any grant thereunder shall confer any right on a Participant to continue in the service or employ as a director or officer of or in the performance of services for the Company or a Subsidiary or shall interfere in any way with the right of the Company or a Subsidiary to terminate the employment or performance of services or to reduce the compensation or responsibilities of a Participant at any time. By accepting any Award under the Plan, each Participant and each person claiming under or through him or her shall be conclusively deemed to have indicated his or her acceptance and ratification of, and consent to, any action taken under the Plan by the Company, the Board or the Committee.

Determinations made by the Committee under the Plan need not be uniform and may be made selectively among Eligible Individuals under the Plan, whether or not such individuals are similarly situated. A grant of any Award an Eligible Individual shall neither guarantee nor preclude a further grant of that or any other type to such Eligible Individual in that year or subsequent years.

6. Options and SARs.

The Committee may from time to time grant to Eligible Individuals Options and/or SARs (or a combination thereof). The Award granted shall take such form as the Committee shall determine, subject to the following terms and conditions.

(a) Exercise Price. The "Exercise Price" per Share of an Option or SAR shall be established at the time of grant; provided, however, that in no event shall the Exercise Price be less than 100% of the Fair Market Value of a share of Common Stock as of the date of grant (or, if greater, par value). In the case of the grant of any Incentive Stock Option to an employee who, at the time of the grant, owns more than 10% of the total combined voting power of all classes of stock of the Company or any of its Subsidiaries, the Exercise Price

may not be less than 110% of the Fair Market Value of a share of Common Stock as of the date of grant of the Option, unless otherwise permitted by Section 422 of the Code or any successor thereto.

(b) Exercise and Vesting. The terms and conditions relating to exercise and vesting of an Option or SAR shall be established by the Committee to the extent not inconsistent with the Plan. No Option or SAR may be exercised prior to the date on which it is exercisable (or vested) or after the Expiration Date thereof and no SAR may be exercised unless, on the date of exercise, the Fair Market Value of a Share exceeds the Exercise Price.

(i) Special Exercise Rules. Unless otherwise provided by the Committee:

(A) If a Participant's Termination Date occurs due to death or Disability, all of the Participant's Options and SARs shall become fully vested and exercisable as of the Participant's Termination Date.

(B) If there is a Change in Control of the Company and a Participant's Termination Date occurs on or within one year after such Change in Control by reason of termination by the Participant for Good Reason or by Company other than for Cause, all of the Participant's Options and SARs shall become fully vested and exercisable upon the Termination Date.

(C) If a Participant's Termination Date occurs for any reason other than death or Disability (including Retirement) or by reason of a termination on or following a Change in Control as described in Section 6(b)(i)(B)), all of the Participant's Options and SARs that were not exercisable on the Termination Date shall be forfeited immediately upon the Termination Date.

(ii) Method of Exercise. Options may be exercised, in whole or in part, upon payment of the Exercise Price of the Shares to be acquired in accordance with procedures established by the Committee. An SAR shall be exercised upon notification by the Participant to the Company in accordance with procedures established by the Committee; provided, however, that all SARs will be exercised automatically on the last day prior to the Expiration Date of the SAR so long as the Fair Market Value of a Share on that date exceeds the Exercise Price of the SAR.

(iii) Payment of Exercise Price. Subject to the following provisions of this Section 6(b)(iii), the full Exercise Price of each Share purchased upon exercise of an Option shall be paid at the time of exercise. Payment of the Exercise Price shall be made (A) in cash (including check, bank draft, money order or wire transfer of immediately available funds), (B) by delivery of outstanding shares of Common Stock with a Fair Market Value on the date of exercise equal to the aggregate Exercise Price payable with respect to the Options' exercise, (C) by simultaneous sale through a broker reasonably acceptable to the Committee of Shares acquired on exercise, as permitted under Regulation T of the Federal Reserve Board, or (D) by any combination of the foregoing.

(iv) Payment of Exercise Price with Shares. In the event a Participant elects to pay the Exercise Price payable with respect to an Option pursuant to Section 6(b)(iii)(B) above (relating to delivery of Common Stock), (A) only a whole number of share(s) of Common Stock (and not fractional shares of Common Stock) may be tendered in payment, (B) the Participant must present evidence acceptable to the Company that he or she has owned any such shares of Common Stock tendered in payment of the Exercise Price (and that such tendered shares of Common Stock have not been subject to any substantial risk of forfeiture) for at least six months prior to the date of exercise, and (C) Common Stock must be delivered to the Company. Delivery for this purpose may, at the election of the Participant, be made either by (I) physical delivery of the certificate(s) for all such shares of Common Stock tendered in payment of the price, accompanied by duly executed instruments of transfer in a form acceptable to the Company, or (II) direction to the Participant's broker to transfer, by book entry, such shares of Common Stock from a brokerage account of the Participant to a brokerage account specified by the Company. When payment of the Exercise Price is made by delivery of Common Stock, the difference, if any, between the aggregate Exercise Price payable with respect to the Option being exercised and the Fair Market Value of the shares of Common Stock tendered in payment (plus any applicable taxes) shall be paid in cash. No Participant may tender shares of Common Stock having a Fair Market Value exceeding the aggregate Exercise Price payable with respect to the Option being exercised (plus any applicable taxes).

(c) Expiration Date. The "Expiration Date" with respect to an Option or SAR means the date established as the Expiration Date by the Committee at the time of the grant (as the same may be modified in accordance with the terms of the Plan); provided, however, that unless determined otherwise by the Committee, the Expiration Date with respect to any Option or SAR shall not be later than the earliest to occur of:

(i) the ten-year anniversary of the date on which the Option or SAR is granted;

(ii) if the Participant's Termination Date occurs by reason of death or Disability, 180 days after the Termination Date;

(iii) if the Participant's Termination Date occurs on or within one year following a Change in Control by reason of termination by the Participant for Good Reason or by the Company for reasons other than for Cause, the first anniversary of the Termination Date;

(iv) if the Participant's Termination Date occurs by reason of Retirement or for any reason other than death, Disability or termination for Cause, 90 days after the Termination Date provided that the Participant does not engage in Competition during such 90-day period unless he or she receives written consent to do so from the Board or the Committee; and

(v) if the Participant's Termination Date occurs for reasons of Cause, the day preceding the Termination Date.

In no event shall the Expiration Date of an Option or SAR be later than the ten-year anniversary of the date on which the Option or SAR is granted (or such shorter period required by law or the rules of any stock exchange on which the Common Stock is listed).

(d) Limitations on Incentive Stock Options. If required by the Code, the aggregate Fair Market Value (determined as of the grant date) of Shares for which an Incentive Stock Option is exercisable for the first time during any calendar year under all equity incentive plans of the Company and its Subsidiaries (as defined in Section 422 of the Code or any successor thereto) may not exceed $100,000.

(e) No Repricing. Except for either adjustments pursuant to Section 4(d) (relating to the adjustment of Shares), or reductions of the Exercise Price approved by the Company's stockholders, the Exercise Price for any outstanding Option or SAR may not be decreased after the date of grant nor may an outstanding Option or SAR granted under the Plan be surrendered to the Company as consideration for the grant of a replacement Option or SAR with a lower Exercise Price. Except as approved by the Company's stockholders, in no event shall any Option or SAR granted under the Plan be surrendered to the Company in consideration for a cash payment if, at the time of such surrender, the Exercise Price of the Option or SAR is greater than the then current Fair Market Value of a share of Common Stock. In addition, no repricing of an Option or SAR shall be permitted without the approval of the Company's stockholders if such approval is required under the rules of any stock exchange on which Common Stock is listed.

7. Full Value Awards.

(a) Definitions.

(i) Full Value Award. A "Full Value Award" is a grant of one or more shares of Common Stock or a right to receive one or more shares of Common Stock in the future (including restricted stock, restricted stock units, deferred stock units, performance stock and performance stock units). Such grants may be subject to one or more of the following, as determined by the Committee:

(A) The grant may be in consideration of a Participant's previously performed services or surrender of other compensation that may be due.

(B) The grant may be contingent on the achievement of performance or other objectives (including completion of service) during a specified period.

(C) The grant may be subject to a risk of forfeiture or other restrictions that will lapse upon the achievement of one or more goals relating to completion of service by the Participant or achievement of performance or other objectives.

The grant of Full Value Awards may also be subject to such other conditions, restrictions and contingencies, as determined by the Committee, including provisions relating to dividend or dividend equivalent rights and deferred payment or settlement.

(ii) Cash Incentive Award. A "Cash Incentive Award" is the grant of a right to receive a payment of cash (or in the discretion of the Committee, shares of Common Stock having value equivalent to the cash otherwise payable) that is contingent on achievement of performance objectives over a specified period established by the Committee. The grant of Cash Incentive Awards may also be subject to such other conditions, restrictions and contingencies, as determined by the Committee, including provisions relating to deferred payment.

(b) Special Vesting Rules. Except for (i) awards granted in lieu of other compensation, and (ii) grants that are a form of payment of earned performance awards or other incentive compensation, if an employee's right to become vested in a Full Value Award is conditioned on the completion of a specified period of service with Company or the Subsidiaries, without achievement of performance targets or other performance objectives (whether or not related to performance measures) being required as a condition of vesting, then the required period of service for full vesting shall be not less than three years (subject, to the extent provided by the Committee, to pro rated vesting over the course of such three year period and to acceleration of vesting in the

event of the Participant’s death, Disability, involuntary termination, Retirement or in connection with a Change in Control).

8. Performance-Based Compensation.

The Committee may designate a Full Value Award or Cash Incentive Award granted to any Participant as "Performance-Based Compensation" within the meaning of Section 162(m) of the Code and regulations thereunder. To the extent required by Section 162(m) of the Code, any Full Value Award or Cash Incentive Award so designated shall be conditioned on the achievement of one or more performance targets as determined by the Committee and the following additional requirements shall apply:

(a) Establishment of Performance Targets. The performance targets established for the performance period established by the Committee shall be objective (as that term is described in regulations under Section 162(m) of the Code), and shall be established in writing by the Committee not later than 90 days after the beginning of the performance period (but in no event after 25% of the performance period has elapsed), and while the outcome as to the performance targets is substantially uncertain. The performance targets established by the Committee may be with respect to corporate performance, operating group or sub-group performance, individual company performance, other group or individual performance, or division performance, and shall be based on one or more of the Performance Criteria.

(b) Committee Certification Required. A Participant otherwise entitled to receive a Full Value Award or Cash Incentive Award for any performance period shall not receive a settlement or payment of the Award until the Committee has determined that the applicable performance target(s) have been attained. To the extent that the Committee exercises discretion in making the determination required by this Section 8(b), such exercise of discretion may not result in an increase in the amount of the payment.

(c) Termination Prior to End of Performance Period. If a Participant's employment terminates because of death or Disability, or if a Change in Control occurs prior to the Participant's Termination Date, the Participant's Full Value Award or Cash Incentive Award may, to the extent provided by the Committee, become vested without regard to whether the Full Value Award or Cash Incentive Award would be Performance-Based Compensation.

Nothing in this Section 8 shall preclude the Committee from granting Full Value Awards or Cash Incentive Awards under the Plan or the Committee, the Company or any Subsidiary from granting any Cash Incentive Awards outside of the Plan that are not intended to be Performance-Based Compensation; provided, however, that, at the time of grant of Full Value Awards or Cash Incentive Awards by the Committee, the Committee shall designate whether such Awards are intended to constitute Performance-Based Compensation. To the extent that the provisions of this Section 8 reflect the requirements applicable to Performance-Based Compensation, such provisions shall not apply to the portion of the Award, if any, that is not intended to constitute Performance-Based Compensation.

9. Withholding Taxes.

All Awards and other payments under the Plan are subject to withholding of all applicable taxes, which withholding obligations may be satisfied, with the consent of the Committee, through (a) cash payment by the Participant, or (b) the surrender of shares of Common Stock which the Participant already owns or the surrender of shares to which a Participant is otherwise entitled under the Plan; provided, however, that (i) the amount withheld in the form of shares of Common Stock under this Section 9 may not exceed the minimum statutory withholding obligation (based on the minimum statutory withholding rates for Federal and state purposes, including, without limitation, payroll taxes) unless otherwise elected by the Participant, (ii) in no event shall the Participant be permitted to elect less than the minimum statutory withholding obligation, and (iii) in no event shall the Participant be permitted to elect to have an amount withheld in the form of shares of Common Stock pursuant to this Section 9 that exceeds the maximum individual tax rate for the employee in applicable jurisdictions.” The Company, to the extent permitted or required by law, shall have the right to deduct from any payment of any kind (including salary or bonus) otherwise due to a Participant, an amount equal to any federal, state or local taxes of any kind required by law to be withheld with respect to any grant or delivery of Shares under the Plan.

10. Written Agreement.

Unless the Committee determines otherwise, each Participant shall enter into a written agreement with the Company that shall contain such provisions, including without limitation vesting requirements, consistent with the provisions of the Plan, as may be approved by the Committee.

11. Transferability.

Unless the Committee determines otherwise, no Award granted under the Plan shall be transferable by a Participant other than by will or the laws of descent and distribution or to a Participant’s Family Member by gift or a qualified domestic relations order as defined by the Code. Unless the Committee determines otherwise, an Option may be exercised only by the Participant; by his or her Family Member if such person has acquired the Option by gift or qualified domestic relations order; by the executor or administrator of the estate of any of the foregoing or any person to whom the Option is transferred by will or

the laws of descent and distribution; or by the guardian or legal representative of any of the foregoing; provided that Incentive Stock Options may be exercised by any Family Member, guardian or legal representative only if permitted by the Code and any regulations thereunder. All provisions of this Plan shall in any event continue to apply to any award granted under the Plan and transferred as permitted by this Section 11, and any transferee of any such Award shall be bound by all provisions of this Plan as and to the same extent as the applicable original Participant.

12. Listing, Registration, Restrictions and Certification.
If the Committee determines that the listing, registration or qualification upon any securities exchange or under any law of Shares subject to any Award is necessary or desirable as a condition of, or in connection with, the granting of same or the issue or purchase of Shares thereunder, no such Award may be exercised or settled, in whole or in part, unless such listing, registration or qualification is effected free of any conditions not acceptable to the Committee. Notwithstanding any other provision of the Plan, the Company shall have no liability to deliver any Common Stock under the Plan or make any other distribution of benefits under the Plan unless such delivery or distribution would comply with all applicable laws and the applicable requirements of any securities exchange or similar entity.

In the case of a Participant who is subject to Section 16(a) and 16(b) of the Exchange Act, the Committee may, at any time, add such conditions and limitations to any Award to such Participant, or any feature of any such Award, as the Committee, in its sole discretion, deems necessary or desirable to comply with Section 16(a) or 16(b) and the rules and regulations thereunder or to obtain any exemption therefrom.

To the extent that the Plan provides for issuance of certificates to reflect the transfer of Common Stock, the transfer of such Common Stock may be effected on a non-certificated basis, to the extent not prohibited by applicable law or the rules of any stock exchange on which the Common Stock is listed.

13. Liability for Cash Payments.
Each Subsidiary shall be liable for payment of cash due under the Plan with respect to any Participant to the extent that such payment is attributable to the services rendered for that Subsidiary by the Participant. Any disputes relating to liability of a Subsidiary for cash payments shall be resolved by the Committee.

14. Notices.
Any notice or document required to be filed with the Committee under the Plan will be properly filed if delivered or mailed by registered mail, postage prepaid, to the Committee, in care of the Company or the Subsidiary, as applicable, at its principal executive offices. The Committee may, by advance written notice to affected persons, revise such notice procedure from time to time. Any notice required under the Plan (other than a notice of election) may be waived by the person entitled to notice.

15. Form and Time of Elections.
Unless otherwise specified herein, each election required or permitted to be made by any Participant or other person entitled to benefits under the Plan, and any permitted modification or revocation thereof, shall be in writing filed with the applicable Committee at such times, in such form, and subject to such restrictions and limitations, not inconsistent with the terms of the Plan, as the Committee shall require.

16. Amendment and Termination of the Plan.
The Board or the Committee may amend or terminate the Plan at any time, and the Committee may amend any Award; provided, however that, no amendment or termination may, in the absence of consent to the change by the affected Participant (or Beneficiary, if applicable), adversely affect the rights of any Participant (or Beneficiary) under any Award granted under the Plan prior to such amendment or termination is adopted; and provided, further that, adjustments pursuant to Section 4(d) (relating to adjustment of shares) shall not be subject to the foregoing limitations of this Section 16. Notwithstanding the foregoing, the provisions of Section 6(e)(relating to repricing) cannot be amended without the approval of the Company's stockholders and no other amendment shall be made to the Plan without the approval of the Company's stockholders if such amendment is required by law or the rules of any stock exchange on which the Common Stock is listed. It is the intention of the Company that to the extent that any provisions of this Plan or any Awards granted hereunder are subject to Section 409A of the Code, the Plan and the Awards comply with the requirements of Section 409A of the Code and that the Board shall have the authority to amend the Plan as it deems necessary to conform to Section 409A. Notwithstanding the foregoing, the Company does not guarantee that Awards under the Plan will comply with Section 409A and the Committee is under no obligation to make any changes to any Award to cause such compliance.

17. Effective Date and Termination Date.
The original date of commencement of the Plan was October 19, 1999. The Plan has been amended from time thereafter and this amendment and restatement of the Plan shall be effective as of the date that it is approved by the stockholders of the Company (the "Effective Date"). The Plan shall be of unlimited duration, and, in the event of Plan termination, shall remain in

effect as long as any Awards granted under it are outstanding and not fully vested or paid; provided, however, no new Awards will be made under the Plan after the tenth anniversary of the Effective Date.

18. Severability.

Whenever possible, each provision of the Plan shall be interpreted in such manner as to be effective and valid under applicable law, but if any provision of the Plan is held to be prohibited by or invalid under applicable law, such provision shall be ineffective only to the extent of such prohibition or invalidity, without invalidating the remainder of the Plan.

19. Governing Law.

The Plan shall be governed by the corporate laws of the State of Delaware, without giving effect to any choice of law provisions that might otherwise refer construction or interpretation of the Plan to the substantive law of another jurisdiction.

Exhibit 12.1

Ratio of Earnings to Fixed Charges

Amounts in millions, except ratios	**Year Ended December 31**				
	2016	**2015**	**2014**	**2013**	**2012**
Ratio of Earnings to Fixed Charges	6.5 x	6.7 x	6.1 x	6.4 x	4.0 x

Details of the specific calculations are set forth below:

	Year Ended December 31,				
	2016	**2015**	**2014**	**2013**	**2012**
Earnings					
Income before taxes	$ 688.5	$ 664.5	$ 614.3	$ 423.6	$ 244.8
Add: Fixed charges	123.7	116.8	119.7	78.7	80.2
Subtotal	812.2	781.3	734.0	502.3	325.0
Less: Capitalized interest	(2.5)	(2.0)	(2.8)	(1.7)	(0.8)
Total	$ 809.7	$ 779.3	$ 731.2	$ 500.6	$ 324.2
Fixed Charges					
Interest expense	$ 91.8	$ 85.5	$ 88.4	$ 58.3	$ 62.9
Capitalized interest	2.5	2.0	2.8	1.7	0.8
Interest portion of rent expense (1)	29.4	29.3	28.5	18.7	16.5
Total	$ 123.7	$ 116.8	$ 119.7	$ 78.7	$ 80.2
Ratio of Earnings to Fixed Charges	6.5 x	6.7 x	6.1 x	6.4 x	4.0 x

(1) The interest portion of rent expense represents the estimated interest component of such rental payments.

Earnings available for fixed charges represent earnings before income taxes and fixed charges excluding capitalized interest. Fixed charges represent interest expense; amortization of treasury lock settlements; debt discount and expenses; capitalized interest and that portion of rental expense deemed to be the equivalent of interest.

Exhibit 21.1

Subsidiaries of the Registrant *

	State or Other Jurisdiction of Incorporation or Organization
Packaging Corporation of America (100%)	Delaware
PCA Corrugated and Display, LLC (100%)	Delaware
Polywoven Distributors PA, LLC (51%)	Pennsylvania
PCA International Inc. (100%)	Delaware
PCA International Services, LLC (100%)	Delaware
PCA Hydro Inc. (100%)	Delaware
Packaging Corporation of Asia, Limited (100%)	Hong Kong
PCA Southern Indiana Corrugated, LLC (100%)	Delaware
Boise Inc. (100%)	Delaware
Boise Paper Holdings, LLC (100%)	Delaware
Boise Packaging & Newsprint, LLC (100%)	Delaware
Boise Packaging Holdings Corp. (100%)	Delaware
Hexacomb Corporation (100%)	Illinois
Hexacomb Canada Holdings Corporation (100%)	Canada
Hexacomb Canada Corporation (100%)	Canada
Louisiana Timber Procurement Company, LLC (50%)	Delaware
Boise White Paper, LLC (100%)	Delaware
International Falls Power Company (100%)	Delaware
Minnesota, Dakota & Western Railway Company (100%)	Minnesota
B C T, Incorporated (100%)	Delaware

* The names of some of our foreign subsidiaries have been omitted. These unnamed subsidiaries, considered in the aggregate as a single subsidiary, would not constitute a significant subsidiary, as defined in Regulation S-X, Rule 1-02(w).

Exhibit 23.1

Consent of Independent Registered Public Accounting Firm

The Board of Directors
Packaging Corporation of America:

We consent to the incorporation by reference in the registration statements (Nos. 333-179620, 333-188265, 333-206802, and 333-202723) on Form S-8 of Packaging Corporation of America of our reports dated February 28, 2017 with respect to the consolidated balance sheets of Packaging Corporation of America as of December 31, 2016 and 2015, and the related consolidated statements of income and comprehensive income, changes in stockholders' equity, and cash flows for each of the years in the three-year period ended December 31, 2016, and the effectiveness of internal control over financial reporting as of December 31, 2016, which reports appear in the December 31, 2016 annual report on Form 10-K of Packaging Corporation of America. Our report dated February 28, 2017, on the effectiveness of internal control over financial reporting as of December 31, 2016, contains an explanatory paragraph that states that our audit of internal control over financial reporting of Packaging Corporation of America excluded an evaluation of the internal control over financial reporting of TimBar Corporation and Columbus Container, Inc. which were acquired in 2016.

/s/ KPMG LLP

Chicago, Illinois
February 28, 2017

Exhibit 31.1

**CEO CERTIFICATION PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, Mark W. Kowlzan, certify that:

(1) I have reviewed this annual report on Form 10-K of Packaging Corporation of America (PCA);

(2) Based on my knowledge, this annual 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 annual report;

(3) Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of PCA as of, and for, the periods presented in this annual report;

(4) PCA'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 PCA 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 PCA, 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 PCA'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 PCA's internal control over financial reporting that occurred during PCA's most recent fiscal quarter (PCA's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, PCA's internal control over financial reporting; and

(5) PCA's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to PCA's auditors and the Audit Committee of PCA'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 PCA'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 PCA's internal control over financial reporting.

/s/ MARK W. KOWLZAN

Mark W. Kowlzan
Chairman of the Board and Chief Executive Officer

Date: February 28, 2017

Exhibit 31.2

**CFO CERTIFICATION PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, Robert P. Mundy, certify that:

(1) I have reviewed this annual report on Form 10-K of Packaging Corporation of America (PCA);

(2) Based on my knowledge, this annual 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 annual report;

(3) Based on my knowledge, the financial statements, and other financial information included in this annual report, fairly present in all material respects the financial condition, results of operations and cash flows of PCA as of, and for, the periods presented in this annual report;

(4) PCA’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 PCA 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 PCA, 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 PCA’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 PCA’s internal control over financial reporting that occurred during PCA’s most recent fiscal quarter (PCA’s fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, PCA’s internal control over financial reporting; and

(5) PCA’s other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to PCA’s auditors and the Audit Committee of PCA’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 PCA’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 PCA’s internal control over financial reporting.

/s/ ROBERT P. MUNDY

Robert P. Mundy
Senior Vice President and Chief Financial Officer

Date: February 28, 2017

Exhibit 32

CERTIFICATIONS OF CHIEF EXECUTIVE OFFICER AND
CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. §1350,
AS ADOPTED PURSUANT TO
SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

We are providing this Certificate pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, 18 U.S.C., Section 1350. It accompanies the Annual Report on Form 10-K of Packaging Corporation of America for the year ended December 31, 2016.

I, Mark W. Kowlzan, Chief Executive Officer of Packaging Corporation of America (the "Company"), certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Annual Report of the Company on Form 10-K for the period ended December 31, 2016 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 such Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ MARK W. KOWLZAN

Mark W. Kowlzan
Chairman of the Board and Chief Executive Officer

Date: February 28, 2017

I, Robert P. Mundy, Chief Financial Officer of Packaging Corporation of America (the "Company"), certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Annual Report of the Company on Form 10-K for the period ended December 31, 2016 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 such Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ ROBERT P. MUNDY

Robert P. Mundy
Senior Vice President and Chief Financial Officer

Date: February 28, 2017