# UNITED STATES <br> SECURITIES AND EXCHANGE COMMISSION 

Washington, D.C. 20549

## FORM 10-Q

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

For the quarterly period ended June 30, 2017
or

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

For the transition period from $\qquad$ to $\qquad$
Commission file number 1-15399

| Delaware | 36-4277050 |
| :---: | :---: |
| (State or Other Jurisdiction of |  |
| Incorporation or Organization) | (I.R.S. Employer Identification No.) |
| West Field Court, Lake Forest, Illinois | $\mathbf{6 0 0 4 5}$ |
| (Address of Prinicpal Executive Offices) | (Zip Code) |

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

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 $\boxtimes$ No $\square$

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 $\boxtimes$ No $\square$

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

| Large accelerated filer | $\boxed{ }$ |  | Accelerated filer |
| :--- | :--- | :--- | :--- |
| Non-accelerated filer | $\square$ | (Do not check if a smaller reporting company) | Smaller reporting company |

## Emerging growth company

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

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

As of July 28, 2017 the Registrant had outstanding 94,351,468 shares of common stock, par value $\$ 0.01$ per share.

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All reports we file with the Securities and Exchange Commission (SEC) are available free of charge via the Electronic Data Gathering Analysis and Retrieval (EDGAR) System on the SEC website at www.sec.gov. We also provide copies of our SEC filings at no charge upon request and make electronic copies of our reports available through our website at www.packagingcorp.com as soon as reasonably practicable after filing such material with the SEC.

## PART I

## FINANCIAL INFORMATION

## Item 1. FINANCIAL STATEMENTS

## Packaging Corporation of America

## Consolidated Statements of Income and Comprehensive Income

(unaudited, dollars in millions, except per-share data)

|  | Three Months Ended |  |  |  | Six Months Ended |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | June 30, |  |  |  | June 30, |  |  |  |
|  | 2017 |  | 2016 |  | 2017 |  | 2016 |  |
| Statements of Income: |  |  |  |  |  |  |  |  |
| Net sales | \$ | 1,584.0 | \$ | 1,417.4 | \$ | 3,120.5 | \$ | 2,818.4 |
| Cost of sales |  | (1,219.4) |  | $(1,097.3)$ |  | $(2,417.3)$ |  | $(2,199.3)$ |
| Gross profit |  | 364.6 |  | 320.1 |  | 703.2 |  | 619.1 |
| Selling, general, and administrative expenses |  | (130.2) |  | (114.8) |  | (258.7) |  | (229.1) |
| Other expense, net |  | (0.6) |  | (5.1) |  | (7.6) |  | (9.0) |
| Income from operations |  | 233.8 |  | 200.2 |  | 436.9 |  | 381.0 |
| Interest expense, net |  | (25.2) |  | (22.5) |  | (49.2) |  | (44.1) |
| Income before taxes |  | 208.6 |  | 177.7 |  | 387.7 |  | 336.9 |
| Provision for income taxes |  | (65.4) |  | (61.8) |  | (127.1) |  | (117.3) |
| Net income | \$ | 143.2 | \$ | 115.9 | \$ | 260.6 | \$ | 219.6 |
|  |  |  |  |  |  |  |  |  |
| Net income per common share: |  |  |  |  |  |  |  |  |
| Basic | \$ | 1.52 | \$ | 1.23 | \$ | 2.76 | \$ | 2.32 |
| Diluted | \$ | 1.52 | \$ | 1.23 | \$ | 2.76 | \$ | 2.32 |
| Dividends declared per common share | \$ | 0.63 | \$ | 0.55 | \$ | 1.26 | \$ | 1.10 |
|  |  |  |  |  |  |  |  |  |
| Statements of Comprehensive Income: |  |  |  |  |  |  |  |  |
| Net Income | \$ | 143.2 | \$ | 115.9 | \$ | 260.6 | \$ | 219.6 |
| Other comprehensive income, net of tax: |  |  |  |  |  |  |  |  |
| Foreign currency translation adjustment |  | (0.1) |  | - |  | (0.3) |  | - |
| Reclassification adjustments to cash flow hedges included in net income, net of tax of $\$ 0.6$ million, $\$ 0.6$ million, $\$ 1.2$ million, and $\$ 1.1$ million |  | 0.8 |  | 0.8 |  | 1.6 |  | 1.7 |
| Amortization of pension and postretirement plans actuarial loss and prior service cost, net of tax of $\$ 1.2$ million, $\$ 1.0$ million, $\$ 2.3$ million, and $\$ 2.0$ million |  | 2.1 |  | 1.6 |  | 4.3 |  | 3.2 |
| Changes in unfunded employee benefit obligation net of tax of $\$ 0.0$ million, $\$ 2.0$ million, $\$ 0.0$ million and $\$ 2.0$ million |  | - |  | 3.1 |  | - |  | 3.1 |
| Other comprehensive income |  | 2.8 |  | 5.5 |  | 5.6 |  | 8.0 |
| Comprehensive income | \$ | 146.0 | \$ | 121.4 | \$ | 266.2 | \$ | 227.6 |

See accompanying condensed notes to unaudited quarterly consolidated financial statements.

## Packaging Corporation of America

## Consolidated Balance Sheets

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

|  | June 30,$2017$ |  | $\begin{gathered} \text { December 31, } \\ 2016 \\ \hline \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: |
| ASSETS |  |  |  |  |
| Current assets: |  |  |  |  |
| Cash and cash equivalents | \$ | 321.0 | \$ | 239.3 |
| Accounts receivable, net of allowance for doubtful accounts and customer deductions of \$10.2 million and \$10.1 million as of June 30, 2017, and December 31, 2016, respectively |  | 755.2 |  | 689.2 |
| Inventories |  | 734.4 |  | 723.6 |
| Prepaid expenses and other current assets |  | 52.8 |  | 30.3 |
| Federal and state income taxes receivable |  | - |  | 13.9 |
| Total current assets |  | 1,863.4 |  | 1,696.3 |
| Property, plant, and equipment, net |  | 2,872.5 |  | 2,895.7 |
| Goodwill |  | 731.1 |  | 737.9 |
| Intangible assets, net |  | 356.2 |  | 367.1 |
| Other long-term assets |  | 80.0 |  | 80.0 |
| Total assets | \$ | 5,903.2 | \$ | 5,777.0 |
| LIABILITIES AND STOCKHOLDERS' EQUITY |  |  |  |  |
| Current liabilities: |  |  |  |  |
| Current maturities of long-term debt | \$ | 156.5 | \$ | 25.8 |
| Capital lease obligations |  | 1.3 |  | 1.3 |
| Accounts payable |  | 349.2 |  | 323.8 |
| Dividends payable |  | 60.1 |  | 59.9 |
| Federal and state income taxes payable |  | 2.5 |  | - |
| Accrued liabilities |  | 177.5 |  | 201.2 |
| Accrued interest |  | 13.1 |  | 13.4 |
| Total current liabilities |  | 760.2 |  | 625.4 |
| Long-term liabilities: |  |  |  |  |
| Long-term debt |  | 2,457.3 |  | 2,620.0 |
| Capital lease obligations |  | 19.7 |  | 20.3 |
| Deferred income taxes |  | 342.7 |  | 334.7 |
| Compensation and benefits |  | 356.3 |  | 357.2 |
| Other long-term liabilities |  | 60.4 |  | 59.6 |
| Total long-term liabilities |  | 3,236.4 |  | 3,391.8 |
| Commitments and contingent liabilities |  |  |  |  |
| Stockholders' equity: |  |  |  |  |
| Common stock, par value $\$ 0.01$ per share, 300.0 million shares authorized, 94.4 million and 94.2 million shares issued as of June 30, 2017, and December 31, 2016, respectively |  | 0.9 |  | 0.9 |
| Additional paid in capital |  | 460.9 |  | 451.4 |
| Retained earnings |  | 1,578.8 |  | 1,447.1 |
| Accumulated other comprehensive loss |  | (134.0) |  | (139.6) |
| Total stockholders' equity |  | 1,906.6 |  | 1,759.8 |
| Total liabilities and stockholders' equity | \$ | 5,903.2 | \$ | 5,777.0 |

See accompanying condensed notes to unaudited quarterly consolidated financial statements.

## Packaging Corporation of America

## Consolidated Statements of Cash Flows

(unaudited, dollars in millions)

|  | Six Months Ended |  |  |  |
| :---: | :---: | :---: | :---: | :---: |
|  | June 30, |  |  |  |
|  | 2017 |  | 2016 |  |
| Cash Flows from Operating Activities: |  |  |  |  |
| Net income | \$ | 260.6 | \$ | 219.6 |
| Adjustments to reconcile net income to net cash provided by operating activities: |  |  |  |  |
| Depreciation, depletion, and amortization of intangibles |  | 186.2 |  | 176.3 |
| Amortization of deferred financing costs |  | 4.0 |  | 3.8 |
| Share-based compensation expense |  | 10.2 |  | 10.3 |
| Deferred income tax provision |  | 3.9 |  | 1.3 |
| Pension and post retirement benefits expense, net of contributions |  | 4.9 |  | 8.7 |
| Other, net |  | 0.7 |  | 4.2 |
| Changes in operating assets and liabilities: |  |  |  |  |
| (Increase) decrease in assets - |  |  |  |  |
| Accounts receivable |  | (66.1) |  | (26.9) |
| Inventories |  | (10.8) |  | 5.5 |
| Prepaid expenses and other current assets |  | (20.0) |  | (27.5) |
| Increase (decrease) in liabilities - |  |  |  |  |
| Accounts payable |  | 18.8 |  | (4.0) |
| Accrued liabilities |  | (24.1) |  | (23.3) |
| Federal and state income taxes payable / receivable |  | 17.3 |  | 28.2 |
| Net cash provided by operating activities |  | 385.6 |  | 376.2 |
| Cash Flows from Investing Activities: |  |  |  |  |
| Additions to property, plant, and equipment |  | (139.4) |  | (121.8) |
| Additions to other long term assets |  | (5.5) |  | (6.2) |
| Proceeds from disposals |  | 2.9 |  | 0.3 |
| Other, net |  | 1.1 |  | - |
| Net cash used for investing activities |  | (140.9) |  | (127.7) |
| Cash Flows from Financing Activities: |  |  |  |  |
| Repayments of debt and capital lease obligations |  | (33.7) |  | (3.8) |
| Common stock dividends paid |  | (118.8) |  | (104.9) |
| Repurchases of common stock |  | - |  | (100.3) |
| Shares withheld to cover employee restricted stock taxes |  | (10.5) |  | (10.1) |
| Net cash used for financing activities |  | (163.0) |  | (219.1) |
| Net increase in cash and cash equivalents |  | 81.7 |  | 29.4 |
| Cash and cash equivalents, beginning of period |  | 239.3 |  | 184.2 |
| Cash and cash equivalents, end of period | \$ | 321.0 | \$ | 213.6 |

See accompanying condensed notes to unaudited quarterly consolidated financial statements.

## Condensed Notes to Unaudited Quarterly 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. We are 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 report our business 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 white papers, including communication-based papers and pressure sensitive papers. 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 16 Segment Information.

In these consolidated financial statements, certain amounts in prior periods' consolidated financial statements have been reclassified to conform with the current period presentation.

The consolidated financial statements of PCA as of June 30, 2017 and for the three and six months ended June 30, 2017 and 2016 are unaudited but include all adjustments (consisting only of normal recurring adjustments) that management considers necessary for a fair presentation of such financial statements. The preparation of the consolidated financial statements involves the use of estimates and accruals. Actual results may vary from those estimates. These financial statements have been prepared in accordance with accounting principles generally accepted in the United States for interim financial information and with Article 10 of Regulation S-X of the Securities and Exchange Commission (SEC). Accordingly, they do not include all of the information and footnotes required by accounting principles generally accepted in the United States for complete audited financial statements. Operating results for the three and six months ended June 30, 2017 are not necessarily indicative of the results that may be expected for the year ending December 31, 2017. These consolidated financial statements should be read in conjunction with our Annual Report on Form 10-K for the year ended December 31, 2016.

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

## 2. Acquisitions

## 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. We financed the acquisition with 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 a multi-color graphics and technical innovation. TimBar's financial results are included in the Packaging segment from the date of acquisition.

The Company accounted for the TimBar acquisition 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):

|  | 12/31/16 Allocation |  | Adjustments |  | Revised Allocation |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Goodwill | \$ | 157.3 | \$ | (1.1) | \$ | 156.2 |
| Other intangible assets |  | 94.4 |  | - |  | 94.4 |
| Property, plant and equipment |  | 95.3 |  | - |  | 95.3 |
| Other net assets |  | 38.6 |  | - |  | 38.6 |
| Net assets acquired | \$ | 385.6 | \$ | (1.1) | \$ | 384.5 |

During the first quarter of 2017, we received $\$ 1.1$ million from the seller related to a working capital adjustment. We recorded the adjustment as a decrease to goodwill which lowered the purchase price to $\$ 384.5$ million. The purchase price allocation presented above is preliminary and is subject to the finalization of working capital adjustments. Our current estimates and assumptions may change as more information becomes available. We expect to finalize the allocations 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 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 production facility and five warehousing facilities, for a purchase price of $\$ 99.7$ million, net of cash acquired. We paid the purchase price with 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's financial results are included in the Packaging segment from the date of acquisition.

The Company accounted for the Columbus Container acquisition 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):

|  | 12/31/16 Allocation |  | Adjustments |  | Revised Allocation |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Goodwill | \$ | 36.6 | \$ | (5.7) | \$ | 30.9 |
| Other intangible assets |  | 26.3 |  | 6.0 |  | 32.3 |
| Property, plant and equipment |  | 27.2 |  | - |  | 27.2 |
| Other net assets |  | 9.6 |  | (0.3) |  | 9.3 |
| Net assets acquired | \$ | 99.7 | \$ | - | \$ | 99.7 |

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 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 deductible for tax purposes.

Other intangible assets, primarily customer relationships, were assigned an estimated weighted average useful life of 14.1 years.

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

## 3. 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):

| Numerator: | Three Months Ended June 30, |  |  |  | Six Months Ended June 30, |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2017 |  | 2016 |  | 2017 |  | 2016 |  |
| Net income | \$ | 143.2 | \$ | 115.9 | \$ | 260.6 | \$ | 219.6 |
| Less: distributed and undistributed earnings allocated to participating securities |  | (1.2) |  | (1.2) |  | (2.3) |  | (2.3) |
| Net income attributable to common shareholders | \$ | 142.0 | \$ | 114.7 | \$ | 258.3 | \$ | 217.3 |
| Denominator: |  |  |  |  |  |  |  |  |
| Weighted average basic common shares outstanding |  | 93.4 |  | 93.2 |  | 93.4 |  | 93.6 |
| Effect of dilutive securities |  | 0.2 |  | 0.1 |  | 0.2 |  | 0.1 |
| Weighted average diluted common shares outstanding |  | 93.6 |  | 93.3 |  | 93.6 |  | 93.7 |
| Basic income per common share | \$ | 1.52 | \$ | 1.23 | \$ | 2.76 | \$ | 2.32 |
| Diluted income per common share | \$ | 1.52 | \$ | 1.23 | \$ | 2.76 | \$ | 2.32 |

## 4. Other Income (Expense), Net

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

|  | Three Months Ended June 30, |  |  |  | Six Months Ended June 30, |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2017 |  | 2016 |  | 2017 |  | 2016 |  |
| DeRidder mill incident (a) | \$ | 2.5 | \$ | - | \$ | (2.5) | \$ | - |
| Integration-related, facilities closure and other costs (b)(c) |  | (0.5) |  | (2.6) |  | (1.3) |  | (4.5) |
| Hexacomb working capital adjustment (d) |  | - |  | - |  | 2.3 |  | - |
| Asset disposals and write-offs |  | (2.4) |  | (1.1) |  | (4.7) |  | (2.9) |
| Other |  | (0.2) |  | (1.4) |  | (1.4) |  | (1.6) |
| Total | \$ | (0.6) | \$ | (5.1) | \$ | (7.6) | \$ | (9.0) |

(a) The three and six months ended June 30, 2017 include $\$ 2.5$ million of net recoveries and $\$ 2.5$ million of costs, respectively, for the property damage and business interruption insurance recoveries and corresponding costs related to the February 2017 explosion at our DeRidder, LA mill.
(b) The three and six months ended June 30, 2017 include $\$ 0.5$ million and $\$ 1.3$ million of charges consisting of closure costs related to corrugated products facilities, integration costs related to the recent acquisitions, and costs related to a lump sum settlement payment of a multiemployer pension plan withdrawal liability for one of our corrugated products facilities.
(c) The three and six months ended June 30, 2016 include $\$ 2.6$ million and $\$ 4.5$ million of charges consisting of closure costs related to corrugated products facilities and a paper products facility, acquisition-related costs for the TimBar Corporation acquisition, and costs related to our withdrawal from a multiemployer pension plan for one of our corrugated products facilities.
(d) The six months ended June 30, 2017 include $\$ 2.3$ million of income related to a working capital adjustment from the April 2015 sale of our Hexacomb corrugated manufacturing operations in Europe and Mexico.

## 5. Income Taxes

For the three months ended June 30, 2017 and 2016 we recorded $\$ 65.4$ million and $\$ 61.8$ million of income tax expense and had an effective tax rate of $31.4 \%$ and $34.8 \%$, respectively. The decrease in our effective tax rate for the three months ended June 30, 2017 compared with the same period in 2016, was primarily due to the adoption of ASU 2016-09 (Topic 718): Improvements to Employee Share-Based Payment Accounting, which requires all excess tax benefits and deficiencies from employee share-based payment awards to be recognized in the income statement as opposed to additional paid in capital.

For the six months ended June 30, 2017 and 2016, we recorded $\$ 127.1$ million and $\$ 117.3$ million of income tax expense and had an effective tax rate of $32.8 \%$ and $34.8 \%$, respectively. The decrease in our effective tax rate for the six months ended June 30, 2017 compared with the same period in 2016, was primarily due to the adoption of ASU 2016-09.

Our effective tax rate may differ from the federal statutory income tax rate of $35.0 \%$, due primarily to the effect of employee share-based payment awards, the domestic manufacturing deduction, and state and local income taxes.

During the three and six months ended June 30, 2017 there were no significant changes to our uncertain tax positions. For more information, see Note 6, Income Taxes, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of our 2016 Annual Report on Form 10-K.

During the six months ended June 30, 2017 and 2016 cash paid for taxes, net of refunds received, was $\$ 105.7$ million and $\$ 83.3$ million, respectively.

## 6. Inventories

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.

|  | June 30,$2017$ |  | $\begin{gathered} \text { December 31, } \\ 2016 \\ \hline \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: |
| Raw materials | \$ | 257.6 | \$ | 271.9 |
| Work in process |  | 13.6 |  | 12.9 |
| Finished goods |  | 222.4 |  | 206.5 |
| Supplies and materials |  | 240.8 |  | 232.3 |
| Inventories | \$ | 734.4 | \$ | 723.6 |

## 7. Property, Plant, and Equipment

The components of property, plant, and equipment were as follows (dollars in millions):

|  | June 30, <br> 2017 |  | $\begin{gathered} \text { December 31, } \\ 2016 \\ \hline \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: |
| Land and land improvements | \$ | 156.3 | \$ | 149.7 |
| Buildings |  | 725.7 |  | 717.1 |
| Machinery and equipment |  | 5,017.9 |  | 4,951.4 |
| Construction in progress |  | 152.6 |  | 125.4 |
| Other |  | 67.5 |  | 66.7 |
| Property, plant and equipment, at cost |  | 6,120.0 |  | 6,010.3 |
| Less accumulated depreciation |  | $(3,247.5)$ |  | (3,114.6) |
| Property, plant, and equipment, net | \$ | 2,872.5 | \$ | 2,895.7 |

Depreciation expense for the three months ended June 30, 2017 and 2016 was $\$ 83.6$ million and $\$ 79.9$ million, respectively. During the six months ended June 30 , 2017 and 2016, depreciation expense was $\$ 166.0$ million and $\$ 160.6$ million, respectively.

At June 30, 2017 and December 31, 2016 purchases of property, plant, and equipment included in accounts payable were $\$ 19.0$ million and $\$ 12.8$ million, respectively.

## 8. 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 June 30, 2017 and December 31, 2016 we had $\$ 675.9$ million and $\$ 682.7$ million of goodwill recorded in our Packaging segment, respectively. At both June 30, 2017 and December 31, 2016 we had $\$ 55.2$ million of goodwill recorded in our Paper segment.

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

|  | Goodwill |  |
| :--- | ---: | ---: |
| Balance at January 1, 2017 | 737.9 |  |
| Acquisitions (a)(b) | $(6.8)$ |  |
| Balance at June 30, 2017 | 731.1 |  |

(a) During the six months ended June 30, 2017, the Company recorded a $\$ 5.7$ million opening balance sheet adjustment to decrease the goodwill balance for the Company’s November 2016 acquisition of Columbus Container, Inc.
(b) During the quarter ended March 31, 2017, the Company received $\$ 1.1$ million from the seller related to a working capital adjustment. This adjustment was recorded as a decrease to the goodwill balance for the Company's August 2016 acquisition of TimBar Corporation.

## Intangible Assets

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

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

|  | June 30, 2017 |  |  |  |  | December 31, 2016 |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 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 | 12.7 | \$ | 429.4 | \$ | 93.9 | 13.1 | \$ | 424.5 | \$ | 79.8 |
| Trademarks and trade names | 10.5 |  | 28.8 |  | 10.6 | 10.5 |  | 27.7 |  | 8.1 |
| Other | 4.1 |  | 4.2 |  | 1.7 | 4.3 |  | 4.2 |  | 1.4 |
| Total intangible assets (excluding goodwill) | 12.5 | \$ | 462.4 | \$ | 106.2 | 12.9 | \$ | 456.4 | \$ | 89.3 |

During the six months ended June 30, 2017 and 2016, amortization expense was $\$ 16.9$ million and $\$ 11.2$ million, respectively.

## 9. Accrued Liabilities

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

|  | June 30, 2017 |  | $\begin{gathered} \text { December 31, } \\ 2016 \\ \hline \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: |
| Compensation and benefits | \$ | 99.5 | \$ | 120.4 |
| Medical insurance and workers' compensation |  | 29.1 |  | 28.8 |
| Franchise, property, sales and use taxes |  | 18.2 |  | 16.7 |
| Customer volume discounts and rebates |  | 18.0 |  | 18.9 |
| Environmental liabilities and asset retirement obligations |  | 4.5 |  | 6.4 |
| Severance, retention, and relocation |  | 3.2 |  | 3.0 |
| Other |  | 5.0 |  | 7.0 |
| Total | \$ | 177.5 | \$ | 201.2 |

## 10. Debt

During the six months ended June 30, 2017, we made principal payments of $\$ 29.8$ million and $\$ 3.3$ million on our five-year term loan due August 2021 and our sevenyear term loan due October 2020, respectively. For the six months ended June 30, 2017 and 2016, cash payments for interest were $\$ 48.1$ million and $\$ 43.1$ million, respectively.

Included in interest expense, net, are amortization of treasury lock settlements and amortization of financing costs. For both the three months ended June 30,2017 and 2016, amortization of treasury lock settlements was $\$ 1.4$ million, and for both the six months ended June 30, 2017 and 2016, amortization of treasury locks was $\$ 2.8$ million. For both the three months ended June 30, 2017 and 2016, amortization of financing costs was $\$ 0.5$ million, and during the six months ended June 30 , 2017 and 2016 , amortization of financing costs was $\$ 1.0$ million and $\$ 0.9$ million, respectively.

At June 30, 2017 we had $\$ 1,647.7$ million of fixed-rate senior notes and $\$ 977.6$ million of variable-rate term loans outstanding. At June 30 , 2017 the fair value of our fixed-rate debt was estimated to be $\$ 1,740.4$ 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) within the fair value hierarchy, which is further defined in 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 our 2016 Annual Report on Form 10-K. 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.

For more information on our long-term debt and interest rates on that debt, see Note 9, Debt, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of our 2016 Annual Report on Form 10-K.

## 11. Employee Benefit Plans and Other Postretirement Benefits

The components of net periodic benefit cost for our pension plans were as follows (dollars in millions):

|  | Pension Plans |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Three Months Ended June 30, |  |  |  | Six Months Ended June 30, |  |  |  |
|  | 2017 |  | 2016 |  | 2017 |  | 2016 |  |
| Service cost | \$ | 6.1 | \$ | 6.1 | \$ | 12.2 | \$ | 12.2 |
| Interest cost |  | 10.4 |  | 10.2 |  | 20.8 |  | 20.4 |
| Expected return on plan assets |  | (13.5) |  | (12.4) |  | (27.0) |  | (24.8) |
| Net amortization of unrecognized amounts |  |  |  |  |  |  |  |  |
| Prior service cost |  | 1.5 |  | 1.4 |  | 3.0 |  | 2.8 |
| Actuarial loss |  | 1.9 |  | 1.4 |  | 3.7 |  | 2.8 |
| Net periodic benefit cost | \$ | 6.4 | \$ | 6.7 | \$ | 12.7 | \$ | 13.4 |

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 additional discretionary contributions based on the funded status of the plans, tax deductibility, income from operations, and other factors. During the three and six months ended June 30, 2017 and 2016 payments to our nonqualified pension plans were insignificant. For the three and six months ended June 30, 2017, we made contributions of $\$ 2.2$ million and $\$ 5.9$ million, respectively, to our qualified pension plans. We made a contribution of $\$ 3.7$ million to our qualified plans during the three and six months ended June 30, 2016. We expect to contribute at least the estimated required minimum contributions to our qualified plans of approximately $\$ 8.0$ million in 2017.

The components of net periodic benefit cost for our postretirement plans were as follows (dollars in millions):

|  | Postretirement Plans |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Three Months Ended June 30, |  |  |  | Six Months Ended June 30, |  |  |  |
|  | 2017 |  | 2016 |  | 2017 |  | 2016 |  |
| Service cost | \$ | 0.1 | \$ | 0.2 | \$ | 0.2 | \$ | 0.4 |
| Interest cost |  | 0.2 |  | 0.2 |  | 0.3 |  | 0.4 |
| Net amortization of unrecognized amounts |  |  |  |  |  |  |  |  |
| Prior service cost |  | (0.1) |  | - |  | (0.1) |  | - |
| Actuarial loss |  | - |  | (0.2) |  | - |  | (0.4) |
| Net periodic benefit cost | \$ | 0.2 | \$ | 0.2 | \$ | 0.4 | \$ | 0.4 |

## 12. Share-Based Compensation

The Company has a long-term equity incentive plan, which allows for grants of restricted stock, performance awards, stock appreciation rights, and stock options 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 June 30, 2017, 1.0 million shares were 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.

The following table presents restricted stock and performance unit award activity for the six months ended June 30, 2017:

|  | Restricted Stock |  |  | Performance Units |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Shares | Weighted Average GrantDate Fair Value |  | Shares | Weighted Average GrantDate Fair Value |  |
| Outstanding at January 1, 2017 | 786,079 | \$ | 63.44 | 232,088 | \$ | 62.68 |
| Granted | 173,199 |  | 107.57 | 61,861 |  | 108.19 |
| Vested | $(206,707)$ |  | 51.05 | $(67,391)$ |  | 56.08 |
| Forfeitures | $(4,341)$ |  | 65.51 | - |  | - |
| Outstanding at June 30, 2017 | 748,230 | \$ | 77.07 | 226,558 | \$ | 77.07 |

## 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):

|  | Three Months Ended June 30, |  |  |  | Six Months Ended June 30, |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2017 |  | 2016 |  | 2017 |  | 2016 |  |
| Restricted stock | \$ | 4.1 | \$ | 3.9 | \$ | 7.5 | \$ | 8.8 |
| Performance units |  | 1.5 |  | 0.8 |  | 2.7 |  | 1.5 |
| Total share-based compensation expense |  | 5.6 |  | 4.7 |  | 10.2 |  | 10.3 |
| Income tax benefit |  | (2.1) |  | (1.8) |  | (3.9) |  | (4.0) |
| Share-based compensation expense, net of tax benefit | \$ | 3.5 | \$ | 2.9 | \$ | 6.3 | \$ | 6.3 |

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 at June 30, 2017 was as follows (dollars in millions):

|  | June 30, 2017 |  |  |
| :---: | :---: | :---: | :---: |
|  | Unrecognized Compensation Expense |  | Remaining Weighted Average Recognition Period (in years) |
| Restricted stock | \$ | 38.2 | 2.9 |
| Performance units |  | 12.0 | 3.2 |
| Total unrecognized share-based compensation expense | \$ | 50.2 | 3.0 |

## 13. Stockholders' Equity

## Dividends

During the six months ended June 30, 2017, we paid $\$ 118.8$ million of dividends to shareholders. On May 17, 2017 PCA's Board of Directors announced a regular quarterly cash dividend of $\$ 0.63$ per share of common stock, which was paid on July 14, 2017 to shareholders of record as of June 15, 2017. The April 2017 dividend payment was $\$ 59.4$ million.

## Repurchases of Common Stock

On February 25, 2016, PCA announced that its Board of Directors authorized the repurchase of an additional \$200.0 million of the Company's outstanding common stock. 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.

The Company did not repurchase any shares of its common stock during the three and six months ended June 30, 2017.

## Accumulated Other Comprehensive Income (Loss)

Changes in accumulated other comprehensive income (loss) (AOCI) by component were as 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 January 1, 2017 | \$ | (17.8) | \$ | (0.4) | \$ | (121.4) | \$ | (139.6) |
| Amounts reclassified from AOCI, net of tax |  | 1.6 |  | (0.3) |  | 4.3 |  | 5.6 |
| Balance at June 30, 2017 | \$ | (16.2) | \$ | (0.7) | \$ | (117.1) | \$ | (134.0) |


|  | Amounts Reclassified from AOCI |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Three Months Ended June 30, |  |  |  | Six Months Ended June 30, |  |  |  |  |
| Details about AOCI Components | 2017 |  | 2016 |  | 2017 |  | 2016 |  |  |
| Unrealized loss on treasury locks, net | \$ | (1.4) | \$ | (1.4) | \$ | (2.8) | \$ | (2.8) | See (a) below |
|  |  | 0.6 |  | 0.6 |  | 1.2 |  | 1.1 | Tax benefit |
|  | \$ | (0.8) | \$ | (0.8) | \$ | (1.6) | \$ | (1.7) | Net of tax |
| Unfunded employee benefit obligations |  |  |  |  |  |  |  |  |  |
| Amortization of prior service costs | \$ | (1.4) | \$ | (1.4) | \$ | (2.9) | \$ | (2.8) | See (b) below |
| Amortization of actuarial losses |  | (1.9) |  | (1.2) |  | (3.7) |  | (2.4) | See (b) below |
|  |  | (3.3) |  | (2.6) |  | (6.6) |  | (5.2) | Total before tax |
|  |  | 1.2 |  | 1.0 |  | 2.3 |  | 2.0 | Tax benefit |
|  | \$ | (2.1) | \$ | (1.6) | \$ | (4.3) | \$ | (3.2) | 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, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of our 2016 Annual Report on Form 10-K.
(b) These AOCI components are included in the computation of net pension and postretirement benefit costs. See Note 11, Employee Benefit Plans and Other Postretirement Benefits, for additional information.

## 14. 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 represent approximately $7 \%$ and $8 \%$ of our total Company sales revenue, for the six months ended June 30, 2017 and 2016, respectively, and approximately $44 \%$ and $41 \%$ of our Paper segment sales revenue for both of those periods, respectively. At June 30, 2017 and December 31, 2016 we had $\$ 33.1$ million and $\$ 31.8$ million of accounts receivable due from Office Depot, which represents $4 \%$ and $5 \%$ of our total Company accounts receivable for both of those periods, 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.

## 15. 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 noninventory working capital items) on our Consolidated Balance Sheets were $\$ 4.5$ million at June 30, 2017 and $\$ 5.0$ million at December 31, 2016. During the three months ended June 30 , 2017 and 2016, we recorded $\$ 21.7$ million and $\$ 17.1$ million, respectively, and during the six months ended June 30, 2017 and 2016 we recorded $\$ 45.2$ million and $\$ 39.3$ 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".

During the three months ended June 30, 2017 and 2016, fiber purchases from related parties were $\$ 4.6$ million and $\$ 4.5$ million, respectively. Fiber purchases from related parties were $\$ 9.6$ million and $\$ 9.2$ million, respectively, during the six months ended June 30, 2017 and 2016. 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.

## 16. 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 requires distinct operating and marketing strategies.

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

Selected financial information by reportable segment was as follows (dollars in millions):

| Three Months Ended June 30, 2017 | Sales, net |  |  |  |  |  | OperatingIncome (Loss) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Trade |  | Inter-segment |  | Total |  |  |  |
| Packaging | \$ | 1,305.5 | \$ | 6.0 | \$ | 1,311.5 | \$ | 224.5 |
| Paper |  | 253.7 |  | - |  | 253.7 |  | 29.1 |
| Corporate and Other |  | 24.8 |  | 31.1 |  | 55.9 |  | (19.8) |
| Intersegment eliminations |  | - |  | (37.1) |  | (37.1) |  | - |
|  | \$ | 1,584.0 |  | - | \$ | 1,584.0 |  | 233.8 |
| Interest expense, net |  |  |  |  |  |  |  | (25.2) |
| Income before taxes |  |  |  |  |  |  | \$ | 208.6 |


| Three Months Ended June 30, 2016 | Sales, net |  |  |  |  |  | OperatingIncome (Loss) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Trade |  | Inter-segment |  | Total |  |  |  |
| Packaging | \$ | 1,123.6 | \$ | 1.7 | \$ | 1,125.3 | \$ | 192.4 (c) |
| Paper |  | 266.8 |  | - |  | 266.8 |  | 24.4 |
| Corporate and Other |  | 27.0 |  | 33.0 |  | 60.0 |  | (16.6) (c) |
| Intersegment eliminations |  | - |  | (34.7) |  | (34.7) |  | - |
|  | \$ | 1,417.4 | \$ | - | \$ | 1,417.4 |  | 200.2 |
| Interest expense, net |  |  |  |  |  |  |  | (22.5) |
| Income before taxes |  |  |  |  |  |  | \$ | 177.7 |


| Six Months Ended June 30, 2017 | Sales, net |  |  |  |  |  | $\begin{gathered} \text { Operating } \\ \text { Income (Loss) } \\ \hline \end{gathered}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Trade |  | Inter-segment |  | Total |  |  |  |
| Packaging | \$ | 2,556.8 | \$ | 11.6 | \$ | 2,568.4 | \$ | 415.3 (b) |
| Paper |  | 512.9 |  | - |  | 512.9 |  | 58.9 |
| Corporate and Other |  | 50.8 |  | 59.3 |  | 110.1 |  | (37.3) (b) |
| Intersegment eliminations |  | - |  | (70.9) |  | (70.9) |  | - |
|  | \$ | 3,120.5 |  | - | \$ | 3,120.5 |  | 436.9 |
| Interest expense, net |  |  |  |  |  |  |  | (49.2) |
| Income before taxes |  |  |  |  |  |  | \$ | 387.7 |


| Six Months Ended June 30, 2016 | Sales, net |  |  |  |  |  | Operating <br> Income (Loss) |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Trade |  | Inter-segment |  | Total |  |  |  |
| Packaging | \$ | 2,217.4 | \$ | 3.4 | \$ | 2,220.8 | \$ | 353.9 (c) |
| Paper |  | 547.3 |  | - |  | 547.3 |  | 60.5 |
| Corporate and Other |  | 53.7 |  | 69.0 |  | 122.7 |  | (33.4) (c) |
| Intersegment eliminations |  | - |  | (72.4) |  | (72.4) |  | - |
|  | \$ | 2,818.4 | \$ | - | \$ | 2,818.4 |  | 381.0 |
| Interest expense, net |  |  |  |  |  |  |  | (44.1) |
| Income before taxes |  |  |  |  |  |  | \$ | 336.9 |

[^0](b) The six months ended June 30, 2017 include:

1. $\$ 5.0$ million of costs for the property damage and business interruption insurance deductible corresponding to the February 2017 explosion at our DeRidder, LA mill.
2. $\$ 1.2$ million of charges consisting of closure costs related to corrugated products facilities, integration costs related to the recent acquisitions, and costs related to a lump sum settlement payment of a multiemployer pension plan withdrawal liability for one of our corrugated products facilities.
3. $\$ 2.3$ million of income related to a working capital adjustment from the April 2015 sale of our Hexacomb corrugated manufacturing operations in Europe and Mexico.
(c) The three and six months ended June 30, 2016 include $\$ 2.9$ million and $\$ 5.7$ million of charges consisting of closure costs related to corrugated products facilities and a paper products facility, acquisition-related costs for the TimBar acquisition, and costs related to our withdrawal from a multiemployer pension plan for one of our corrugated products facilities.

## 17. New and Recently Adopted Accounting Standards

In May 2014, the Financial Accounting Standards Board ("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 new standard becomes effective for us as of January 1, 2018, at which time we expect to adopt it using the modified retrospective method.

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 have reviewed representative contracts to identify corresponding purchase obligations, variable consideration, acquisition costs and fulfillment costs. In addition, we are in the process of identifying and assessing appropriate changes to our business processes, systems and controls to support revenue recognition and disclosures under the new standard. This team has reported, and will continue to report, its findings and progress of the project to management and the Audit Committee on a periodic basis.

While we continue to assess ASU 2014-09, we do not expect that there will be a material effect on the Company's financial position or its results of operations as a result of adoption and we anticipate the primary impact to be the additional required disclosures around revenue recognition in the notes to the consolidated financial statements.

Effective January 1, 2017, the Company adopted 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 were previously 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. As a result of this adoption, the Company recorded $\$ 6.0$ million and $\$ 6.3$ million of excess tax benefits from share-based compensation as an income tax benefit in the income statement for the three and six months ended June 30, 2017, respectively. The Company also retrospectively reclassified excess tax benefits and deficiencies as an operating activity rather than as a financing activity on its consolidated statements of cash flows. The Company will continue to estimate forfeitures at the time of the grant. The Company had no unrecognized excess tax benefits from prior periods to record upon the adoption of this ASU, and all other adopted amendments did not have a material impact on the Company's financial position, results of operations and cash flow.

Effective January 1, 2017, the Company prospectively adopted 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 adoption of this guidance did not have a material impact on the Company's financial position, results of operations and cash flow.

In May 2017, the FASB issued ASU 2017-09 Compensation - Stock Compensation (Topic 718): Scope of Modification Accounting, to clarify which changes to the terms or conditions of a share-based payment award require an entity to apply modification accounting in Topic 718. This ASU is effective for annual periods beginning after December 15, 2017. This ASU will be applied prospectively when changes to the terms or conditions of a share-based payment award occur.

In January 2017, the FASB issued ASU 2017-04 (Topic 350): Intangibles - Goodwill and Other - Simplifying the Test for Goodwill Impairment, eliminating the requirement to determine the fair value of individual assets and liabilities of a reporting unit to measure goodwill impairment. Under ASU 2017-04, goodwill impairment testing will be performed by comparing the fair value of the reporting unit with its carrying amount and recognizing an impairment charge for the amount by which the carrying amount exceeds the reporting unit's fair value. This ASU is effective for annual and interim goodwill impairment tests in fiscal years beginning after December 15 , 2019, and early adoption is permitted. This ASU will be applied prospectively to our future goodwill impairment tests.

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 FASB issued ASU 2016-15 (Topic 230), Statement of Cash Flows: 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 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.

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.

## 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, capital commitments, lease obligations, and purchase commitments for goods and services, and legal proceedings, all of which are discussed in Note 9, Debt, and 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 our 2016 Annual Report on Form 10-K.

## Guarantees and Indemnifications

We provide guarantees, indemnifications, and other assurances to third parties in the normal course of our business. These include tort indemnifications, product guarantees, environmental assurances, and representations and warranties in commercial agreements. At June 30, 2017 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.

## DeRidder Mill Incident

On February 8, 2017, a tank located in the pulp mill at the Company's DeRidder, Louisiana facility exploded, resulting in three contractor fatalities and other injuries. The Company has been served with multiple lawsuits and is on notice of additional claims. The Company maintains liability insurance subject to a $\$ 1.0$ million deductible; however, the incident is under investigation and the Company is unable to estimate a range of reasonable possible losses at this time.

The Company has also incurred property damage and business interruption losses and has claimed these losses, subject to a $\$ 5.0$ million deductible, under its property damage and business interruption insurance policy. The Company expects to resolve the claim with the insurance carrier over the next several months.

The Company is cooperating with investigations from the U.S. Occupational Health and Safety Administration, the U.S. Chemical Safety Board and the Environmental Protection Agency relating to the incident.

## Legal Proceedings

We are party to other legal actions arising in the ordinary course of our business. These legal actions include commercial liability claims, premises liability claims, commercial disputes, 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.

## Item 2. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This management's discussion and analysis includes statements regarding our expectations with respect to our future performance, expected business conditions, liquidity, and capital resources. Such statements, along with any other statements that are not historical in nature are forward-looking. These forward-looking statements are subject to numerous risks and uncertainties, including, but not limited to, the risks and uncertainties described in our 2016 Annual Report on Form 10-K, as well as those factors listed in other documents we file with the Securities and Exchange Commission (SEC). We do not assume any obligation to update any forward-looking statement. Our actual results may differ materially from those contained in or implied by any of the forward-looking statements in this Form 10-Q. Please see "Forward Looking Statements" elsewhere in this Item 2.

## Overview

PCA is the fourth largest producer of containerboard products 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 93 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.

This Item 2 is intended to supplement, and should be read in conjunction with, "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in our 2016 Annual Report on Form 10-K.

## Executive Summary

Second quarter net sales were $\$ 1.58$ billion in 2017 and $\$ 1.42$ billion in 2016 . We reported $\$ 143$ million of net income, or $\$ 1.52$ per diluted share, during the second quarter of 2017, compared to $\$ 116$ million of net income, or $\$ 1.23$ per diluted share, during the same period in 2016. The second quarter of 2017 included $\$ 0.5$ million of pretax expense for special items (discussed below) compared to $\$ 3$ million of pre-tax expense for special items in 2016. Excluding special items, we recorded $\$ 144$ million of net income, or $\$ 1.52$ per diluted share, during the second quarter of 2017 , compared to $\$ 118$ million of net income, or $\$ 1.25$ per diluted share, in the second quarter of 2016 . The increase was driven primarily by higher containerboard and corrugated products prices and mix and sales and production volumes, lower costs for annual mill outages, lower taxes, and a partial insurance recovery related to the DeRidder Mill incident, partially offset by higher costs for energy, fiber, labor, freight, and chemicals, higher depreciation and interest expense, and lower Paper segment prices and mix.

Packaging segment income from operations was $\$ 225$ million in the second quarter of 2017, compared to $\$ 192$ million in the second quarter of 2016. Packaging segment earnings before interest, taxes, depreciation, amortization, and depletion (EBITDA) excluding special items was $\$ 303$ million in the second quarter of 2017 and $\$ 267$ million in the second quarter of 2016. The increase was driven primarily by higher containerboard and corrugated products prices and mix and sales and production volumes, and a partial insurance recovery related to the DeRidder Mill incident, partially offset by increased fiber, energy, labor and freight costs.

Paper segment income from operations was $\$ 29$ million in the second quarter of 2017, compared to $\$ 24$ million in the second quarter of 2016. Paper segment EBITDA excluding special items was $\$ 43$ million in the second quarter of 2017, compared to $\$ 39$ million in the second quarter of 2016. The increase was due to lower annual mill outage and fiber costs, partially offset by higher energy and chemical costs, and lower paper prices and mix.

During the first six months of 2017 we reported $\$ 261$ million of net income, or $\$ 2.76$ per diluted share, compared to $\$ 220$ million of net income, or $\$ 2.32$ per diluted share, during the same period in 2016. The six months ended June 30, 2017 included $\$ 4$ million of pre-tax expense for special items (discussed below), compared to $\$ 6$ million of pre-tax expense for special items during the same period in 2016. Excluding special items, we recorded $\$ 263$ million of net income, or $\$ 2.79$ per diluted share, during the first six months of 2017, compared to $\$ 223$ million of net income, or $\$ 2.36$ per diluted share, in the first six months of 2016. The increase was driven primarily by higher containerboard and corrugated products prices and mix and sales and production volumes, higher Paper segment prices and mix, lower costs for annual mill outages and lower taxes, partially offset by higher costs for energy, fiber, labor and freight, higher depreciation and interest expense, and lower Paper segment sales and production volumes. Earnings for the year to date were negatively impacted due to the DeRidder Mill incident described in Note 18 to the Financial Statements included in this report.

Packaging segment income from operations was $\$ 415$ million in the first six months of 2017, compared to $\$ 354$ million in the same period of 2016. Packaging segment EBITDA excluding special items was $\$ 576$ million in the first six months of 2017, compared to $\$ 503$ million in the first six months of 2016. The increase was driven primarily by higher containerboard and corrugated products prices and mix and sales and production volumes, and lower costs for annual mill outages, while costs were higher for fiber, energy, labor, and freight. The Packaging segment was negatively impacted by the DeRidder Mill incident losses described above.

Paper segment income from operations was $\$ 59$ million in the first six months of 2017, compared to $\$ 61$ million in the first six months of 2016. Paper segment EBITDA excluding special items was $\$ 87$ million in the first six months of 2017, compared to $\$ 90$ million in the same period of 2016. The decrease was due primarily to lower paper sales and production volumes, higher costs for energy and chemicals, partially offset by lower costs for fiber and annual mill outage costs, and higher paper prices and mix

## Special Items and Earnings per Diluted Share, Excluding Special Items

The second quarter of 2017 included $\$ 0.5$ million of pre-tax expense for special items compared to $\$ 3$ million of pre-tax expense in the same period in 2016. The special items in the second quarter of 2017 consist of facility closure costs related to corrugated products facilities and integration costs related to recent acquisitions. Second quarter 2016 special items included $\$ 2$ million related to closing a corrugated manufacturing facility and a paper distribution center and $\$ 1$ million related to our withdrawal from a multiemployer pension plan.

The six months ended June 30, 2017 included $\$ 4$ million of pre-tax expense for special items, compared to $\$ 6$ million of pre-tax expense for special items during the same period in 2016. The six months ended June 30, 2017 included expense of $\$ 5$ million for the property damage and business interruption insurance deductible related to the DeRidder Mill incident; \$1 million of charges consisting of closure costs related to corrugated products facilities, integration costs related to the recent acquisitions, and costs related to a lump sum settlement payment for a multiemployer pension plan withdrawal liability; and $\$ 2$ million of income related to a working capital adjustment from the April 2015 sale of our Hexacomb corrugated manufacturing operations in Europe and Mexico. The six months ended June 30, 2016 included $\$ 6$ million of charges consisting of closure costs related to corrugated products facilities and a paper distribution facility, acquisition-related costs for the TimBar Corporation, and costs related to our withdrawal from a multiemployer pension plan.

A reconciliation of reported earnings per diluted share to earnings per share, excluding special items, for the three and six months ended June 30 , 2017 and 2016 are as follows:

|  | Three Months Ended June 30, |  |  |  | Six Months Ended June 30, |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2017 |  | 2016 |  | 2017 |  | 2016 |  |
| Earnings per diluted share, as reported | \$ | 1.52 | \$ | 1.23 | \$ | 2.76 | \$ | 2.32 |
| Special items: |  |  |  |  |  |  |  |  |
| Integration-related, facilities closure and other costs |  | - |  | 0.02 |  | 0.01 |  | 0.04 |
| Acquisition-related costs |  | - |  | - |  | - |  | - |
| DeRidder mill incident |  | - |  | - |  | 0.03 |  | - |
| Hexacomb working capital adjustment |  | - |  | - |  | (0.01) |  | - |
| Total special items |  | - |  | 0.02 |  | 0.03 |  | 0.04 |
| Earnings per diluted share, excluding special items | \$ | 1.52 | \$ | 1.25 | \$ | 2.79 | \$ | 2.36 |

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 in Item 2 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 industry-wide corrugated products total shipments increased $2.4 \%$ during the second quarter of 2017, compared to the same quarter in 2016. Reported industry containerboard production increased $3.2 \%$ compared to the second quarter of 2016, and reported industry containerboard inventories at the end of the second quarter of 2017 were approximately 2.3 million tons, down $4.2 \%$ compared to the same period in 2016. Reported containerboard export shipments were up $6.6 \%$ compared to the second quarter of 2016. Published containerboard prices increased in April 2017 by $\$ 50$ per ton for linerboard and corrugating medium. In July 2017, trade publications reported a further increase of $\$ 20$ per ton for corrugating medium.

The market for communication papers competes heavily with electronic data transmission and document storage alternatives. Increasing shifts to these alternatives have reduced usage of, and lower demand for, traditional print media and communication papers. Trade publications reported that uncoated freesheet paper shipments were down $5.2 \%$ in the second quarter of 2017, compared to the same quarter in 2016. Average prices reported by a trade publication for cut size office papers were lower by $\$ 25$ per ton, or $2.6 \%$, in the second quarter of 2017, compared to the second quarter of 2016.

## Outlook

Looking ahead to the third quarter of 2017, we expect higher containerboard and corrugated products shipments resulting from strong demand and we expect to realize the substantial majority of our previously announced packaging segment price increases. White paper sales volumes should be seasonally higher, although price and mix are expected to move lower. We also anticipate continued price inflation in recycled fiber and certain chemicals, higher freight costs and a higher tax rate. Considering these items, we expect third quarter earnings, excluding special items, to be higher than second quarter earnings.

## Results of Operations

## Three Months Ended June 30, 2017, compared to Three Months Ended June 30, 2016

The historical results of operations of PCA for the three months ended June 30, 2017 and 2016 are set forth below (dollars in millions):

|  | Three Months Ended June 30, |  |  |  | Change |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2017 |  | 2016 |  |  |  |
| Packaging | \$ | 1,311.5 | \$ | 1,125.3 | \$ | 186.2 |
| Paper |  | 253.7 |  | 266.8 |  | (13.1) |
| Corporate and Other |  | 55.9 |  | 60.0 |  | (4.1) |
| Intersegment eliminations |  | (37.1) |  | (34.7) |  | (2.4) |
| Net sales | \$ | 1,584.0 | \$ | 1,417.4 | \$ | 166.6 |
|  |  |  |  |  |  |  |
| Packaging | \$ | 224.5 | \$ | 192.4 | \$ | 32.1 |
| Paper |  | 29.1 |  | 24.4 |  | 4.7 |
| Corporate and Other |  | (19.8) |  | (16.6) |  | (3.2) |
| Income from operations | \$ | 233.8 | \$ | 200.2 | \$ | 33.6 |
| Interest expense, net |  | (25.2) |  | (22.5) |  | (2.7) |
| Income before taxes |  | 208.6 |  | 177.7 |  | 30.9 |
| Income tax provision |  | (65.4) |  | (61.8) |  | (3.6) |
| Net income | \$ | 143.2 | \$ | 115.9 | \$ | 27.3 |
| Non-GAAP Measures (a) |  |  |  |  |  |  |
| Net income excluding special items | \$ | 143.6 | \$ | 117.7 | \$ | 25.9 |
| Consolidated EBITDA |  | 327.5 |  | 287.8 |  | 39.7 |
| Consolidated EBITDA excluding special items |  | 328.0 |  | 290.4 |  | 37.6 |
| Packaging EBITDA |  | 302.8 |  | 264.4 |  | 38.4 |
| Packaging EBITDA excluding special items |  | 303.3 |  | 266.7 |  | 36.6 |
| Paper EBITDA |  | 43.1 |  | 38.7 |  | 4.4 |
| Paper EBITDA excluding special items |  | 43.1 |  | 38.7 |  | 4.4 |

(a) See "Reconciliations of Non-GAAP Financial Measures to Reported Amounts" included in this Item 2 for a reconciliation of non-GAAP measures to the most comparable GAAP measure.

## Net Sales

Net sales increased $\$ 167$ million, or $11.8 \%$, to $\$ 1,584$ million during the three months ended June 30 , 2017, compared to $\$ 1,417$ million during the same period in 2016.

Packaging. Net sales increased $\$ 186$ million, or $16.5 \%$, to $\$ 1,312$ million, compared to $\$ 1,125$ million in the second quarter of 2016, due to increased containerboard and corrugated products volume ( $\$ 127$ million), including the addition of TimBar and Columbus Container, and higher domestic and export containerboard and corrugated products price and mix ( $\$ 59$ million). Our domestic containerboard prices in the second quarter of 2017 increased $13.9 \%$ and export prices increased $13.8 \%$, compared to the same period in 2016. In the second quarter of 2017, our containerboard outside shipments increased $3.6 \%$, and total corrugated products shipments were up $10.0 \%$, compared to the second quarter of 2016. Containerboard mill production in the second quarter of 2017 was 947,000 tons compared to 926,000 in 2016. Industry Containerboard prices reported by trade publications increased in April 2017 by $\$ 50$ per ton for linerboard and corrugating medium.

Paper. Net sales during the three months ended June 30, 2017 decreased $\$ 13$ million, or $4.9 \%$, to $\$ 254$ million, compared to $\$ 267$ million in the second quarter of 2016 , due to lower volume ( $\$ 12$ million) including the 2016 shutdown of our market pulp operations at our Wallula Mill and unfavorable changes in prices and mix ( $\$ 1$ million).

## Gross Profit

Gross profit increased $\$ 45$ million during the three months ended June 30, 2017, compared to the same period in 2016. The increase was driven primarily by higher containerboard and corrugated products prices and mix and sales and production volumes, and lower costs for annual mill outages, partially offset by higher energy, fiber, labor and freight costs, and lower Paper segment prices and mix.

## Selling, General, and Administrative Expenses

Selling, general, and administrative expenses increased $\$ 15$ million during the three months ended June 30 , 2017, compared to the same period in 2016. The increase was primarily due to higher administrative costs corresponding to the TimBar and Columbus Container acquisitions.

## Other Income (Expense), Net

Other income (expense), net, during the three months ended June 30, 2017 was $\$ 1$ million of expense, compared to $\$ 5$ million of expense during the three months ended June 30, 2016. The second quarter of 2017 included charges of $\$ 2$ million for asset disposals and write-offs and $\$ 0.5$ million of closure costs related to corrugated products facilities and integration costs related to the recent acquisitions, partially offset by $\$ 3$ million of property damage and business interruption insurance net recoveries related to the February 2017 incident at our DeRidder, Mill. The second quarter of 2016 included $\$ 1$ million of facilities closure costs, $\$ 1$ million of asset disposal costs, and $\$ 1$ million of costs related to our withdrawal from a multiemployer pension plan. We discuss these items in more detail in Note 4, Other Income (Expense), Net of the Condensed Notes to Unaudited Quarterly Consolidated Financial Statements in "Part I, Item1. Financial Statements" of this Form 10-Q.

## Income from Operations

Income from operations increased $\$ 34$ million, or $16.8 \%$, during the three months ended June 30 , 2017, compared to the same period in 2016. The second quarter of 2017 included $\$ 0.5$ million of expense from special items compared to $\$ 3$ million for the second quarter of 2016. The special items in the second quarter of 2017 includes closure costs related to corrugated products facilities and integration costs related to the recent acquisitions. Second quarter 2016 special items included $\$ 3$ million related to closing a corrugated manufacturing facility and a paper distribution center and costs related to our withdrawal from a multiemployer pension plan.

Packaging. Packaging segment income from operations increased $\$ 32$ million to $\$ 225$ million, compared to $\$ 192$ million during the three months ended June 30 , 2016. The increase in the second quarter of 2017 related primarily to favorable changes in containerboard and corrugated products prices and mix (\$36 million), higher containerboard and corrugated products sales and production volumes (\$19 million), and a partial insurance recovery related to the DeRidder Mill incident (\$3 million), partially offset by higher costs for fiber ( $\$ 10$ million), energy ( $\$ 4$ million), labor ( $\$ 4$ million), and freight ( $\$ 3$ million), and increased depreciation expense ( $\$ 3$ million). Special items during the second quarter of 2017 include expense of $\$ 0.5$ million which includes closure costs related to corrugated products facilities and integration costs related to the recent acquisitions. Special items for the second quarter 2016 includes expense of $\$ 2$ million related to closing a corrugated manufacturing facility and costs related to our withdrawal from a multiemployer pension plan.

Paper. Paper segment income from operations increased $\$ 5$ million to $\$ 29$ million, compared to $\$ 24$ million during the three months ended June 30 , 2016. The increase primarily related to lower costs for annual mill outages ( $\$ 9$ million), wood ( $\$ 3$ million), and labor ( $\$ 1$ million), partially offset by higher energy ( $\$ 5$ million) and chemical ( $\$ 2$ million) costs, and prices and mix ( $\$ 1$ million). There were no special items in the second quarters of 2017 or 2016, compared to expense of $\$ 0.3$ million for facility closure costs in the same period of 2016.

## Interest Expense, Net, and Income Taxes

Interest expense, net, increased $\$ 3$ million, during the three months ended June 30, 2017, compared to the same period in 2016. The increase in interest expense was primarily due to higher term loan borrowings for the TimBar acquisition and higher interest rates on PCA's variable rate debt in the second quarter of 2017.

During the three months ended June 30, 2017, we recorded $\$ 65$ million of income tax expense, compared to $\$ 62$ million of expense during the three months ended June 30, 2016. The effective tax rate for the three months ended June 30, 2017 and 2016 was $31.4 \%$ and $34.8 \%$, respectively. The decrease in our effective tax rate for the three months ended June 30, 2017 compared with the same period in 2016, was primarily due to the adoption of ASU 2016-09 (Topic 718): Improvements to Employee Share-Based Payment Accounting, which requires all excess tax benefits and deficiencies from employee share-based payment awards to be recognized in the income statement as opposed to additional paid in capital.

## Six Months Ended June 30, 2017, compared to Six Months Ended June 30, 2016

The historical results of operations of PCA for the six months ended June 30, 2017 and 2016 are set forth below (dollars in millions):

(a) See "Reconciliations of Non-GAAP Financial Measures to Reported Amounts" included in this Item 2 for a reconciliation of non-GAAP measures to the most comparable GAAP measure.

## Net Sales

Net sales increased $\$ 302$ million, or $10.7 \%$, to $\$ 3,121$ million during the six months ended June 30 , 2017, compared to $\$ 2,818$ million during the same period in 2016.

Packaging. Net sales increased $\$ 348$ million, or $15.7 \%$, to $\$ 2,568$ million, compared to $\$ 2,221$ million in the six months ended June 30, 2016, due to higher containerboard and corrugated products volumes ( $\$ 257$ million), including the addition of TimBar and Columbus Container, and higher domestic and export containerboard and corrugated products price and mix ( $\$ 90$ million). Our domestic containerboard prices in the first six months of 2017 increased $10.0 \%$ due to published price increases. Additionally, our export containerboard prices increased 7.5\%, compared to the same period in 2016. In the first six months of 2017, our containerboard outside shipments increased $4.1 \%$, and corrugated products shipments were up $10.3 \%$, compared to the first six months of 2016.

Paper. Net sales during the six months ended June 30, 2017 decreased $\$ 34$ million, or $6.3 \%$, to $\$ 513$ million, compared to $\$ 547$ million in the six months ended June 30, 2016. Sales decreased due to lower volumes (\$39 million), including the 2016 shutdown of our market pulp operations at our Wallula Mill, partially offset by increases in prices and mix ( $\$ 5$ million).

## Gross Profit

Gross profit increased $\$ 84$ million, or $13.6 \%$, during the six months ended June 30, 2017, compared to the same period in 2016. The increase was primarily due to higher containerboard and corrugated products prices and mix and sales and production volumes, and lower annual maintenance outage costs, partially offset by higher costs for energy, fiber, freight, and lower Paper segment sales and production volumes. In the first six months of 2017, gross profit included no special items, compared to $\$ 1$ million in the same period last year for facility closure costs.

## Selling, General, and Administrative Expenses

Selling, general, and administrative expenses increased $\$ 30$ million, or $12.9 \%$ during the six months ended June 30, 2017, compared to the same period in 2016. The increase was primarily due to higher administrative costs corresponding to the TimBar and Columbus Container acquisitions.

## Other Income (Expense), Net

Other expense, net, during the six months ended June 30, 2017 was $\$ 8$ million, compared to $\$ 9$ million during the six months ended June 30, 2016. The six months ended June 30, 2017 included charges of $\$ 5$ million for asset disposals and write-offs; $\$ 3$ million of costs for the property damage and business interruption insurance deductible, net of recoveries, related to the DeRidder Mill incident; $\$ 1$ million of charges consisting of closure costs related to corrugated products facilities, integration costs related to the recent acquisitions, and costs related to a lump sum settlement payment for a multiemployer pension plan withdrawal liability; and $\$ 2$ million of income related to a working capital adjustment from the April 2015 sale of our Hexacomb corrugated manufacturing operations in Europe and Mexico. The six months ended June 30 , 2016 included $\$ 5$ million of charges consisting of closure costs related to corrugated products facilities and a paper distribution facility, and acquisition-related costs for the TimBar Corporation and costs related to our withdrawal from a multiemployer pension plan, and $\$ 3$ million of asset disposal costs. We discuss these items in more detail in Note 4 , Other Income (Expense), Net of the Condensed Notes to Unaudited Quarterly Consolidated Financial Statements in "Part I, Item1. Financial Statements" of this Form 10-Q.

## Income from Operations

Income from operations increased $\$ 56$ million, or $14.7 \%$, during the six months ended June 30 , 2017, compared to the same period in 2016 . The first six months of 2017 included $\$ 4$ million of expense from special items, compared to $\$ 6$ million of expense from special items in the first six months of 2016 . The six months ended June 30 , 2017 included expense of $\$ 5$ million for the property damage and business interruption insurance deductible related to the DeRidder Mill incident; $\$ 1$ million of charges consisting of closure costs related to corrugated products facilities, integration costs related to the recent acquisitions, and costs related to a lump sum settlement payment for a multiemployer pension plan withdrawal liability; and $\$ 2$ million of income related to a working capital adjustment from the April 2015 sale of our Hexacomb corrugated manufacturing operations in Europe and Mexico. The six months ended June 30, 2016 included $\$ 6$ million of charges consisting of closure costs related to corrugated products facilities and a paper distribution facility, acquisition-related costs for the TimBar Corporation, and costs related to our withdrawal from a multiemployer pension plan.

Packaging. Packaging segment income from operations increased $\$ 61$ million to $\$ 415$ million, during the first six months of 2017 compared to the same period last year. The first six months of 2017 included higher containerboard and corrugated products prices and mix ( $\$ 59$ million), sales and production volumes ( $\$ 46$ million), and lower mill outage costs ( $\$ 3$ million), partially offset by higher fiber ( $\$ 19$ million), energy ( $\$ 9$ million), freight ( $\$ 6$ million), and labor ( $\$ 6$ million) costs, and higher depreciation expense ( $\$ 6$ million). Special items included $\$ 5$ million of expense for the property damage and business interruption insurance deductible related to the DeRidder Mill incident; $\$ 1$ million of charges consisting of closure costs related to corrugated products facilities, integration costs related to the recent acquisitions, and costs related to a lump sum settlement payment for a multiemployer pension plan withdrawal liability; and $\$ 2$ million of income related to a working capital adjustment from the April 2015 sale of our Hexacomb corrugated manufacturing operations in Europe and Mexico in the first six months of 2017. The six months ended June 30, 2016 included $\$ 4$ million of charges consisting of closure costs related to corrugated products facilities and our withdrawal from a multiemployer pension plan.

Paper. Paper segment income from operations decreased $\$ 2$ million to $\$ 59$ million, compared to the six months ended June 30, 2016. The decrease primarily relates to lower paper sales and production volumes (\$11 million) and higher costs for energy (\$9 million) and chemicals (\$2
million), partially offset by lower fiber ( $\$ 9$ million), annual mill outage ( $\$ 4$ million), and labor ( $\$ 1$ million) costs, and higher paper prices and mix ( $\$ 4$ million). There were no special items in the first six months of 2017, compared to expense of $\$ 1$ million for facility closure costs in the same period of 2016.

## Interest Expense, Net, and Income Taxes

Interest expense, net, was $\$ 49$ million during the six months ended June 30, 2017, compared to $\$ 44$ million during the six months ended June 30 , 2016. The increase in interest expense was primarily due to higher term loan borrowings for the TimBar acquisition and higher interest rates on PCA's variable rate debt during the six months ended June 30, 2017 compared to the same period in 2016.

During the six months ended June 30, 2017, we recorded $\$ 127$ million of income tax expense, compared to $\$ 117$ million of expense during the six months ended June 30, 2016. The effective tax rate for the six months ended June 30, 2017 and 2016 was $32.8 \%$ and $34.8 \%$, respectively. The decrease in our effective tax rate for the six months ended June 30, 2017 compared with the same period in 2016, was primarily due to the adoption of ASU 2016-09.

## 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. At June 30 , 2017 we had $\$ 321$ million of cash and $\$ 327$ 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), repurchases of common stock, and declared common stock dividends. 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):

|  | Six Months EndedJune 30, |  |  |  | Change |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2017 |  | 2016 |  |  |  |
| Net cash provided by (used for): |  |  |  |  |  |  |
| Operating activities | \$ | 385.6 | \$ | 376.2 | \$ | 9.4 |
| Investing activities |  | (140.9) |  | (127.7) |  | (13.2) |
| Financing activities |  | (163.0) |  | (219.1) |  | 56.1 |
| Net increase in cash and cash equivalents | \$ | 81.7 | \$ | 29.4 | \$ | 52.3 |

## Operating Activities

During the six months ended June 30, 2017, net cash provided by operating activities was $\$ 386$ million, compared to $\$ 376$ million in the same period in 2016, an increase of $\$ 10$ million. Cash from operations excluding changes in cash used for operating assets and liabilities increased $\$ 47$ million, primarily due to higher income from operations as discussed above. The remaining $\$ 37$ million decrease from changes in cash used for operating assets and liabilities was primarily due to the following: an increase in accounts receivable in the first six months of 2017, primarily related to higher sales volumes and prices in the Packaging segment and an increase in inventories in the Paper segment, partially offset by an increase in accounts payable, primarily related to timing of payments in the second quarter of 2017. 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

Net cash used for investing activities during the six months ended June 30, 2017 increased $\$ 13$ million, to $\$ 141$ million, compared to $\$ 128$ million during the same period in 2016. We spent $\$ 139$ million for capital investments during the six months ended June 30, 2017, compared to $\$ 122$ million during the same period in 2016.

We expect capital investments to be approximately $\$ 350$ million in 2017, excluding any acquisitions or other strategic activities. 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 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 "Part II, Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations" of our 2016 Annual Report on Form 10-K.

## Financing Activities

During the six months ended June 30, 2017, net cash used by financing activities decreased $\$ 56$ million to $\$ 163$ million, compared to $\$ 219$ million during the same period in 2016. The decrease primarily relates to less share repurchases, partially offset by an increase in debt repayments and a higher dividend payment. During the six months ended June 30, 2017 we did not repurchase any common stock, compared to $\$ 100$ million to repurchase $1,987,187$ shares of common stock in the same period in 2016. In the first six months of 2017, we made $\$ 34$ million of principal payments on long-term debt and capital leases, compared to $\$ 4$ million during the same period in 2016 . In the first six months of 2017, we paid $\$ 119$ million of dividends compared to $\$ 105$ million of dividends paid during the first six months of 2016.

For more information about our debt, see Note 9, Debt, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of our 2016 Annual Report on Form 10-K.

## Contractual Obligations

There have been no material changes to the contractual obligations table disclosed in Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations" of our 2016 Annual Report on 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 three and six months ended June 30 , 2017 and 2016 follow (dollars in millions):

|  | Three Months Ended June 30, |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2017 |  |  |  |  |  | 2016 |  |  |  |  |  |
|  | Income before Taxes |  | Income Taxes |  | Net Income |  | Income before Taxes |  | Income Taxes |  | Net Income |  |
| As reported in accordance with GAAP | \$ | 208.6 | \$ | (65.4) | \$ | 143.2 | \$ | 177.7 | \$ | (61.8) | \$ | 115.9 |
| Special items: |  |  |  |  |  |  |  |  |  |  |  |  |
| Integration-related, facilities closure and other costs (a) |  | 0.5 |  | (0.1) |  | 0.4 |  | 2.6 |  | (1.0) |  | 1.6 |
| Acquisition-related costs (b) |  | - |  | - |  | - |  | 0.3 |  | (0.1) |  | 0.2 |
| Total special items |  | 0.5 |  | (0.1) |  | 0.4 |  | 2.9 |  | (1.1) |  | 1.8 |
| Excluding special items | \$ | 209.1 | \$ | (65.5) | \$ | 143.6 | \$ | 180.6 | \$ | (62.9) | \$ | 117.7 |


|  | Six Months Ended June 30, |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2017 |  |  |  |  |  | 2016 |  |  |  |  |  |
|  | Income before Taxes |  | Income Taxes |  | Net Income |  | Income before Taxes |  | Income Taxes |  | Net Income |  |
| As reported in accordance with GAAP | \$ | 387.7 | \$ | (127.1) | \$ | 260.6 | \$ | 336.9 | \$ | (117.3) | \$ | 219.6 |
| Special items: |  |  |  |  |  |  |  |  |  |  |  |  |
| Integration-related, facilities closure and other costs (a) |  | 1.3 |  | (0.4) |  | 0.9 |  | 5.4 |  | (1.9) |  | 3.5 |
| Acquisition-related costs (b) |  | - |  | - |  | - |  | 0.3 |  | (0.1) |  | 0.2 |
| DeRidder mill incident (a) |  | 5.0 |  | (1.7) |  | 3.3 |  | - |  | - |  | - |
| Hexacomb working capital adjustment (a) |  | (2.3) |  | 0.8 |  | (1.5) |  | - |  | - |  | - |
| Total special items |  | 4.0 |  | (1.3) |  | 2.7 |  | 5.7 |  | (2.0) |  | 3.7 |
| Excluding special items | \$ | 391.7 | \$ | (128.4) | \$ | 263.3 | \$ | 342.6 | \$ | (119.3) | \$ | 223.3 |

(a) The three months ended June 30, 2017 include $\$ 0.5$ million of charges consisting of closure costs related to corrugated products facilities and integration costs related to the recent acquisitions.

The six months ended June 30, 2017 include the following:

1. $\$ 1.3$ million of charges consisting of closure costs related to corrugated products facilities, integration costs related to the recent acquisitions, and costs related to a lump sum settlement payment of a multiemployer pension plan withdrawal liability for one of our corrugated products facilities.
2. $\quad \$ 5.0$ million of costs for the property damage and business interruption insurance deductible corresponding to the February 2017 explosion at our DeRidder, LA mill.
3. $\quad \$ 2.3$ million of income related to a working capital adjustment from the April 2015 sale of our Hexacomb corrugated manufacturing operations in Europe and Mexico.
(b) The three and six months ended June 30, 2016 include $\$ 2.9$ million and $\$ 5.7$ million, respectively, of closure costs related to corrugated products facilities and a paper products facility, acquisition-related costs for the TimBar Corporation acquisition, and costs related to our withdrawal from a multiemployer pension plan for one of our corrugated products facilities.

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

|  | Three Months Ended June 30, |  |  |  | Six Months Ended June 30, |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2017 |  | 2016 |  | 2017 |  | 2016 |  |
| Net income | \$ | 143.2 | \$ | 115.9 | \$ | 260.6 | \$ | 219.6 |
| Interest expense, net |  | 25.2 |  | 22.5 |  | 49.2 |  | 44.1 |
| Income tax provision |  | 65.4 |  | 61.8 |  | 127.1 |  | 117.3 |
| Depreciation, amortization, and depletion |  | 93.7 |  | 87.6 |  | 186.2 |  | 176.3 |
| EBITDA | \$ | 327.5 | \$ | 287.8 | \$ | 623.1 | \$ | 557.3 |
| Special items: |  |  |  |  |  |  |  |  |
| Integration-related, facilities closure and other costs |  | 0.5 |  | 2.3 |  | 1.3 |  | 5.0 |
| Acquisition-related costs |  | - |  | 0.3 |  | - |  | 0.3 |
| DeRidder mill incident |  | - |  | - |  | 5.0 |  | - |
| Hexacomb working capital adjustment |  | - |  | - |  | (2.3) |  | - |
| Total special items |  | 0.5 |  | 2.6 |  | 4.0 |  | 5.3 |
| EBITDA excluding special items | \$ | 328.0 | \$ | 290.4 | \$ | 627.1 | \$ | 562.6 |

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

|  | Three Months Ended June 30, |  |  |  | Six Months Ended June 30, |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | 2017 |  | 2016 |  | 2017 |  | 2016 |  |
| Packaging |  |  |  |  |  |  |  |  |
| Segment income | \$ | 224.5 | \$ | 192.4 | \$ | 415.3 | \$ | 353.9 |
| Depreciation, amortization, and depletion |  | 78.3 |  | 72.0 |  | 155.5 |  | 145.3 |
| EBITDA |  | 302.8 |  | 264.4 |  | 570.8 |  | 499.2 |
| Integration-related, facilities closure and other costs |  | 0.5 |  | 2.3 |  | 1.3 |  | 4.2 |
| DeRidder mill incident |  | - |  | - |  | 5.0 |  | - |
| Hexacomb working capital adjustment |  | - |  | - |  | (1.6) |  | - |
| EBITDA excluding special items | \$ | 303.3 | \$ | 266.7 | \$ | 575.5 | \$ | 503.4 |
|  |  |  |  |  |  |  |  |  |
| Paper |  |  |  |  |  |  |  |  |
| Segment income | \$ | 29.1 | \$ | 24.4 | \$ | 58.9 | \$ | 60.5 |
| Depreciation, amortization, and depletion |  | 14.0 |  | 14.3 |  | 28.0 |  | 28.5 |
| EBITDA |  | 43.1 |  | 38.7 |  | 86.9 |  | 89.0 |
| Integration-related, facilities closure and other costs |  | - |  | - |  | - |  | 0.8 |
| EBITDA excluding special items | \$ | 43.1 | \$ | 38.7 | \$ | 86.9 | \$ | 89.8 |
|  |  |  |  |  |  |  |  |  |
| Corporate and Other |  |  |  |  |  |  |  |  |
| Segment loss | \$ | (19.8) | \$ | (16.6) | \$ | (37.3) | \$ | (33.4) |
| Depreciation, amortization, and depletion |  | 1.4 |  | 1.3 |  | 2.7 |  | 2.5 |
| EBITDA |  | (18.4) |  | (15.3) |  | (34.6) |  | (30.9) |
| Acquisition-related costs |  | - |  | 0.3 |  | - |  | 0.3 |
| Hexacomb working capital adjustment |  | - |  | - |  | (0.7) |  | - |
| EBITDA excluding special items | \$ | (18.4) | \$ | (15.0) | \$ | (35.3) | \$ | (30.6) |
|  |  |  |  |  |  |  |  |  |
| EBITDA | \$ | 327.5 | \$ | 287.8 | \$ | 623.1 | \$ | 557.3 |
|  |  |  |  |  |  |  |  |  |
| EBITDA excluding special items | \$ | 328.0 | \$ | 290.4 | \$ | 627.1 | \$ | 562.6 |

## Market Risk and Risk Management Policies

PCA is exposed to the impact of interest rate changes and changes in the market value of its financial instruments. We periodically enter into derivatives to minimize these risks, but not for trading purposes. We were not a party to any derivatives-based arrangements at June 30, 2017. 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 our 2016 Annual Report on Form 10-K.

The interest rates on approximately $63 \%$ 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 approximately $\$ 10$ million annually.

## Off-Balance-Sheet Activities

The Company does not have any off-balance sheet arrangements as of June 30, 2017.

## Environmental Matters

There have been no material changes to the disclosure set forth in Item 7. "Management's Discussion and Analysis of Financial Condition and Results of Operations Environmental Matters" filed with our 2016 Annual Report on Form 10-K.

## 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, pensions and other postretirement benefits, goodwill and intangible assets, long-lived asset impairment, environmental
liabilities and income taxes, 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.

PCA has included in its 2016 Annual Report on Form 10-K a discussion of its critical accounting policies and estimates which require management's most difficult, subjective, or complex judgments used in the preparation of its consolidated financial statements. PCA has not had any changes to these critical accounting estimates during the first six months of 2017.

## New and Recently Adopted Accounting Standards

For a listing of our new and recently adopted accounting standards, see Note 17, New and Recently Adopted Accounting Standards, of the Condensed Notes to Unaudited Quarterly Consolidated Financial Statements in "Part I, Item 1. Financial Statements" of this Form 10-Q.

## Forward-Looking Statements

Some of the statements in this Quarterly Report on Form 10-Q, and in particular, statements found in this 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 the following:

- the impact of general economic conditions;
- the impact of acquired businesses and risks and uncertainties regarding operation, expected benefits and integration of such businesses;
- containerboard, corrugated products, and white paper general industry conditions, including competition, product demand, product pricing, and input costs;
- fluctuations in wood fiber and recycled fiber costs;
- fluctuations in purchased energy costs;
- the possibility of unplanned outages or interruptions at our principal facilities;
- the timing and amount of insurance recoveries relating to the DeRidder incident; and
- legislative or regulatory actions or requirements, particularly concerning environmental or tax matters.

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 occur, what impact they will have on our results of operations or financial condition. Given these uncertainties, investors are cautioned not to place undue reliance on these forward-looking statements. We expressly disclaim any obligation to publicly revise any forward-looking statements that have been made to reflect the occurrence of events after the date hereof. For a discussion of other factors, risks and uncertainties that may affect our business, see Item 1A. Risk Factors included in our Annual Report on Form 10-K for the year ended December 31, 2016.

## Item 3. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

For a discussion of market risks related to PCA, see Part I, Item 2, "Management's Discussion and Analysis of Financial Condition and Results of Operations - Market Risk and Risk Management Policies" in this Quarterly Report on Form 10-Q.

## Item 4. 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 June 30, 2017. 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 June 30, 2017.

## 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 Container"). We are currently in the process of evaluating and integrating TimBar's and Columbus Container's 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. Except as may relate to the integration of the TimBar and Columbus Container 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 June 30, 2017 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

## PART II

OTHER INFORMATION

## Item 1. LEGAL PROCEEDINGS

The disclosure set forth under the caption "Legal Proceedings" in Note 18, Commitments, Guarantees, Indemnifications and Legal Proceedings, of the Condensed Notes to Unaudited Quarterly Consolidated Financial Statements in "Part I, Item 1. Financial Statements" of this Form 10-Q is incorporated herein by reference.

## Item 1A. RISK FACTORS

There have been no material changes to the risk factors disclosed in "Part I, Item 1A. Risk Factors" in our Annual Report on Form 10-K for the year ended December 31, 2016.

## Item 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

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 June 30, 2017:

| Issuer Purchases of Equity Securities |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Period | Total Number of Shares Purchased (a) |  |  | Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs |  | ate <br> lue <br> Yet <br> Yed <br> sed <br> Plans <br> ms) |
| April 1-30, 2017 | - | \$ | - | - | \$ | 193.0 |
| May 1-31, 2017 | 714 |  | 95.14 | - |  | 193.0 |
| June 1-30, 2017 | 90,320 |  | 111.08 | - |  | 193.0 |
| Total | 91,034 | \$ | 110.95 | - | \$ | 193.0 |

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

## Item 3. DEFAULTS UPON SENIOR SECURITIES

None.

## Item 4. MINE SAFETY DISCLOSURES

Not applicable.

## Item 5. OTHER INFORMATION

None.

## Item 6. EXHIBITS

## Exhibit

Number

## Description

Form of executive officer restricted stock award (June 21, 2017) $\dagger$
Form of executive officer performance unit award (June 21, 2017) $\dagger$
$10.2 \quad$ Form of executive officer performance unit award (June 21, 2017) $\dagger$
10.32017 Performance Based Equity Award Pool for Executive Officers (June 21, 2017) $\dagger$
$31.1 \quad$ Certification of Chief Executive Officer, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. $\dagger$
31.2 Certification of Chief Financial Officer, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. $\dagger$

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. $\dagger$

101 The following financial information from Packaging Corporation of America’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2017, formatted in XBRL (eXtensible Business Reporting Language): (i) Consolidated Statements of Income and Comprehensive Income for the three and six months ended June 30, 2017 and 2016, (ii) Consolidated Balance Sheets at June 30, 2017 and December 31, 2016, (iii) Consolidated Statements of Cash Flows for the six months ended June 30, 2017 and 2016, and (iv) the Condensed Notes to Unaudited Quarterly Consolidated Financial Statements. $\dagger$

[^1]
## SIGNATURES

Pursuant to the requirements of the Securities Exchange Act of 1934, the Registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

Packaging Corporation of America
/s/ Mark W. Kowlzan
Mark W. Kowlzan
Chairman and Chief Executive Officer
/s/ Robert P. Mundy
Robert P. Mundy
Senior Vice President and Chief Financial Officer

Packaging Corporation of America<br>Amended and Restated 1999 Long-Term Equity Incentive Plan<br>Executive Officer Restricted Stock Award Agreement

By this agreement, Packaging Corporation of America ("PCA" or the "Company") grants to you the following restricted shares of the Company's common stock, $\$ .01$ par value, subject to the terms and conditions set forth below, in the attached Plan Prospectus, and in the Amended and Restated 1999 Long-Term Equity Incentive Plan, as may from time to time be amended and/or restated (the "Plan"), all of which are an integral part of this Agreement. A copy of the Amended and Restated 1999 Long-Term Equity Incentive Plan may be obtained from the Company upon request. Capitalized terms used and not defined herein have the meanings given to them in the Plan.

Grant Date: June 21, 2017
Number of Restricted Shares Awarded :

## Fair Market Value at Grant:

## Restriction expires: June 21, 2021

The shares of restricted stock granted under the Plan will be held in escrow by the Company on the participant's behalf during any period of restriction and will bear an appropriate legend specifying the applicable restrictions thereon, and, if requested, the participant will be required to execute a blank stock power therefor. During the period of restriction the participant shall have all of the rights of a holder of Common Stock, including but not limited to the rights to receive dividends and to vote, and any stock or other securities received as a distribution with respect to such participant's restricted stock shall be subject to the same restrictions as then in effect for the restricted stock.

This award is subject to the "Performance-Based Award Pool for Executive Officers" provisions (the "Pool Provisions") adopted by the Section 162(m) Subcommittee of the Compensation Committee on June 21, 2017. If the number of shares of restricted stock available to be awarded to you under the Pool Provisions (as certified by the Compensation Committee or the Section 162(m) Subcommittee) is less than the number of restricted shares awarded hereby, then the excess number of shares (i.e. the number by which this award exceeds the number certified by the Compensation Committee or the Section 162(m) Subcommittee) will be forfeited at the time of such certification, and only the number certified by the Compensation Committee or the Section 162(m) Subcommittee will vest at the time the restrictions herein expire.

This award is further subject to the Company's compensation recovery policy in effect from time to time.
Except as otherwise provided by the Board of Directors:
(1) at such time as a Participant ceases to be a director, officer, or employee of, or to otherwise perform services for, the Company and its Subsidiaries due to death or

Disability, during any period of restriction, all restrictions on the shares granted to the Participant shall lapse;
(2) at such time as a Participant ceases to be, or in the event a participant does not become, a director, officer, or employee of, or otherwise perform services for, the Company or its Subsidiaries for any other reason, all shares of restricted stock granted to such Participant on which the restrictions have not lapsed shall be immediately forfeited to the Company.

If a Change in Control occurs prior to the fourth anniversary of the Date of Grant, then all restrictions on the shares granted to the Participant will lapse on the date of such Change in Control. Notwithstanding the foregoing, the restrictions will not lapse upon a Change in Control if an award meeting the following requirements (the "Replacement Award") is provided in substitution hereof:
(i) it relates to equity securities of the Company or its successor following the Change in Control or another entity that is affiliated with the Company or its successor following the Change in Control and such equity securities are publicly traded and registered under the Securities Exchange Act of 1934;
(ii) it has a value at least equal to the value of this award as of the date of the Change in Control as determined by the Committee;
(iii) it does not contain any performance goals and vesting is subject only to continued service with the Company or its successor following the Change in Control through the fourth anniversary of the original Grant Date. If a Change of Control occurs prior to certification of the number of shares available for this award pursuant to the Pool Provisions, then the Pool Provisions shall not be applicable and this award shall cover the full number of shares identified on the first page hereof.
(iv) its forfeiture provisions, transfer restrictions and any other restrictions lapse upon the fourth anniversary of the original Date of Grant; provided, however, that such restrictions will lapse, and the shares will fully vest, if within two years after the date of the Change in Control, the Participant's employment is terminated by the Company without Cause or the Participant resigns for Good Reason; and
(v) the terms and conditions of the Replacement Award with respect to dividends and a subsequent change in control are not less favorable to the Participant than the terms and conditions of this award.

Without limiting the generality of the foregoing, the Replacement Award may take the form of a continuation of this award or such other form approved by the Committee provided that the preceding requirements of this subsection are satisfied. The determination of whether the requirements are satisfied shall be made by the Committee, as constituted immediately prior to the Change in Control, in its sole discretion. In the event of a Change in Control, Participant agrees to accept a Replacement Award meeting the above conditions in substitution of this award.
"Good Reason" means: (i) a change in the Participant’s job title or position, which results in a material diminution in authority, duties or responsibilities; (ii) any material breach of this agreement by the Company of any material obligation of the Company for the payment or provision of compensation or other benefits to the Participant; (iii) a material diminution in Participant's compensation or a failure by the Company to provide an arrangement for the Participant for any fiscal year of the Company giving the Participant the opportunity to earn an incentive award for such year; or (iv) the Company requires Participant to materially change the location of Participant's principal office; provided such new location is one in excess of 35 miles from the location of Participant's principal office before such change.

Please indicate your acceptance of this Agreement by signing in the space provided below and returning this page to Halane Young, Executive Director, Total Rewards \& HRIS, located in Lake Forest.

## Packaging Corporation of America

By:

## Accepted and Agreed:

Title:

Date:

# PACKAGING CORPORATION OF AMERICA <br> AMENDED AND RESTATED 1999 LONG-TERM EQUITY INCENTIVE PLAN <br> PERFORMANCE UNIT AGREEMENT 

| PARTICIPANT: |  |
| :--- | :--- |
| DATE OF GRANT: | June 21, 2017 |
| NUMBER OF PERFORMANCE UNITS: |  |
| PERFORMANCE PERIOD: | 2018-2020 |
| VESTING DATE | June 21, 2021 |

This Agreement is entered into between Packaging Corporation of America., a Delaware corporation (the "Company"), and the Participant named above. In consideration of the mutual covenants hereinafter set forth and for other good and valuable consideration, the Company and the Participant hereby agree as follows:

1. Grant of Performance Units. Subject to the restrictions, terms and conditions of this Agreement and the Plan Documents (as hereafter defined), the Company hereby awards to the Participant the number of performance units stated above (the "Performance Units").
2. Governing Documents. This Agreement and the Performance Units awarded hereby are subject to all the restrictions, terms and provisions of the Amended and Restated 1999 Long-Term Equity Incentive Plan (the "Plan") and the 2017 Performance-Based Equity Award Pool for Executive Officers (the "Award Pool") adopted by the Section 162(m) Subcommittee of the Compensation Committee on June 21, 2017 (together with the Plan, the "Plan Documents") which are herein incorporated by reference and to the terms of which the Participant hereby agrees. Capitalized terms used in this Agreement that are not defined herein shall have the meaning set forth in the Plan Documents.
3. No Stockholder Rights. The Performance Units will be a book entry credited in the name of the Participant representing a Full Value Award under the Plan and are not actual Shares. The Participant will not have the right to vote the Performance Units.
4. Vesting. Except as otherwise provided in the Plan Documents and subject to paragraphs 6 and 8 hereof, all of the Participant's Performance Units covered hereby shall (to the extent not previously forfeited) vest as of the occurrence of a Vesting Date (as defined on Exhibits A and B). The terms and conditions of vesting shall be as provided on Exhibit A and Exhibit B, which are separate and independent from each other, with the amount of Shares being paid out on vesting to equal the sum of: (i) the number of Shares vesting pursuant to Exhibit A; and (ii) the number of Shares vesting pursuant to Exhibit B. Payout on any vesting shall be in the form of Shares. of Directors, upon the Participant's cessation of employment (or provision of other services as permitted under the Plan Documents) prior to a Vesting Date for any reason, all Performance Units granted hereunder shall be forfeited.
5. Recovery of Unearned Compensation. The Performance Units are subject to the Company's compensation recovery policy as shall be in effect from time to time.
6. Dividend Equivalents. Dividend equivalents are hereby granted on the Performance Units, which shall accrue to the extent that dividends are declared on the Shares of the Company's common stock. Accrued dividend equivalents shall be paid out on the Vesting Date in Shares equal in value to the amount of dividends declared between the date of award and the Vesting Date on the number of Shares actually paid out pursuant to these Performance Units on such Vesting Date pursuant to Exhibits A and B (howsoever such vesting occurs).

Pool Provisions. This award is subject to the Award Pool. The number of Shares to be awarded on any Vesting Date may in no event exceed the number of Shares to which Participant is entitled under the Award Pool for this Award as 8. certified by the Committee in accordance with the Award Pool (the "Certified Share Amount"). In the event the number of Performance Units awarded hereby exceeds the Certified Share Amount, then such excess will be forfeited as of the date of such certification.

Miscellaneous. The Committee may from time to time modify or amend this Agreement in accordance with the provisions of the Plan Documents. This Agreement shall be binding upon and inure to the benefit of the Company and its successors and assigns and shall be binding upon and inure to the benefit of the Participant and his or her legatees, 9. distributees and personal representatives. By signing this Agreement, the Participant acknowledges and expressly agrees that the Participant has read the Agreement and the Plan Documents and agrees to their terms. This Agreement may be executed by the Company and the Participant by means of electronic or digital signatures, which shall have the same force and effect as manual signatures. This Agreement shall be governed by and construed in accordance with the laws of the State of Delaware.
10. Section 409A Compliance. It is the intention that this Agreement conform and be administered in all respects in a manner that complies with Section 409A of the Code; provided, however, that the Company does not make any representations or guarantees of the tax treatment of the award under Section 409A or otherwise.

Notwithstanding any provision contained in this Agreement to the contrary, if (i) any payment hereunder is subject to Section 409A of the Code, (ii) such payment is to be paid on account of the Participant's separation from service (within the meaning of Section 409A of the Code) and (iii) the Participant is a "specified employee" (within the meaning of Section 409A(a)(2)(B) of the Code), then such payment shall be delayed, if necessary, until the first day of the seventh month following the Participant's separation from service (or, if later, the date on which such payment is otherwise to be paid under this Agreement). With respect to any payments hereunder that are subject to Section 409A of the Code and that are payable on account of a separation from service, the determination of whether the Recipient has had a separation from service shall be determined in accordance with Section 409A of the Code.

IN WITNESS WHEREOF, the Company has caused this Agreement to be duly executed by its officer thereunto duly authorized, and the Participant has hereunto set his or her hand, all as of the Date of Grant written above.

PACKAGING CORPORATION OF AMERICA

BY:

## Exhibit A

## Vesting Provision-Formula Component

1. Vesting Date. Vesting Date means, with respect to the vesting of Performance Units pursuant to this Exhibit A, the fourth anniversary of the Date of Grant, with the amount of Shares to be paid out to be determined pursuant to paragraph 2 below. Notwithstanding the foregoing: (a) in the event of the Participant's death or termination on account of Disability, the Vesting Date and amount of Shares to be paid out will be determined pursuant to paragraph 3 below: and (b) in the event of a Change in Control, the Vesting Date and amount of Shares to be paid out will be determined pursuant to paragraph 4 below. Dividend equivalents shall be paid on all Shares paid out upon vesting pursuant to Section 7 of the Performance Unit Agreement.
2. ROIC Peer Group Rank: In determining the actual number of Shares to be paid out pursuant to this Exhibit A on the Vesting Date, the Committee will determine the Company's average ROIC (as hereinafter defined) over the three years comprising the Performance Period (i.e., the arithmetic mean of ROICs for the three individual years) and compare such number against the average ROIC for the companies included in the Peer Group (as hereinafter defined). Based on the ranking of the Company’s ROIC with the Peer Group, Shares equal to the Applicable Percentage of the number of Performance Units will be paid out as follows:

Peer Group Ranking
Top quartile

Applicable Percentage
100\%

Second quartile 80\%
Third quartile 40\%

Fourth quartile $0 \%$

The "Peer Group" will include Aptargroup, Bemis, Berry Plastics, Cascades, Clearwater Paper, Crown Holdings, Domtar, Glatfelter, Graphic Packaging, Grief, International Paper, KapStone, Owens Illinois, Resolute Forest Products, Sealed Air, Silgan, Sonoco and Westrock. The Committee may modify the Peer Group for significant or extraordinary events outside the ordinary course of business, such as mergers or acquisitions, recapitalizations, bankruptcy or other events in which a Peer Group company ceases reporting financial results to the public.
"ROIC" means return on invested capital, which is calculated by dividing (a) operating profit by (b) average invested capital over the applicable period. In calculating ROIC for the Company or a Peer Group company, the Committee may adjust for reported special, non-recurring or non-operating items or the effects of mergers, acquisitions or extraordinary transactions. The Committee may establish rules for calculating ROIC for purposes of ensuring consistency in calculations across the Company and the Peer Group.
3. Vesting Upon Death or Disability. The Performance Units shall vest in the event of the Participant's death or termination on account of Disability prior to the fourth anniversary of the date of the Date of Grant. In such case, the Vesting Date shall be the date of death or termination, as the case may be; and the number of Shares to be paid out to such Participant shall equal $100 \%$ of the number of Performance Units.
4. Vesting Upon Change in Control. Upon a Change in Control prior to the fourth anniversary of the Date of Grant, the Performance Units will vest, with the Vesting Date being the date of such Change in Control. In such case, the number of Shares to be paid out will equal $100 \%$ of the number of Performance Units. Notwithstanding the foregoing, the Performance Units will not vest and will not be paid out upon a Change in Control if an award meeting the following requirements (the "Replacement Award") is provided in substitution hereof:
(i) it relates to equity securities of the Company or its successor following the Change in Control or another entity that is affiliated with the Company or its successor following the Change in Control and such equity securities are publicly traded and registered under the Securities Exchange Act of 1934;
(ii) it has a value at least equal to the value of this award as of the date of the Change in Control as determined by the Committee, assuming payout at $100 \%$ of the number of Performance Units on the date of the Change in Control;
(iii) it does not contain any performance goals and will be paid out at $100 \%$ of the number of Performance Units awarded (without regard to paragraph 2 above) subject only to continued service with the Company or its successor following the Change in Control through the fourth anniversary of the original Date of Grant. If a Change of Control occurs prior to certification of the number of shares available for this award pursuant to Section 8 of the Performance Unit Agreement, then the Pool Provisions shall not be applicable and this award shall cover the full number of Performance Units on the first page hereof.
(iv) its forfeiture provisions, transfer restrictions and any other restrictions lapse upon the fourth anniversary of the original Date of Grant; provided, however, that such restrictions will lapse, and the award will fully vest and be paid out at $100 \%$ of the number of Performance Units, if within two years after the date of the Change in Control, the Participant's employment is terminated by the Company without Cause or the Participant resigns for Good Reason; and
(v) its other terms and conditions relating to the service condition, dividend equivalents and a subsequent change in control are not less favorable to the Participant than the terms and conditions of this award.

Without limiting the generality of the foregoing, the Replacement Award may take the form of a continuation of this award or such other form approved by the Committee provided that the preceding requirements of this subsection are satisfied. The determination of whether the requirements are satisfied shall be made by the Committee, as constituted immediately prior to the Change in Control, in its sole discretion. In the event of a Change in Control, Participant
agrees to accept a Replacement Award meeting the above conditions in substitution of this award.
"Good Reason" means: (i) a change in the Participant’s job title or position, which results in a material diminution in authority, duties or responsibilities; (ii) any material breach of this agreement by the Company of any material obligation of the Company for the payment or provision of compensation or other benefits to the Participant; (iii) a material diminution in Participant's compensation or a failure by the Company to provide an arrangement for the Participant for any fiscal year of the Company giving the Participant the opportunity to earn an incentive award for such year; or (iv) the Company requires Participant to materially change the location of Participant's principal office; provided such new location is one in excess of 35 miles from the location of Participant's principal office before such change.

## Exhibit B

## Vesting Provision-Committee Determination Component

1. Vesting Date. Vesting Date means, with respect any vesting of Performance Units pursuant to this Exhibit B, the fourth anniversary of the Date of Grant, and in such case only if the number of Shares to be paid out under Exhibit A is determined pursuant to paragraph 2 of Exhibit A. No vesting shall occur or Shares paid out pursuant to this Exhibit B if vesting pursuant to Exhibit A occurs as a result of the Participant's death or termination due to Disability; or if a Change in Control occurs prior to the fourth anniversary of the Date of Grant. Dividend equivalents shall be paid on all Shares paid out upon vesting pursuant to Section 7 of the Performance Unit Agreement.
2. Committee Determination. The Committee shall have the right to determine, on or around the Vesting Date, to pay out a number of Shares vested pursuant to this Exhibit B. The number of Shares that the Committee may pay out on vesting pursuant to this Exhibit B will depend upon the Company's ranking on average ROIC against the Peer Group (as determined pursuant to Exhibit A). The Committee is not obligated to award any Shares pursuant to this Exhibit B. The maximum number of Shares that may be paid out pursuant to vesting under this Exhibit B are as follows:

Peer Group Ranking
Top quartile

Second quartile
Third quartile
Fourth quartile

## Applicable Percentage

Up to 20\% of the Performance Units

Up to 20\% of the Performance Units
Up to $40 \%$ of the Performance Units
No Performance Units may be vested under this Exhibit B

The Committee shall determine whether to pay out any Shares and the amount of Shares to be paid out. In making such determination, the Committee may consider the level of ROIC performance within the quartile, the business conditions relating to the Company’s and the Peer Group companies' performance during the Performance Period and such other factors that the Committee determines to be appropriate for purposes of assessing performance over the Performance Period.

## Packaging Corporation of America

## 2017 Performance-Based Equity Award Pool for Executive Officers

## Adopted June 21, 2017

1. Purpose. The Committee intends to grant the Full Value Awards described herein (the "Awards") to the executive officers of Packaging Corporation of America (the "Company") named herein (the "Participants") pursuant to the Company's Amended and Restated 1999 Long-Term Equity Incentive Plan (the "Plan") on or around the date hereof. The Section 162(m) Subcommittee desires to designate such Awards as Performance-Based Compensation and hereby adopts an award pool (the "Award Pool") of Shares available for such Awards subject to the Performance Criterion and other terms and conditions provided herein. Capitalized terms not otherwise defined herein shall have the meanings given to them in the Plan.
2. Performance Criterion. The Company's Earnings before Interest, Taxes, Depreciation and Amortization ("EBITDA") shall be established as the Performance Criterion for the Award Pool.
3. Award Pool Shares. The aggregate amount of Shares (the "Award Pool Shares") available for award to all Participants in the Award Pool shall be the number equal to (i) $2.0 \%$ of the Corporation's EBITDA for the period beginning April 1, 2017 and ending March 31, 2018 (the "EBITDA Performance Period"); divided by (ii) the closing price of a Share on the New York Stock Exchange on the date hereof.
4. Awards. Awards shall be in the form of "Restricted Stock Awards" (pursuant to the Restricted Stock Award Agreements attached hereto as Exhibit A) and "Performance Unit Awards" (pursuant to the Performance Unit Agreement attached hereto as Exhibit B).
5. Participant Percentages and Maximums. The percentage of Award Pool Shares (the "Award Pool Percentage") and the maximum number of Award Pool Shares (the "Participant Maximum") available to be awarded to each Participant for each Award, shall be as set forth in the following table. For each Participant, half of his percentage of Award Pool shares is allocated to each type of Award.

| Participant | Percentage of Award Pool <br> Shares | Maximum for Restricted <br> Stock Awards (in shares) | Maximum for <br> Performance Units (in <br> shares)*1 |
| :--- | :--- | ---: | :--- | ---: |
| Mark W. Kowlzan | $40 \%$ | 23,096 | 27,715 |
| Thomas A. Hassfurther | $25 \%$ | 14,809 | 17,771 |
| Robert P. Mundy | $10 \%$ | 4,596 | 5,515 |
| Charles J. Carter | $12.5 \%$ | 4,775 | 5,730 |

[^2]6. Certification of Award Pool. The Committee (or the Section 162(m) Subcommittee) shall certify the number of Award Pool Shares available for each Participant for each Award (the "Certified Share Number") within 75 days after the end of the EBITDA Performance Period, which shall be calculated by (a) multiplying (i) the Award Pool Percentage for such Participant for such Award by (ii) the aggregate number of Award Pool Shares and (b) if applicable, reducing the number calculated pursuant to subsection (a) to the Participant Maximum for such Award.
7. Award Agreement. The Committee (or the Section 162(m) Subcommittee) will reduce (but not increase) the actual number of Shares to be awarded to a Participant on vesting of an Award from the Certified Share Number for such Award to the extent necessary to achieve the level of vesting provided in the Award agreements attached hereto.
8. Plan Provisions. The Award Pool and Awards described herein are subject to, and made pursuant to, the terms and conditions of the Plan. If there is any inconsistency between the terms of the Award Pool or any Award agreement and the terms of the Plan, the terms of the Plan shall control unless expressly stated that an exception to the Plan is being made.

## CEO CERTIFICATION PURSUANT TO SECTION 302

## OF THE SARBANES-OXLEY ACT OF 2002

I, Mark W. Kowlzan, certify that:
(1) I have reviewed this quarterly report on Form 10-Q of Packaging Corporation of America (PCA);
(2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
(3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of PCA as of, and for, the periods presented in this 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 and Chief Executive Officer

Date: August 4, 2017

## CFO CERTIFICATION PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Robert P. Mundy, certify that:
(1) I have reviewed this quarterly report on Form 10-Q of Packaging Corporation of America (PCA);
(2) Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
(3) Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of PCA as of, and for, the periods presented in this 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: August 4, 2017

## CERTIFICATIONS OF CHIEF EXECUTIVE OFFICER AND <br> CHIEF FINANCIAL OFFICER <br> PURSUANT TO 18 U.S.C. §1350, <br> AS ADOPTED PURSUANT TO <br> SECTION 906 OF THE SARBANES-OXLEY ACT OF 2002

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 Quarterly Report of the Company on Form 10-Q for the period ended June 30, 2017 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 and Chief Executive Officer

Date: August 4, 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 Quarterly Report of the Company on Form 10-Q for the period ended June 30, 2017 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


[^0]:    (a) The three months ended June 30, 2017 include $\$ 0.5$ million of charges consisting of closure costs related to corrugated products facilities and integration costs related to the recent acquisitions.

[^1]:    $\dagger \quad$ Filed herewith.

[^2]:    1 In all cases, PLUS the number of dividend equivalents provided in the Performance Unit Agreement

