UNITED STATES
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, 2019

or

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

For the transition period from_____to_____

Commission file number 1-15399

PACKAGING CORPORATION OF AMERICA

(Exact Name of Registrant as Specified in its Charter)

Delaware	**36-4277050**
(State or Other Jurisdiction of Incorporation or Organization)	*(I.R.S. Employer Identification No.)*
1 North Field Court, Lake Forest, Illinois	**60045**
(Address of Principal 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 ☒ No ☐

Indicate by check mark whether the registrant has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

Large accelerated filer	☒	Accelerated filer	☐	Emerging growth company	☐
Non-accelerated filer	☐	Smaller reporting 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 ☐ No ☒

As of July 26, 2019 the Registrant had outstanding 94,662,821 shares of common stock, par value $0.01 per share.

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

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common Stock, par value $0.01 per share	PKG	New York Stock Exchange

Table of Contents

PART I

PART II

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 June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Statements of Income:				
Net sales	$ 1,759.9	$ 1,767.5	$ 3,493.6	$ 3,458.1
Cost of sales	(1,332.0)	(1,346.9)	(2,644.3)	(2,681.4)
Gross profit	427.9	420.6	849.3	776.7
Selling, general and administrative expenses	(143.7)	(137.7)	(283.7)	(272.6)
Other expense, net	(3.8)	(13.3)	(9.8)	(21.6)
Income from operations	280.4	269.6	555.8	482.5
Non-operating pension expense	(2.0)	(0.5)	(4.1)	(1.1)
Interest expense, net	(22.4)	(23.8)	(46.4)	(49.6)
Income before taxes	256.0	245.3	505.3	431.8
Provision for income taxes	(62.4)	(58.7)	(124.9)	(105.1)
Net income	$ 193.6	$ 186.6	$ 380.4	$ 326.7
Net income per common share:				
Basic	$ 2.05	$ 1.98	$ 4.03	$ 3.46
Diluted	$ 2.04	$ 1.97	$ 4.02	$ 3.46
Dividends declared per common share	$ 0.79	$ 0.79	$ 1.58	$ 1.42
Statements of Comprehensive Income:				
Net income	$ 193.6	$ 186.6	$ 380.4	$ 326.7
Other comprehensive income, net of tax:				
Foreign currency translation adjustment	—	—	—	(0.1)
Reclassification adjustments to cash flow hedges included in net income, net of tax of $0.3 million, $0.3 million, $0.7 million, and $0.7 million	1.0	1.0	1.9	2.0
Amortization of pension and postretirement plans actuarial loss and prior service cost, net of tax of $0.8 million, $1.0 million, $1.6 million, and $1.9 million	2.3	3.0	4.7	6.0
Other comprehensive income	3.3	4.0	6.6	7.9
Comprehensive income	$ 196.9	$ 190.6	$ 387.0	$ 334.6

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, 2019	December 31, 2018
ASSETS		
Current assets:		
Cash and cash equivalents	$ 569.4	$ 361.5
Accounts receivable, net of allowance for doubtful accounts and customer deductions of $12.8 million and $13.6 million as of June 30, 2019, and December 31, 2018, respectively	947.0	901.9
Inventories	815.7	795.6
Prepaid expenses and other current assets	59.2	39.4
Federal and state income taxes receivable	11.4	16.7
Total current assets	2,402.7	2,115.1
Property, plant, and equipment, net	3,107.2	3,108.6
Operating lease right-of-use assets	238.0	—
Goodwill	918.7	917.3
Other intangible assets, net	358.2	378.2
Other long-term assets	49.6	50.5
Total assets	$ 7,074.4	$ 6,569.7
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Finance lease obligations	$ 1.5	$ 1.4
Operating lease obligations	59.9	—
Accounts payable	382.8	382.2
Dividends payable	75.9	76.1
Accrued liabilities	197.9	222.4
Accrued interest	11.6	11.5
Total current liabilities	729.6	693.6
Long-term liabilities:		
Long-term debt	2,485.4	2,483.7
Finance lease obligations	16.8	17.6
Operating lease obligations	183.4	—
Deferred income taxes	314.8	285.2
Compensation and benefits	364.9	357.5
Other long-term liabilities	58.3	59.7
Total long-term liabilities	3,423.6	3,203.7
Commitments and contingent liabilities		
Stockholders' equity:		
Common stock, par value $0.01 per share, 300.0 million shares authorized, 94.7 and 94.5 million shares issued as of June 30, 2019, and December 31, 2018, respectively	0.9	0.9
Additional paid in capital	513.3	494.5
Retained earnings	2,539.2	2,315.8
Accumulated other comprehensive loss	(132.2)	(138.8)
Total stockholders' equity	2,921.2	2,672.4
Total liabilities and stockholders' equity	$ 7,074.4	$ 6,569.7

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,	
	2019	**2018**
Cash Flows from Operating Activities:		
Net income	$ 380.4	$ 326.7
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation, depletion, and amortization of intangibles	190.7	212.2
Amortization of deferred financing costs	4.3	4.4
Share-based compensation expense	18.6	10.7
Deferred income tax provision	26.9	30.1
Loss on asset disposals	1.9	3.3
Pension and post-retirement benefits expense, net of contributions	11.3	9.0
Other, net	8.7	0.5
Changes in operating assets and liabilities:		
Increase in assets —		
Accounts receivable	(44.9)	(82.7)
Inventories	(20.1)	(5.7)
Prepaid expenses and other current assets	(21.2)	(19.2)
Increase (decrease) in liabilities —		
Accounts payable	(1.8)	11.0
Accrued liabilities	(22.3)	(19.7)
Federal and state income taxes payable / receivable	5.9	52.9
Net cash provided by operating activities	538.4	533.5
Cash Flows from Investing Activities:		
Additions to property, plant, and equipment	(170.9)	(273.9)
Additions to other long term assets	(1.8)	(2.7)
Proceeds from disposals	1.2	0.5
Other, net	(1.3)	2.6
Net cash used for investing activities	(172.8)	(273.5)
Cash Flows from Financing Activities:		
Repayments of debt and finance lease obligations	(0.7)	(150.7)
Common stock dividends paid	(149.3)	(118.9)
Shares withheld to cover employee restricted stock taxes	(7.7)	(7.7)
Net cash used for financing activities	(157.7)	(277.3)
Net increase (decrease) in cash and cash equivalents	207.9	(17.3)
Cash and cash equivalents, beginning of period	361.5	216.9
Cash and cash equivalents, end of period	$ 569.4	$ 199.6

See accompanying condensed notes to unaudited quarterly consolidated financial statements.

Packaging Corporation of America

Consolidated Statements of Changes in Stockholders' Equity
(unaudited, dollars in millions and shares in thousands)

	Common Stock		Additional Paid in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount				
Balance at April 1, 2019	94,494	$ 0.9	$ 501.4	$ 2,427.8	$ (135.5)	$ 2,794.6
Common stock withheld and retired to cover taxes on vested stock awards	(83)	—	(0.6)	(7.1)	—	(7.7)
Common stock dividends declared	—	—	—	(74.9)	—	(74.9)
Share-based compensation	255	—	12.5	—	—	12.5
Other	—	—	—	(0.2)	—	(0.2)
Comprehensive income	—	—	—	193.6	3.3	196.9
Balance at June 30, 2019	94,666	$ 0.9	$ 513.3	$ 2,539.2	$ (132.2)	$ 2,921.2

	Common Stock		Additional Paid in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount				
Balance at April 1, 2018	94,348	$ 0.9	$ 476.3	$ 1,949.6	$ (153.0)	$ 2,273.8
Common stock withheld and retired to cover taxes on vested stock awards	(67)	—	(0.4)	(7.2)	—	(7.6)
Common stock dividends declared	—	—	—	(74.8)	—	(74.8)
Share-based compensation	219	—	6.0	—	—	6.0
Other	—	—	0.2	(0.2)	—	—
Comprehensive income	—	—	—	186.6	4.0	190.6
Balance at June 30, 2018	94,500	$ 0.9	$ 482.1	$ 2,054.0	$ (149.0)	$ 2,388.0

	Common Stock		Additional Paid in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount				
Balance at January 1, 2019	94,497	$ 0.9	$ 494.5	$ 2,315.8	$ (138.8)	$ 2,672.4
Common stock withheld and retired to cover taxes on vested stock awards	(83)	—	(0.6)	(7.1)	—	(7.7)
Common stock dividends declared	—	—	—	(149.7)	—	(149.7)
Share-based compensation	252	—	19.4	—	—	19.4
Other	—	—	—	(0.2)	—	(0.2)
Comprehensive income	—	—	—	380.4	6.6	387.0
Balance at June 30, 2019	94,666	$ 0.9	$ 513.3	$ 2,539.2	$ (132.2)	$ 2,921.2

	Common Stock		Additional Paid in Capital	Retained Earnings	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	Shares	Amount				
Balance at January 1, 2018	94,350	$ 0.9	$ 471.2	$ 1,867.4	$ (156.9)	$ 2,182.6
Common stock withheld and retired to cover taxes on vested stock awards	(67)	—	(0.4)	(7.3)	—	(7.7)
Common stock dividends declared	—	—	—	(134.2)	—	(134.2)
Adoption of ASC 606	—	—	—	1.6	—	1.6
Share-based compensation	217	—	11.1	—	—	11.1
Other	—	—	0.2	(0.2)	—	—
Comprehensive income	—	—	—	326.7	7.9	334.6
Balance at June 30, 2018	94,500	$ 0.9	$ 482.1	$ 2,054.0	$ (149.0)	$ 2,388.0

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 containerboard and corrugated packaging products. The Paper segment manufactures and sells a range of communication-based 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 19, 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 June 30, 2019 and for the three and six months ended June 30, 2019 and 2018 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 notes 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, 2019 are not necessarily indicative of the results that may be expected for the year ending December 31, 2019. These consolidated financial statements should be read in conjunction with our Annual Report on Form 10-K for the year ended December 31, 2018.

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

2. New and Recently Adopted Accounting Standards

Recently Adopted Accounting Standards

Effective January 1, 2019, the Company adopted the Financial Accounting Standards Board (“FASB”) Accounting Standards Update (“ASU”) 2016-02 (Topic 842): *Leases*, which requires the recognition of lease assets and lease liabilities by lessees for those leases classified as operating leases under previous guidance. The original guidance required application on a modified retrospective basis with the earliest period presented. In July 2018, the FASB issued ASU 2018-11, *Targeted Improvements to ASC 842*, which included an option to not restate comparative periods in transition and elect to use the effective date of ASC 842, *Leases*, as the date of initial application of transition, which we elected. As a result of the adoption of ASC 842 on January 1, 2019, we recorded operating lease liabilities of $228 million, with corresponding right of use (“ROU”) assets of the same amount. In addition, we elected the package of practical expedients permitted under the transition guidance within the new standard, which allowed us to carry forward the historical lease classification and not to reassess whether existing or expired contracts contain a lease. We also elected the short-term lease recognition exemption, which permits us to exclude short-term leases (i.e. leases with terms of 12 months or less) from the recognition requirements of this standard, and we elected to account for lease and non-lease components as a single lease component for all classes of underlying assets except for embedded leases. The adoption of ASC 842 had an immaterial impact on our consolidated net earnings, liquidity and debt covenants under our current agreements for the three- and six-month periods ended June 30, 2019. See Note 3, Leases, for more information.

Effective January 1, 2019, we adopted ASU 2018-02 (Topic 220*): Income Statement—Reporting Comprehensive Income – Reclassification of Certain Tax Effects from Accumulated Other Comprehensive Income*, which allows for optional reclassification from Accumulated Other Comprehensive Income (“AOCI”) to retained earnings for the stranded tax effects resulting from the Tax Cuts and Jobs Act in December 2017 (“Tax Act”). Stranded tax effects are the difference in deferred taxes between the amount initially recorded to other comprehensive income (“OCI”) at historical corporate income tax rates and the amount recorded using the newly-enacted corporate income tax rate. The cumulative tax rate adjustment to deferred taxes was required to be recorded through income tax expense from continuing operations in the period of enactment as opposed to OCI, resulting in the stranded tax effects in AOCI. The Company elected to not reclassify the stranded tax effects related to the Tax Act. As a result, the adoption did not have an impact on the Company's financial position, results of operations, or cash flow.

New Accounting Standards Not Yet Adopted

In August 2018, the FASB issued ASU 2018-15, *Intangibles – Goodwill and Other – Internal Use Software* (Subtopic 350-40): *Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract*, which includes amendments to align the accounting for costs incurred to implement a cloud computing arrangement that is a service contract with the guidance on capitalizing costs associated with developing or obtaining internal-use software. The accounting for the service component of a hosting arrangement that is a service contract is not affected by the amendments in this update. The ASU is effective for annual and interim periods beginning after December 15, 2019. Early adoption is permitted. The Company is currently evaluating the impact of the new guidance.

In August 2018, the FASB issued ASU 2018-14, *Compensation – Retirement Benefits – Defined Benefit Plans – General* (Subtopic 715-20): *Disclosure Framework – Changes to the Disclosure Requirements for Defined Benefit Plans*. ASU 2018-14 removes certain disclosures that are not considered cost beneficial, clarifies certain required disclosures and adds additional disclosures. The ASU is effective for annual periods beginning after December 31, 2020, with early adoption permitted. The amendments in ASU 2018-14 would need to be applied on a retrospective basis. The Company is currently evaluating the impact this guidance will have on its related disclosures.

In August 2018, the FASB issued ASU 2018-13, *Fair Value Measurement* (Topic 820): *Disclosure Framework – Changes to the Disclosure Requirements for Fair Value Measurement.* ASU 2018-13 removes or modifies certain disclosure requirements and adds additional requirements to improve the usefulness of the fair value measurement disclosure for financial statement users. The ASU is effective for annual and interim periods beginning after December 15, 2019, with early adoption permitted. Certain amendments of ASU 2018-13 are required to be applied prospectively for the first interim period of the initial year of adoption. All other amendments need to be applied retrospectively. The Company is currently evaluating the impact of the new guidance.

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

3. Leases

We group our leases into two primary lease types, real estate and equipment, and into various asset classes within each type. Real estate leases primarily include manufacturing locations, office space, warehouses, and design centers, while equipment leases primarily include manufacturing equipment.

Leases with an initial term of 12 months or less and certain month-to-month leases are not recorded on the balance sheet. The lease expense for these types of leases is recognized on a straight-line basis over the lease term.

To determine the lease term, we include the non-cancellable period of the lease together with the following: all periods covered by an option to extend the lease if we are reasonably certain to exercise that option; any periods covered by an option to terminate the lease if we are reasonably certain not to exercise that option; and any periods covered by an option to extend or not to terminate the lease that are controlled by the lessor. The exercising of lease renewal options is based on whether future economic benefit is expected to be derived from the renewal. Most of our real estate leases contain at least one renewal option. Renewal options generally range from 1 to 5 years. Although equipment leases may also contain renewal options, we typically do not expect to extend and/or exercise these renewal options unless a compelling business reason is provided to management.

Our leases may contain fixed and variable costs. Fixed costs determine the right-of-use asset. Variable costs are those costs which will vary month to month and are excluded from the calculation of the right-of-use asset. Variable lease costs are recorded to lease expense in the period in which they are incurred.

Our leases do not provide an implicit borrowing rate of return. Therefore, we use our incremental borrowing rate to calculate the present value of lease payments at inception of the lease or when a lease is modified.

Supplemental balance sheet information related to our leases was as follows (dollars in millions):

	June 30, 2019
Operating leases:	
Operating lease right-of-use assets	$ 238.0
Current portion of operating lease obligations	$ 59.9
Long-term portion of operating lease obligations	183.4
Total operating lease obligations	$ 243.3
Finance leases:	
Buildings	$ 0.3
Machinery and equipment	28.5
Total	28.8
Less accumulated amortization	(17.4)
Total	$ 11.4
Current portion of finance lease obligations	$ 1.5
Long-term portion of finance lease obligations	16.8
Total finance lease obligations	$ 18.3
Weighted-average remaining lease term (years):	
Operating leases	5.9
Finance leases	9.3
Weighted-average discount rate:	
Operating leases	4.38%
Finance leases	6.66%

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

	Three Months Ended June 30, 2019	Six Months Ended June 30, 2019
Finance lease cost:		
Amortization of finance lease assets	$ 0.4	$ 0.7
Interest on lease liabilities	0.3	0.6
Total finance lease cost	0.7	1.3
Operating lease cost	17.3	34.7
Short-term lease cost	6.4	10.7
Variable lease cost	3.9	9.8
Total lease cost	$ 28.3	$ 56.5

Supplemental cash flow information related to leases was as follows (dollars in millions):

	Six Months Ended June 30, 2019
Cash paid for amounts included in the measurement of lease liabilities:	
Operating cash flows for operating leases	$ (29.5)
Operating cash flows for finance leases	(0.7)
Financing cash flows for finance leases	(0.6)
Right-of-use assets obtained in exchange for new lease obligations:	
Operating leases	$ (16.1)
Finance leases	—
Supplemental non-cash information on changes in lease liabilities	$ 28.8
Supplemental non-cash information on changes in right-of-use assets	$ 6.1

The maturities of lease liabilities for operating and finance leases at June 30, 2019 were as follows (dollars in millions):

	Operating Leases	Finance Leases
2019	$ 35.6	$ 1.3
2020	64.3	2.7
2021	53.7	2.7
2022	36.8	2.7
2023	24.0	2.7
Thereafter	62.9	12.5
Total lease payments	277.3	24.6
Less imputed interest (a)	(34.0)	(6.3)
Present value of lease liabilities	$ 243.3	$ 18.3

(a) Calculated using the incremental borrowing rate for each lease applied to the future payments.

The maturities of lease liabilities at December 31, 2018 under ASC 840 were as follows (dollars in millions):

	Operating Leases	Finance Leases
2019	$ 70.1	$ 2.7
2020	58.7	2.7
2021	47.4	2.7
2022	29.9	2.7
2023	17.8	2.7
Thereafter	46.4	12.4
Total lease payments	$ 270.3	25.9
Less imputed interest (b)		(6.9)
Present value of lease liabilities		$ 19.0

(b) Calculated using the incremental borrowing rate for each lease applied to the future payments.

4. Revenue

Revenue Recognition

Revenue is recognized when control of the promised goods or services is transferred to customers in an amount that reflects the consideration expected to be received in exchange for those goods or services. Sales, value added, and other taxes collected concurrently with revenue-producing activities are excluded from revenue.

The following table presents our revenues disaggregated by product line (dollars in millions):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Packaging	$ 1,504.6	$ 1,496.2	$ 2,982.2	$ 2,899.1
Paper	237.8	250.8	477.5	520.2
Corporate and Other	17.5	20.5	33.9	38.8
Total revenue	$ 1,759.9	$ 1,767.5	$ 3,493.6	$ 3,458.1

Packaging Revenue

Our containerboard mills produce linerboard and semi-chemical corrugating medium which are papers primarily used in the production of corrugated products. The majority of our containerboard production is used internally by our corrugated products manufacturing facilities. The remaining containerboard is sold to outside domestic and export customers. Our corrugated products manufacturing plants produce a wide variety of corrugated packaging products and retail merchandise displays. We sell corrugated products to national, regional and local customers, which are broadly diversified across industries and geographic locations.

The Company recognizes revenue for its packaging products when performance obligations under the terms of a contract with a customer are satisfied. This occurs with the transfer of control of our products at a specific point in time. Based on our express terms and conditions of the sale of products to our customers, as well as terms included in contractual arrangements with our customers, we do not have an enforceable right of payment that includes a reasonable profit throughout the duration of the contract for products that do not have an alternative use. Revenue is recognized when the product is shipped from the mill or from our manufacturing facility to our customer. Certain customers may receive volume-based incentives, which are accounted for as variable consideration. We estimate these amounts based on the expected amount to be provided to customers and reduce revenue recognized.

Certain customers receive a portion of their packaging products as consigned inventory with billing triggered once the customer uses or consumes the designated product. Prior to invoicing, these amounts are handled as unbilled receivables. Total unbilled receivables, which are immaterial in amount, are included in the accounts receivable financial statement caption.

Paper Revenue

We manufacture and sell a range of communication-based papers. Communication papers consist of cut-size office papers, and printing and converting papers.

The Company recognizes revenue for its paper products when performance obligations under the terms of a contract with a customer are satisfied. This occurs with the transfer of control of our products at a specific point in time. Revenue is recognized when the product is shipped from the mill or from our manufacturing facility or distribution center to our customer. Certain customers may receive volume-based incentives, which are accounted for as variable consideration. We estimate these amounts based on the expected amount to be provided to customers and reduce revenue recognized.

Corporate and Other Revenue

Revenue in this segment primarily relates to Louisiana Timber Procurement Company, L.L.C. (LTP), a variable-interest entity that is 50% owned by PCA and 50% owned by Boise Cascade Company (Boise Cascade). 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. See Note 18, Transactions With Related Parties, for more information related to LTP.

The Company recognizes revenue within this segment when performance obligations under the terms of a contract with a customer are satisfied. This occurs with the transfer of control of our products at a specific point in time.

Practical Expedients and Exemption

Shipping and handling fees billed to a customer are recorded on a gross basis in "Net sales" with the corresponding shipping and handling costs included in "Cost of sales" in the concurrent period as the revenue is recorded. We expense sales commissions when incurred because the amortization period is one year or less. Sales commissions are recorded in "Selling, general, and administrative expenses".

We do not disclose the value of unsatisfied performance obligations for contracts with an original expected duration of one year or less.

5. Acquisitions

Englander dZignPak

On October 9, 2018, PCA acquired the assets of Englander dZignPak (“Englander”), a corrugated products manufacturer, for $56.3 million. The assets include two sheet plants located in Waco, Texas and Carrollton, Texas. Sales and total assets of the acquired company are not material to our overall sales and total assets. Operating results of the acquired assets subsequent to October 9, 2018 are included in our Packaging segment’s 2018 operating results. The total purchase price has been allocated to the assets acquired and liabilities assumed based on fair values at the date of acquisition, of which $28.6 million was allocated to goodwill (which is deductible for tax purposes) and $14.1 million to intangible assets (to be amortized over a weighted average life of approximately 9.7 years), primarily customer relationships, in the Packaging segment.

During the second quarter of 2019, we paid $1.4 million to the seller related to a final working capital adjustment. We recorded the adjustment as an increase to goodwill, which increased the purchase price to $57.7 million.

6. 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):

	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Numerator:				
Net income	$ 193.6	$ 186.6	$ 380.4	$ 326.7
Less: distributed and undistributed earnings allocated to participating securities	(1.5)	(1.4)	(2.9)	(2.5)
Net income attributable to common shareholders	$ 192.1	$ 185.2	$ 377.5	$ 324.2
Denominator:				
Weighted average basic common shares outstanding	93.8	93.6	93.8	93.6
Effect of dilutive securities	0.2	0.2	0.2	0.2
Weighted average diluted common shares outstanding	94.0	93.8	94.0	93.8
Basic income per common share	$ 2.05	$ 1.98	$ 4.03	$ 3.46
Diluted income per common share	$ 2.04	$ 1.97	$ 4.02	$ 3.46

7. Other Income (Expense), Net

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

	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Asset disposals and write-offs	$ (4.5)	$ (4.1)	$ (8.8)	$ (9.2)
Wallula mill restructuring (a)	—	(7.2)	(0.4)	(7.9)
Facilities closure and other costs (b)	—	—	—	(0.1)
Other	0.7	(2.0)	(0.6)	(4.4)
Total	$ (3.8)	$ (13.3)	$ (9.8)	$ (21.6)

(a) Includes charges related to the discontinuation of production of uncoated free sheet and coated one-side grades at the Wallula, Washington mill in the second quarter of 2018 and the conversion of the No. 3 paper machine to a high-performance 100% virgin kraft linerboard machine.

(b) Includes charges consisting of closure costs related to corrugated products facilities.

8. Income Taxes

For the three months ended June 30, 2019 and 2018, we recorded $62.4 million and $58.7 million of income tax expense and had an effective tax rate of 24.4% and 23.9%, respectively. For the six months ended June 30, 2019 and 2018, we recorded $124.9 million and $105.1 million of income tax expense and had an effective tax rate of 24.7% and 24.3%, respectively. The increase in our effective tax rate for both the three and six months ended June 30, 2019 compared with the same period in 2018 was due to higher state and local income taxes net of the federal benefit and higher employee compensation related impacts from restricted stock vests with a lower excess tax benefit (ASU 2016-09) and from the elimination of the performance based exclusion in tax reform.

Our effective tax rate may differ from the federal statutory income tax rate of 21.0% due primarily to the effect of state and local income taxes. During the six months ended June 30, 2019 and 2018, cash paid for taxes, net of refunds received, was $92.1 million and $22.2 million, respectively. The increase in cash tax payments between the periods is primarily due to the 2018 use of a federal overpayment carryforward from the 2017 tax year resulting from tax reform related changes.

During the three and six months ended June 30, 2019, there were no significant changes to our uncertain tax positions. For more information, see Note 7, Income Taxes, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of our 2018 Annual Report on Form 10-K.

9. 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.

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

	June 30, 2019	December 31, 2018
Raw materials	$ 303.5	$ 307.8
Work in process	14.3	13.9
Finished goods	213.9	199.0
Supplies and materials	284.0	274.9
Inventories	$ 815.7	$ 795.6

10. Property, Plant, and Equipment

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

	June 30, 2019	December 31, 2018
Land and land improvements	$ 167.7	$ 161.9
Buildings	812.0	795.5
Machinery and equipment	5,603.6	5,481.6
Construction in progress	172.2	176.7
Other	78.1	75.4
Property, plant and equipment, at cost	6,833.6	6,691.1
Less accumulated depreciation	(3,726.4)	(3,582.5)
Property, plant, and equipment, net	$ 3,107.2	$ 3,108.6

Depreciation expense for the three months ended June 30, 2019 and 2018 was $85.8 million and $91.6 million, respectively. During the six months ended June 30, 2019 and 2018, depreciation expense was $171.0 million and $186.2 million, respectively. We recognized $0.2 million and $13.5 million of incremental depreciation expense during the six months ended June 30, 2019 and 2018, respectively, as a result of shortening the useful lives of certain assets primarily related to the Wallula mill restructuring.

At June 30, 2019 and December 31, 2018, purchases of property, plant, and equipment included in accounts payable were $27.0 million and $24.7 million, respectively.

11. 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, 2019 and December 31, 2018, we had $863.5 million and $862.1 million of goodwill recorded in our Packaging segment, respectively. At both June 30, 2019 and December 31, 2018, 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, 2019	$ 917.3
Acquisitions (a)	1.4
Balance at June 30, 2019	$ 918.7

(a) During the three months ended June 30, 2019, the Company recorded a $1.4 million adjustment to increase the goodwill balance for the Company's October 2018 acquisition of Englander.

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, 2019			December 31, 2018		
	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 (b)	10.4	$ 503.8	$ 162.4	10.9	$ 504.6	$ 144.5
Trademarks and trade names	9.7	34.8	19.3	10.1	34.8	18.3
Other	2.5	4.3	3.0	3.0	4.3	2.7
Total intangible assets (excluding goodwill)	10.3	$ 542.9	$ 184.7	10.8	$ 543.7	$ 165.5

(b) During the second quarter of 2019, a corrugated products facility sold part of its operations which included existing inventory, certain production equipment, and customer relationships corresponding to the operations sold. As a result, the gross carrying amount for the customer relationships intangible asset was decreased by $0.7 million.

During the six months ended June 30, 2019 and 2018, amortization expense was $19.2 million and $20.5 million, respectively.

12. Accrued Liabilities

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

	June 30, 2019	December 31, 2018
Compensation and benefits	$ 106.1	$ 136.7
Medical insurance and workers' compensation	27.5	27.5
Customer volume discounts and rebates	22.1	25.2
Franchise, property, sales and use taxes	21.1	13.4
Environmental liabilities and asset retirement obligations	5.0	5.0
Severance, retention, and relocation	4.0	2.2
Other	12.1	12.4
Total	$ 197.9	$ 222.4

13. Debt

For the six months ended June 30, 2019 and 2018, cash payments for interest were $45.8 million and $51.1 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, 2019 and 2018, amortization of treasury lock settlements was $1.3 million, and for the six months ended June 30, 2019 and 2018, amortization of treasury locks was $2.6 million and $2.7 million, respectively. For both the three months ended June 30, 2019 and 2018, amortization of financing costs was $0.7 million, and during the six months ended June 30, 2019 and 2018, amortization of financing costs was $1.4 million and $1.3 million, respectively.

At June 30, 2019, we had $2,496.7 million of fixed-rate senior notes outstanding. The fair value of our fixed-rate debt was estimated to be $2,582.2 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 2018 Annual Report on Form 10-K.

For more information on our long-term debt and interest rates on that debt, see Note 10, Debt, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of our 2018 Annual Report on Form 10-K.

14. 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,	
	2019	2018	2019	2018
Service cost	$ 6.2	$ 6.2	$ 12.3	$ 12.4
Interest cost	11.7	10.6	23.5	21.3
Expected return on plan assets	(13.0)	(14.2)	(26.0)	(28.3)
Net amortization of unrecognized amounts				
Prior service cost	1.6	1.8	3.1	3.4
Actuarial loss	1.7	2.3	3.5	4.6
Net periodic benefit cost	$ 8.2	$ 6.7	$ 16.4	$ 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, 2019 and 2018, payments to our nonqualified pension plans were insignificant. For the three and six months ended June 30, 2019, we made contributions of $3.9 million and $4.6 million, respectively, to our qualified pension plans. We made contributions of $1.0 million and $3.2 million to our qualified plans during the three and six months ended June 30, 2018, respectively. We expect to contribute at least the estimated required minimum contributions to our qualified pension plans of approximately $15.8 million in 2019.

For the three and six months ended June 30, 2019 and 2018, the net periodic benefit cost for our postretirement plans was insignificant.

15. 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, 2019, 0.4 million shares were available for future grants 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, 2019:

	Restricted Stock		Performance Units	
	Shares	Weighted Average Grant-Date Fair Value	Shares	Weighted Average Grant-Date Fair Value
Outstanding at January 1, 2019	743,591	$ 86.90	266,704	$ 90.01
Granted	199,185	95.45	115,608	96.98
Vested	(198,292)	67.62	(59,165)	67.84
Forfeitures	(6,530)	102.74	—	—
Outstanding at June 30, 2019	737,954	$ 94.25	323,147	$ 96.56

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,	
	2019	2018	2019	2018
Restricted stock	$ 10.8	$ 5.0	$ 15.7	$ 8.9
Performance units	0.9	0.6	2.9	1.8
Total share-based compensation expense	11.7	5.6	18.6	10.7
Income tax benefit	(3.0)	(1.4)	(4.7)	(2.7)
Share-based compensation expense, net of tax benefit	$ 8.7	$ 4.2	$ 13.9	$ 8.0

The fair value of restricted stock is determined based on the closing price of the Company’s stock on the grant date. Compensation expense, net of estimated forfeitures, is recorded over the requisite service period. As PCA’s Board of Directors has the ability to accelerate the vesting of these awards upon an employee’s retirement, the Company accelerates the recognition of compensation expense for certain employees approaching normal retirement age.

Performance unit awards are earned based on the achievement of defined performance rankings of Return on Invested Capital (ROIC) or Total Shareholder Return (TSR) compared to ROIC and TSR for peer companies. For performance unit awards made in 2019 and 2018, in terms of grant date value, 50% used TSR as the performance measure and 50% used ROIC as the performance measure. The ROIC component of performance unit awards is valued based on the closing price of the stock on the grant date. As the ROIC component contains a performance condition, compensation expense, net of estimated forfeitures, is recorded over the requisite service period based on the most probable number of awards expected to vest. The TSR component of performance unit awards is valued using a Monte Carlo simulation as the TSR component contains a market condition. The Monte Carlo simulation estimates the fair value of the TSR component based on the expected term of the award, a risk-free interest rate, expected dividends, and expected volatility of the Company's common stock and the common stock of the peer companies. Compensation expense is recorded ratably over the expected term of the award.

The unrecognized compensation expense for all share-based awards at June 30, 2019 was as follows (dollars in millions):

	June 30, 2019	
	Unrecognized Compensation Expense	Remaining Weighted Average Recognition Period (in years)
Restricted stock	$ 34.7	2.9
Performance units	21.6	2.8
Total unrecognized share-based compensation expense	$ 56.3	2.9

16. Stockholders' Equity

Dividends

During the six months ended June 30, 2019, we paid $149.3 million of dividends to shareholders. On May 7, 2019, PCA's Board of Directors declared a regular quarterly cash dividend of $0.79 per share of common stock, which was paid on July 15, 2019 to shareholders of record as of June 14, 2019. The dividend payment was $74.7 million.

Repurchases of Common Stock

On February 25, 2016, PCA announced that its Board of Directors authorized the repurchase of $200.0 million of the Company's outstanding common stock. 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 under this authority during the three and six months ended June 30, 2019. At June 30, 2019, $193.0 million of the authorized amount remained available for repurchase of the Company's common stock.

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:

	Foreign Currency Translation Adjustments	Unrealized Loss On Treasury Locks, Net	Unrealized Loss on Foreign Exchange Contracts	Unfunded Employee Benefit Obligations	Total
Balance at January 1, 2019	$ (0.4)	$ (10.2)	$ (0.3)	$ (127.9)	$ (138.8)
Amounts reclassified from AOCI, net of tax	—	1.9	—	4.7	6.6
Balance at June 30, 2019	$ (0.4)	$ (8.3)	$ (0.3)	$ (123.2)	$ (132.2)

Reclassifications out of AOCI were as follows (dollars in millions). Amounts in parentheses indicate expenses in the Consolidated Statements of Income:

	Amounts Reclassified from AOCI				
	Three Months Ended June 30,		Six Months Ended June 30,		
Details about AOCI Components	**2019**	**2018**	**2019**	**2018**	
Unrealized loss on treasury locks, net (a)	$ (1.3)	$ (1.3)	$ (2.6)	$ (2.7)	See (a) below
	0.3	0.3	0.7	0.7	Tax benefit
	$ (1.0)	$ (1.0)	$ (1.9)	$ (2.0)	Net of tax
Unfunded employee benefit obligations (b)					
Amortization of prior service costs	$ (1.5)	$ (1.7)	$ (3.0)	$ (3.3)	See (b) below
Amortization of actuarial gains / (losses)	(1.6)	(2.3)	(3.3)	(4.6)	See (b) below
	(3.1)	(4.0)	(6.3)	(7.9)	Total before tax
	0.8	1.0	1.6	1.9	Tax benefit
	$ (2.3)	$ (3.0)	$ (4.7)	$ (6.0)	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 $5.2 million ($3.9 million after tax). For a discussion of treasury lock derivative instrument activity, see Note 14, Derivative Instruments and Hedging Activities, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of our 2018 Annual Report on Form 10-K.

(b) These AOCI components are included in the computation of net pension and postretirement benefit costs. See Note 14, Employee Benefit Plans and Other Postretirement Benefits, for additional information.

17. Concentrations of Risk

Our Paper segment has 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% of our total Company sales revenue for both the six month periods ended June 30, 2019 and 2018 and approximately 51% and 45% of our Paper segment sales revenue for both of those periods, respectively. For full year 2018, sales to Office Depot represented 47% of our Paper segment sales. At June 30, 2019 and December 31, 2018, we had $83.7 million and $66.7 million of accounts receivable due from Office Depot, respectively, which represents 9% and 7% of our total Company accounts receivable, respectively.

18. Transactions With Related Parties

Louisiana Timber Procurement Company, L.L.C. (LTP) is a variable-interest entity that is 50% owned by PCA and 50% owned by Boise Cascade Company (Boise Cascade). LTP procures sawtimber, pulpwood, residual chips, and other residual wood fiber to meet the wood and fiber requirements of PCA and Boise Cascade in Louisiana. PCA is the primary beneficiary of LTP and has the power to direct the activities that most significantly affect the economic performance of LTP. Therefore, we consolidate 100% of LTP in our financial statements in our Corporate and Other segment. The carrying amounts of LTP's assets and liabilities (which relate primarily to non-inventory working capital items) on our Consolidated Balance Sheets were $3.4 million at June 30, 2019 and $2.7 million at December 31, 2018. During the three months ended June 30, 2019 and 2018, we recorded $21.4 million and $22.6 million, respectively, and during the six months ended June 30, 2019 and 2018, we recorded $41.4 million and $43.0 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, 2019 and 2018, fiber purchases from related parties were $4.4 million and $4.7 million**,** respectively. Fiber purchases from related parties were $8.8 million and $8.7 million, respectively, during the six months ended June 30, 2019 and 2018. 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.

19. 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, non-operating pension expense, and income taxes. For certain 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, 2019	Sales, net Trade	Sales, net Intersegment	Sales, net Total	Operating Income (Loss)	
Packaging	$ 1,497.8	$ 6.8	$ 1,504.6	$ 263.9	
Paper	237.8	—	237.8	38.8	
Corporate and other	24.3	31.5	55.8	(22.3)	
Intersegment eliminations	—	(38.3)	(38.3)	—	
	$ 1,759.9	$ —	$ 1,759.9	280.4	
Non-operating pension expense				(2.0)	
Interest expense, net				(22.4)	
Income before taxes				$ 256.0	

Three Months Ended June 30, 2018	Sales, net Trade	Sales, net Intersegment	Sales, net Total	Operating Income (Loss)	
Packaging	$ 1,489.6	$ 6.6	$ 1,496.2	$ 273.2	(b)
Paper	250.8	—	250.8	16.2	(b)
Corporate and Other	27.1	33.5	60.6	(19.8)	(b)
Intersegment eliminations	—	(40.1)	(40.1)	—	
	$ 1,767.5	$ —	$ 1,767.5	269.6	
Non-operating pension expense				(0.5)	
Interest expense, net				(23.8)	
Income before taxes				$ 245.3	

Six Months Ended June 30, 2019	Sales, net Trade	Sales, net Intersegment	Sales, net Total	Operating Income (Loss)	
Packaging	$ 2,968.6	$ 13.6	$ 2,982.2	$ 513.4	(a)
Paper	477.5	—	477.5	84.4	(a)
Corporate and Other	47.5	65.0	112.5	(42.0)	
Intersegment eliminations	—	(78.6)	(78.6)	—	
	$ 3,493.6	$ —	$ 3,493.6	555.8	
Non-operating pension expense				(4.1)	
Interest expense, net				(46.4)	
Income before taxes				$ 505.3	

Six Months Ended June 30, 2018	Sales, net Trade	Sales, net Intersegment	Sales, net Total	Operating Income (Loss)	
Packaging	$ 2,886.3	$ 12.8	$ 2,899.1	$ 497.9	(b)
Paper	520.2	—	520.2	23.5	(b)
Corporate and Other	51.6	62.6	114.2	(38.9)	(b)
Intersegment eliminations	—	(75.4)	(75.4)	—	
	$ 3,458.1	$ —	$ 3,458.1	482.5	
Non-operating pension expense				(1.1)	
Interest expense, net				(49.6)	
Income before taxes				$ 431.8	

(a) The six months ended June 30, 2019 include $0.6 million of charges related to the announced second quarter 2018 discontinuation of uncoated free sheet and coated one-side grades at the Wallula, Washington mill associated with the conversion of the No. 3 paper machine to a high-performance 100% virgin kraft linerboard machine.

(b) Includes the following:

1. For the three and six months ended June 30, 2018, $13.6 million and $22.4 million, respectively, of charges related to the second quarter 2018 discontinuation of uncoated free sheet and coated one-side grades at the Wallula, Washington mill associated with the conversion of the No. 3 paper machine to a high-performance 100% virgin kraft linerboard machine.

2. For the three and six months ended June 30, 2018, $0.2 million and $0.5 million, respectively, of charges consisting of closure costs related to corrugated products facilities and a corporate administration facility.

20. 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 10, Debt, and Note 19, 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 2018 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, 2019, 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 involving the decedents and other allegedly injured parties, alleging negligence on the part of the Company and claiming compensatory and punitive damages. The Company is vigorously defending these lawsuits. The Company believes that these suits are covered by its liability insurance policies, subject to an aggregate $1.0 million deductible. The incident remains under investigation and all lawsuits are in the early stages. Accordingly, 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. As of December 31, 2017, the Company finalized the claim with the insurance carrier and received $17.0 million in insurance proceeds during the first quarter of 2018. The insurance proceeds are included in net cash provided by operating activities ($14.5 million) and in net cash used for investing activities ($2.5 million) based on the nature of the reimbursement.

The Company has cooperated with investigations from the U.S. Occupational Health and Safety Administration (OSHA), the U.S. Chemical Safety Board (CSB) and the U.S. Environmental Protection Agency (EPA). The U.S. Chemical Safety Board completed its investigation and issued its report during the second quarter of 2018. The Company settled with OSHA during the second quarter of 2018 and paid approximately $40,000 in penalties for citations. The EPA investigation is ongoing.

Legal Proceedings

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

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 2018 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 third largest producer of containerboard products and the third largest producer of uncoated freesheet paper in North America. We operate six containerboard mills, two paper mills, and 94 corrugated products manufacturing plants. Our containerboard mills produce linerboard and corrugating medium, which are papers primarily used in the production of corrugated products. Our corrugated products manufacturing plants produce a wide variety of corrugated packaging products, including conventional shipping containers used to protect and transport manufactured goods, multi-color boxes and displays with strong visual appeal that help to merchandise the packaged product in retail locations, and honeycomb protective packaging. In addition, we are a large producer of packaging for meat, fresh fruit and vegetables, processed food, beverages, and other industrial and consumer products. We also manufacture and sell white papers, including both commodity and specialty papers, which may have custom or specialized features such as colors, coatings, high brightness, and recycled content. We are headquartered in Lake Forest, Illinois and operate primarily in the United States.

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 2018 Annual Report on Form 10-K.

Executive Summary

Second quarter net sales were $1.76 billion in 2019 and $1.77 billion in 2018. We reported $194 million of net income, or $2.04 per diluted share, during the second quarter of 2019, compared to $187 million, or $1.97 per diluted share, during the same period in 2018. Net income included no income or expense for special items in the second quarter of 2019, compared to $10 million of expense in 2018 (discussed below). Excluding special items, net income was $197 million, or $2.08 per diluted share, during the second quarter of 2018. The decrease was driven primarily by higher operating costs, higher converting costs, lower Paper segment volume, higher annual outage expenses, and a higher tax rate. These items were partially offset by higher Packaging segment volume and prices and mix, higher Paper segment prices and mix, lower Wallula No. 3 paper machine conversion-related costs, and lower freight costs. For additional detail on special items included in reported GAAP results, as well as segment income (loss) excluding special items, earnings before non-operating pension expense, interest, income taxes, and depreciation, amortization, and depletion (EBITDA), and EBITDA excluding special items, see "Item 2. Reconciliations of Non-GAAP Financial Measures to Reported Amounts."

Packaging segment income from operations was $264 million in the second quarter of 2019, compared to $273 million in the second quarter of 2018. Packaging segment EBITDA was $349 million in the second quarter of 2019 compared to $363 million, excluding special items, in the second quarter of 2018. The decrease in EBITDA excluding special items was due primarily to lower export containerboard prices, higher operating and converting costs, and other fixed costs, partially offset by higher domestic containerboard and corrugated products prices and mix and sales and production volumes, lower annual outage expenses, lower Wallula No. 3 paper machine conversion-related costs, and lower freight costs.

Paper segment income from operations was $39 million in the second quarter of 2019, compared to $16 million in the second quarter of 2018. Paper segment EBITDA was $48 million in the second quarter of 2019, compared to $38 million, excluding special items, in the second quarter of 2018. The increase in EBITDA excluding special items was due to higher prices and mix, lower operating costs, and lower freight costs, partially offset by lower sales and production volumes primarily related to the exit from the paper business at the Wallula Mill, and higher annual outage expenses.

During the first six months of 2019, we reported $380 million of net income, or $4.02 per diluted share, compared to $327 million of net income, or $3.46 per diluted share, during the same period in 2018. Net income included $0.5 million of expense for special items (discussed below), compared to $17 million of expense for special items during the same period in 2018. Excluding special items, we recorded $381 million of net income, or $4.02 per diluted share, during the first six months of 2019, compared to $344 million of net income, or $3.64 per diluted share, in the first six months of 2018. The increase was driven primarily by higher domestic containerboard and corrugated products prices and mix and sales and production volumes, higher Paper segment prices and mix, lower recycled fiber costs, lower Wallula No. 3 paper machine conversion-related costs, and lower freight expense, partially offset by lower containerboard export prices, lower volumes in our Paper segment, primarily related to the exit from the paper business at the Wallula Mill, higher indirect and converting costs, higher direct material costs, higher fixed expenses, and higher annual outage expenses.

Packaging segment income from operations was $513 million in the first six months of 2019, compared to $498 million in the same period in 2018. Packaging segment EBITDA excluding special items was $682 million in the first six months of 2019, compared to $671 million in the first six months of 2018. The increase was driven primarily by higher domestic containerboard and corrugated products prices and mix and sales and production volumes, lower recycled fiber costs, lower Wallula No. 3 paper machine conversion-related costs, and lower annual outage expenses, partially offset by lower containerboard export prices, higher costs for wood, labor, and other operating costs.

Paper segment income from operations was $84 million in the first six months of 2019, compared to $24 million in the first six months of 2018. Paper segment EBITDA excluding special items was $103 million in the first six months of 2019, compared to $69 million in the same period in 2018. The increase was due primarily to higher prices and mix and lower operating costs, partially offset by lower sales and production volumes, primarily related to the exit from the paper business at the Wallula Mill, and higher annual outage costs.

During the second quarter of 2018, the Company discontinued production of uncoated freesheet and coated one-side grades at its Wallula, Washington mill and converted the No. 3 paper machine to a 400,000 ton-per-year virgin kraft linerboard machine. The Company took an extended outage on the machine to complete the conversion in the fourth quarter of 2018. The Company incurred charges in both the Packaging and Paper segments during the first quarter of 2019 and the first and second quarters of 2018 relating to these activities as described below under "Special Items and Earnings per Diluted Share, Excluding Special Items." The Company does not expect to incur further related charges going forward.

Special Items and Earnings per Diluted Share, Excluding Special Items

A reconciliation of reported earnings per diluted share to earnings per diluted share, excluding special items, for the three and six months ended June 30, 2019 and 2018 are as follows:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2019	2018	2019	2018
Earnings per diluted share, as reported	$ 2.04	$ 1.97	$ 4.02	$ 3.46
Special items:				
Wallula mill restructuring (a)	—	0.11	—	0.18
Total special items	—	0.11	—	0.18
Earnings per diluted share, excluding special items	$ 2.04	$ 2.08	$ 4.02	$ 3.64

(a) For the six months ended June 30, 2019 and the three and six months ended June 30, 2018 include $0.6 million, $13.6 million, and $22.4 million, respectively, of charges related to the discontinuation of production of uncoated free sheet and coated one-side grades at the Wallula, Washington mill in the second quarter of 2018 and conversion of the No. 3 paper machine to a high-performance 100% virgin kraft linerboard machine. The $0.6 million in changes for 2019 rounds down to $0.00 on an earnings per diluted share basis.

Included in this Item 2 are various non-GAAP financial measures, including diluted EPS excluding special items, segment income excluding special items and EBITDA excluding special items. 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 North American industry-wide corrugated products shipments per work day were flat during the second quarter of 2019 compared to the same quarter of 2018. Reported industry containerboard production decreased 5.8% compared to the second quarter of 2018. Reported industry containerboard inventories at the end of the second quarter of 2019 were approximately 2.5 million tons, up 4.4% compared to the same period in 2018. Reported containerboard export shipments were down 16.4% compared to the second quarter of 2018. Trade publications reported prices were lower than prices reported during the first quarter of 2019 with decreases of $10 per ton for both domestic linerboard and corrugating medium in both May and June of 2019.

Trade publications reported North American uncoated freesheet paper shipments were down 12.3% in the second quarter of 2019, compared to the same quarter of 2018. Average prices reported by a trade publication for cut size office papers were higher by $120 per ton, or 11.7%, in the second quarter of 2019, compared to the second quarter of 2018.

Outlook

Looking ahead to the third quarter of 2019, in our Packaging segment, we expect seasonally higher containerboard and corrugated products shipments, with lower prices as a result of the published domestic containerboard price decreases, and lower export prices. In the Paper segment, volume should be seasonally stronger, but prices and mix are expected to move lower. Converting and other costs should be slightly higher, but operating costs and scheduled maintenance outage costs should be lower. Considering these items, we expect third quarter earnings to be lower than the second quarter.

Results of Operations

Three Months Ended June 30, 2019, compared to Three Months Ended June 30, 2018

The historical results of operations of PCA for the three months ended June 30, 2019 and 2018 are set forth below (dollars in millions):

	Three Months Ended June 30, 2019	Three Months Ended June 30, 2018	Change
Packaging	$ 1,504.6	$ 1,496.2	$ 8.4
Paper	237.8	250.8	(13.0)
Corporate and Other	55.8	60.5	(4.7)
Intersegment eliminations	(38.3)	(40.0)	1.7
Net sales	$ 1,759.9	$ 1,767.5	$ (7.6)
Packaging	$ 263.9	$ 273.2	$ (9.3)
Paper	38.8	16.2	22.6
Corporate and Other	(22.3)	(19.8)	(2.5)
Income from operations	$ 280.4	$ 269.6	$ 10.8
Non-operating pension expense	(2.0)	(0.5)	(1.5)
Interest expense, net	(22.4)	(23.8)	1.4
Income before taxes	256.0	245.3	10.7
Income tax provision	(62.4)	(58.7)	(3.7)
Net income	$ 193.6	$ 186.6	$ 7.0
Non-GAAP Measures (a)			
Net income excluding special items	$ 193.6	$ 197.0	$ (3.4)
Consolidated EBITDA	376.2	373.7	2.5
Consolidated EBITDA excluding special items	376.2	382.3	(6.1)
Packaging EBITDA	348.6	357.7	(9.1)
Packaging EBITDA excluding special items	348.6	362.8	(14.2)
Paper EBITDA	48.2	34.2	14.0
Paper EBITDA excluding special items	48.2	37.7	10.5

(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 decreased $8 million, or 0.4%, to $1,760 million during the three months ended June 30, 2019, compared to $1,768 million during the same period in 2018.

Packaging. Net sales increased $8 million, or 0.6%, to $1,504 million, compared to $1,496 million in the second quarter of 2018 due to higher corrugated products prices and mix ($27 million), partially offset by lower domestic and export containerboard price and mix ($11 million) and decreased containerboard and corrugated products volume ($8 million). In the second quarter of 2019, our domestic containerboard prices decreased 3.4%, while export prices decreased 19.0%, compared to the same period in 2018. In the second quarter of 2019, export and domestic containerboard outside shipments decreased 10.1%, compared to the second quarter of 2018. Total corrugated products shipments were down 1.3%, as there was one less work day in the second quarter of 2019, compared to the same period in 2018. However, total corrugated products shipments were up 0.3% per work day in 2019 compared to the second quarter of 2018.

Paper. Net sales during the three months ended June 30, 2019 decreased $13 million, or 5.2%, to $238 million, compared to $251 million in the second quarter of 2018, due to decreased volume ($33 million), primarily due to the exit from the paper business at Wallula, partially offset by favorable changes in prices and mix ($20 million).

Gross Profit

Gross profit increased $7 million during the three months ended June 30, 2019, compared to the same period in 2018. The increase was driven primarily by higher corrugated products prices and mix and sales and production volumes, higher prices and mix in our Paper segment, partially offset by lower containerboard prices and mix, lower volumes in our Paper segment and higher operating and converting costs. In the three months ended June 30, 2019, gross profit did not include any special items, compared to $6 million of Wallula Mill restructuring charges in the same period last year.

Selling, General, and Administrative Expenses

Selling, general, and administrative expenses ("SG&A") increased $6 million during the three months ended June 30, 2019, compared to the same period in 2018. The increase was primarily due to higher employee salaries and fringes.

Other Income (Expense), Net

Other income (expense), net, for the three months ended June 30, 2019 and 2018 are set forth below (dollars in millions):

	Three Months Ended June 30,	
	2019	2018
Asset disposals and write-offs	$ (4.5)	$ (4.1)
Wallula mill restructuring	—	(7.2)
Other	0.7	(2.0)
Total	$ (3.8)	$ (13.3)

We discuss these items in more detail in Note 7, 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 $11 million, or 4.0%, during the three months ended June 30, 2019, compared to the same period in 2018. The second quarter of 2019 included no special items, compared to $14 million of special item expense, related to the Wallula Mill restructuring, in the second quarter of 2018.

Packaging. Packaging segment income from operations decreased $9 million to $264 million, compared to $273 million during the three months ended June 30, 2018. The decrease related primarily to lower export containerboard prices ($10 million), higher operating and converting costs ($37 million) and other fixed costs ($6 million), partially offset by higher containerboard and corrugated products sales and production volumes ($11 million), higher domestic containerboard and corrugated products prices and mix ($20 million), lower Wallula No. 3 paper machine conversion-related costs ($6 million), lower annual outage expenses ($1 million), and lower freight expenses ($1 million). There were no special items during the second quarter of 2019. Special items for the second quarter of 2018 included $5 million of Wallula Mill restructuring charges.

Paper. Paper segment income from operations increased $23 million to $39 million, compared to $16 million during the three months ended June 30, 2018. The increase primarily related to higher prices and mix ($20 million), lower operating costs ($5 million), lower freight expenses ($2 million), and other costs ($2 million), partially offset by higher annual outage expenses ($9 million) and lower sales and production volumes ($6 million). There were no special items in the Paper segment in the second quarter of 2019. Special items for the second quarter 2018 included expense of $8 million related to the Wallula Mill restructuring.

Non-Operating Pension Expense, Interest Expense, Net and Income Taxes

Non-operating pension expense increased $1.5 million during the three months ended June 30, 2019, compared to the same period in 2018. The increase in non-operating pension expense was primarily related to the 2018 asset performance (i.e. lower asset balances resulted in lower than expected return) and the amortization of the 2018 losses.

Interest expense, net decreased $1 million during the three months ended June 30, 2019, compared to the same period in 2018. The decrease in interest expense, net was primarily due to higher interest income as a result of higher cash balances in 2019.

During the three months ended June 30, 2019, we recorded $62 million of income tax expense, compared to $59 million of expense during the three months ended June 30, 2018. The effective tax rate for the three months ended June 30, 2019 and 2018 was 24.4% and 23.9%, respectively. The increase in our effective tax rate was due to higher state and local income taxes net of the federal benefit and higher employee compensation related impacts from restricted stock vests with a lower excess tax benefit (ASU 2016-09) and from the elimination of the performance based exclusion in tax reform.

Six Months Ended June 30, 2019, compared to Six Months Ended June 30, 2018

The historical results of operations of PCA for the six months ended June 30, 2019 and 2018 are set forth below (dollars in millions):

	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018	Change
Packaging	$ 2,982.2	$ 2,899.1	$ 83.1
Paper	477.5	520.2	(42.7)
Corporate and Other	112.5	114.2	(1.7)
Intersegment eliminations	(78.6)	(75.4)	(3.2)
Net sales	$ 3,493.6	$ 3,458.1	$ 35.5
Packaging	$ 513.4	$ 497.9	$ 15.5
Paper	84.4	23.5	60.9
Corporate and Other	(42.0)	(38.9)	(3.1)
Income from operations	$ 555.8	$ 482.5	$ 73.3
Non-operating pension expense	(4.1)	(1.1)	(3.0)
Interest expense, net	(46.4)	(49.6)	3.2
Income before taxes	505.3	431.8	73.5
Income tax provision	(124.9)	(105.1)	(19.8)
Net income	$ 380.4	$ 326.7	$ 53.7
Non-GAAP Measures (a)			
Net income excluding special items	$ 380.9	$ 343.9	$ 37.0
Consolidated EBITDA	746.4	694.7	51.7
Consolidated EBITDA excluding special items	746.8	704.1	42.7
Packaging EBITDA	682.2	665.6	16.6
Packaging EBITDA excluding special items	682.4	670.8	11.6
Paper EBITDA	102.9	64.8	38.1
Paper EBITDA excluding special items	103.1	69.0	34.1

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 $36 million, or 1.0%, to $3,494 million during the six months ended June 30, 2019, compared to $3,458 million during the same period in 2018.

Packaging. Net sales increased $83 million, or 2.9%, to $2,982 million, compared to $2,899 million in the six months ended June 30, 2018, due to higher corrugated products prices and mix ($92 million) and increased corrugated products volume ($12 million), partially offset by lower domestic and export containerboard price and mix ($12 million) and lower containerboard volume ($9 million). Our domestic containerboard prices in the first six months of 2019 were flat, and export prices decreased 11.7%, compared to the same period in 2018. In the first six months of 2019, containerboard outside shipments decreased 14.8% compared to the same period in 2018. Total corrugated products shipments were down 0.3%, as there was one less work day in the first six months of 2019, compared to the first six months of 2018. However, corrugated products shipments in total per work day were up 0.5% during the six months ended June 30, 2019, compared to the same period in 2018. Prices reported by trade publications decreased by $10 per ton for linerboard in March, May, and June, and corrugating medium decreased $20 in January and $10 in May and June 2019.

Paper. Net sales during the six months ended June 30, 2019 decreased $43 million, or 8.2%, to $477 million, compared to $520 million in the six months ended June 30, 2018, due to lower volume ($88 million), partially offset by higher prices and mix ($45 million).

Gross Profit

Gross profit increased $73 million during the six months ended June 30, 2019, compared to the same period in 2018. The increase was driven primarily by higher corrugated products prices and mix and sales and production volumes, higher Paper segment prices and mix, partially offset by lower containerboard export prices, higher operating costs, and higher annual outage expense. In the six months ended June 30, 2019, gross profit included no significant special items, compared to $15 million of Wallula Mill restructuring charges in the same period last year.

Selling, General, and Administrative Expenses

Selling, general, and administrative expenses ("SG&A") increased $11 million during the six months ended June 30, 2019, compared to the same period in 2018. The increase was primarily due to higher employee salaries and fringes.

Other Income (Expense), Net

Other income (expense), net, for the six months ended June 30, 2019 and 2018 are set forth below (dollars in millions):

	Six Months Ended June 30, 2019	Six Months Ended June 30, 2018
Asset disposals and write-offs	$ (8.8)	$ (9.2)
Wallula mill restructuring	(0.4)	(7.9)
Facilities closure and other costs	—	(0.1)
Other	(0.6)	(4.4)
Total	$ (9.8)	$ (21.6)

We discuss these items in more detail in Note 7, 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 $73 million, or 15.2%, during the six months ended June 30, 2019, compared to the same period in 2018. The first six months of 2019 included less than $1 million of expense for special items, primarily related to Wallula Mill restructuring. The six months ended June 30, 2018 included $23 million of expense for special items, primarily related to Wallula Mill restructuring.

Packaging. Packaging segment income from operations increased $16 million to $513 million during the first six months of 2019 compared to the same period last year. The increase related primarily to higher domestic containerboard and corrugated products prices and mix ($68 million), higher containerboard and corrugated products sales and production volumes ($45 million), lower recycled fiber costs ($14 million), lower Wallula No. 3 paper machine conversion-related costs ($6 million), and lower annual outage expense ($4 million), partially offset by lower containerboard export prices ($12 million), higher operating and converting costs ($74 million), higher wood costs ($23 million), higher depreciation ($4 million), and other expenses ($14 million). There were an insignificant amount of special items in the Packaging segment in the first six months of 2019. The first six months of 2018 included $5 million of Wallula Mill restructuring charges.

Paper. Paper segment income from operations increased $61 million to $84 million, compared to the six months ended June 30, 2018. The increase primarily related to higher prices and mix ($46 million), lower input and operating costs ($16 million), lower freight expenses ($3 million), and lower depreciation and other expenses ($10 million), partially offset by lower sales and production volume ($22 million) and higher annual outage expense ($9 million). There were an insignificant amount of special items in the Paper segment in the first six months of 2019. The first six months of 2018 included $17 million of Wallula Mill restructuring charges.

Non-Operating Pension Expense, Interest Expense, Net and Income Taxes

Non-operating pension expense increased $3 million during the six months ended June 30, 2019, compared to the same period in 2018. The increase in non-operating pension expense was primarily related to the 2018 asset performance (i.e. lower asset balances resulted in lower than expected return) and the amortization of the 2018 losses.

Interest expense, net, was $46 million during the six months ended June 30, 2019, compared to $50 million during the six months ended June 30, 2018. The decrease in interest expense was primarily due to higher interest income as a result of higher cash balances in 2019 and lower interest, as the Company repaid $150 million of notes in March 2018.

During the six months ended June 30, 2019, we recorded $125 million of income tax expense, compared to $105 million of expense during the six months ended June 30, 2018. The effective tax rate for the six months ended June 30, 2019 and 2018 was 24.7% and 24.3%, respectively. The increase in our effective tax rate was due to higher state and local income taxes net of the federal benefit and higher employee compensation related impacts from restricted stock vests with a lower excess tax benefit (ASU 2016-09) and from the elimination of the performance based exclusion in tax reform.

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, 2019, we had $569 million of cash and $328 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, common stock dividends, and repurchases of common stock. 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, refinance, extend, or replace such debt or credit 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 Ended June 30,		
	2019	2018	Change
Net cash provided by (used for):			
Operating activities	$ 538.4	$ 533.5	$ 4.9
Investing activities	(172.8)	(273.5)	100.7
Financing activities	(157.7)	(277.3)	119.6
Net increase (decrease) in cash and cash equivalents	$ 207.9	$ (17.3)	$ 225.2

Operating Activities

Our operating cash flow is primarily driven by our earnings and changes in operating assets and liabilities, such as accounts receivable, inventories, accounts payable and other accrued liabilities, as well as factors described below. 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.

During the six months ended June 30, 2019, net cash provided by operating activities was $538 million, compared to $533 million in the same period in 2018, an increase of $5 million. Cash from operations excluding changes in cash used for operating assets and liabilities increased $46 million, primarily due to higher income from operations as discussed above. Cash decreased by $41 million due to changes in operating assets and liabilities. The decrease was primarily due to the following: (a) lower taxes paid in 2018 compared to 2019 due to the 2018 use of a federal overpayment carryforward from the 2017 tax year resulting from Federal Tax Reform, (b) a smaller increase in inventory for 2018 compared to 2019 primarily related to higher sales in the Paper segment during the first six months in 2018 compared to 2019 resulting in favorable changes in finished goods, and (c) a decrease in accounts payable levels related to the timing of payments in the second quarter. These changes were partially offset by a smaller increase in accounts receivable in 2019 compared to 2018 related to timing of collections in the Packaging segment.

Investing Activities

We used $173 million for investing activities during the six months ended June 30, 2019 compared to $274 million during the same period in 2018. We spent $171 million for internal capital investments during the six months ended June 30, 2019, compared to $274 million during the same period in 2018.

We expect capital investments in 2019 to be between $390 million and $410 million, not including acquisitions. These expenditures could increase or decrease as a result of a number of factors, including our financial results, strategic opportunities, future economic conditions, and our regulatory compliance requirements. We currently estimate capital expenditures to comply with environmental regulations will be about $10 million in 2019. 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 2018 Annual Report on Form 10-K.

Financing Activities

During the six months ended June 30, 2019, net cash used for financing activities was $158 million, compared to $277 million during the same period in 2018. The decrease primarily relates to the $150 million repayment from cash on hand at maturity of our 6.5% senior notes that were due March 2018. In the first six months of 2019, we paid $149 million of dividends compared with $119 million of dividends paid during the first six months of 2018. On May 15, 2018, PCA's Board of Directors announced an increase in the regular quarterly cash dividend to $0.79 per share from the previous $0.63 per share dividend, beginning with the dividend paid on July 13, 2018.

For more information about our debt, see Note 10, Debt, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of our 2018 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 2018 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, 2019 and 2018 follow (dollars in millions):

	Three Months Ended June 30,					
	2019			2018		
	Income before Taxes	Income Taxes	Net Income	Income before Taxes	Income Taxes	Net Income
As reported in accordance with GAAP	$ 256.0	$ (62.4)	$ 193.6	$ 245.3	$ (58.7)	$ 186.6
Special items:						
Wallula mill restructuring (b)	—	—	—	13.6	(3.4)	10.2
Facilities closure and other costs (b)	—	—	—	0.2	—	0.2
Total special items	—	—	—	13.8	(3.4)	10.4
Excluding special items	$ 256.0	$ (62.4)	$ 193.6	$ 259.1	$ (62.1)	$ 197.0

	Six Months Ended June 30,					
	2019			2018		
	Income before Taxes	Income Taxes	Net Income	Income before Taxes	Income Taxes	Net Income
As reported in accordance with GAAP	$ 505.3	$ (124.9)	$ 380.4	$ 431.8	$ (105.1)	$ 326.7
Special items:						
Wallula mill restructuring (a)(b)	0.6	(0.1)	0.5	22.4	(5.6)	16.8
Facilities closure and other costs (b)	—	—	—	0.5	(0.1)	0.4
Total special items	0.6	(0.1)	0.5	22.9	(5.7)	17.2
Excluding special items	$ 505.9	$ (125.0)	$ 380.9	$ 454.7	$ (110.8)	$ 343.9

(a) The six months ended June 30, 2019 include $0.6 million of charges related to the announced second quarter 2018 discontinuation of uncoated free sheet and coated one-side grades at the Wallula, Washington mill associated with the conversion of the No. 3 paper machine to a high-performance 100% virgin kraft linerboard machine.

(b) The three and six months ended June 30, 2018 include the following:

1. $0.2 million and $0.5 million, respectively, of charges consisting of closure costs related to corrugated products facilities and a corporate administration facility.
2. $13.6 million and $22.4 million, respectively, of charges related to the announced second quarter 2018 discontinuation of uncoated free sheet and coated one-side grades at the Wallula, Washington mill in preparation for the conversion of the No. 3 paper machine to a high-performance 100% virgin kraft linerboard machine.

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,	
	2019	2018	2019	2018
Net income	$ 193.6	$ 186.6	$ 380.4	$ 326.7
Non-operating pension expense	2.0	0.5	4.1	1.1
Interest expense, net	22.4	23.8	46.4	49.6
Income tax provision	62.4	58.7	124.9	105.1
Depreciation, amortization, and depletion	95.8	104.1	190.6	212.2
EBITDA	$ 376.2	$ 373.7	$ 746.4	$ 694.7
Special items:				
Wallula mill restructuring	—	8.6	0.4	9.3
Facilities closure and other costs	—	—	—	0.1
Total special items	—	8.6	0.4	9.4
EBITDA excluding special items	$ 376.2	$ 382.3	$ 746.8	$ 704.1

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,	
	2019	2018	2019	2018
Packaging				
Segment income	$ 263.9	$ 273.2	$ 513.4	$ 497.9
Depreciation, amortization, and depletion	84.7	84.5	168.8	167.7
EBITDA	348.6	357.7	682.2	665.6
Wallula mill restructuring	—	5.1	0.2	5.1
Facilities closure and other costs	—	—	—	0.1
EBITDA excluding special items	**$ 348.6**	**$ 362.8**	**$ 682.4**	**$ 670.8**
Paper				
Segment income	$ 38.8	$ 16.2	$ 84.4	$ 23.5
Depreciation, amortization, and depletion	9.4	18.0	18.5	41.3
EBITDA	48.2	34.2	102.9	64.8
Wallula mill restructuring	—	3.5	0.2	4.2
EBITDA excluding special items	**$ 48.2**	**$ 37.7**	**$ 103.1**	**$ 69.0**
Corporate and Other				
Segment loss	$ (22.3)	$ (19.8)	$ (42.0)	$ (38.9)
Depreciation, amortization, and depletion	1.7	1.6	3.3	3.2
EBITDA	(20.6)	(18.2)	(38.7)	(35.7)
EBITDA excluding special items	**$ (20.6)**	**$ (18.2)**	**$ (38.7)**	**$ (35.7)**
EBITDA	**$ 376.2**	**$ 373.7**	**$ 746.4**	**$ 694.7**
EBITDA excluding special items	**$ 376.2**	**$ 382.3**	**$ 746.8**	**$ 704.1**

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, 2019. For a discussion of derivatives and hedging activities, see Note 14, Derivative Instruments and Hedging Activities, of the Notes to Consolidated Financial Statements in "Part II, Item 8. Financial Statements and Supplementary Data" of our 2018 Annual Report on Form 10-K.

At June 30, 2019, interest rates on 100% of PCA's outstanding debt are fixed.

Off-Balance-Sheet Activities

The Company does not have any off-balance sheet arrangements as of June 30, 2019.

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 2018 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 2018 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 2019.

New and Recently Adopted Accounting Standards

For a listing of our new and recently adopted accounting standards, see Note 2, 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;
- 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, 2018.

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, 2019. 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, 2019.

PART II
OTHER INFORMATION

Item 1. *LEGAL PROCEEDINGS*

The disclosure set forth under the caption "Legal Proceedings" in Note 20, 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, 2018.

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, 2019:

Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased (a)	Average Price Paid Per Share	Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs	Approximate Dollar Value of Shares That May Yet Be Purchased Under the Plans or Programs (in millions)
April 1-30, 2019	—	$ —	—	$ 193.0
May 1-31, 2019	1,216	95.42	—	193.0
June 1-30, 2019	81,455	92.89	—	193.0
Total	82,671	$ 92.92	—	$ 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
10.1	Form of 2019 Executive Officer Restricted Stock Award. †
10.2	Form of 2019 Executive Officer Performance Unit Award – ROIC. †
10.3	Form of 2019 Executive Officer Performance Unit Award – TSR. †
31.1	Certification of Chief Executive Officer, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. †
31.2	Certification of Chief Financial Officer, as Adopted Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002. †
32	Certification of Chief Executive Officer and Chief Financial Officer Pursuant to 18 U.S.C. §1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. †
101.INS	XBRL Instance Document – the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document. †
101.SCH	XBRL Taxonomy Extension Schema Document. †
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document. †
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document. †
101.LAB	XBRL Taxonomy Extension Label Linkbase Document. †
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document. †

† Filed herewith.

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/ PAMELA A. BARNES

Pamela A. Barnes
Senior Vice President, Finance and Controller

Date: August 2, 2019

Exhibit 10.1

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

By this agreement, Packaging Corporation of America ("PCA" or the "Company") grants to **EMPLOYEE NAME** 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 28, 2019**
Number of Restricted Shares Awarded:	**XXX Shares**
***Fair Market Value at Grant*:**	**$XXX**
***Restriction Expires*:**	**June 28, 2023**

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 further subject to the Company's compensation recovery policy in effect from time to time.

Except as otherwise provided by the Board of Directors or the Compensation Committee of 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.

(iv) its forfeiture provisions, transfer restrictions and any other restrictions lapse upon the fourth anniversary of the original Grant Date; 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, Compensation & HR Systems, located in Lake Forest.

Accepted and Agreed:		**Packaging Corporation of America** BY:
EMPLOYEE NAME	Date	Kent Pflederer Senior Vice President, General Counsel and Secretary

Exhibit 10.2

PACKAGING CORPORATION OF AMERICA
AMENDED AND RESTATED 1999 LONG-TERM EQUITY INCENTIVE PLAN
PERFORMANCE UNIT AGREEMENT-ROIC

PARTICIPANT:	
DATE OF GRANT:	June 28, 2019
NUMBER OF PERFORMANCE UNITS:	
PERFORMANCE PERIOD:	2020-2022

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") 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.

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 and subject to paragraph 6 hereof, the Participant's Performance Units covered hereby may (to the extent not previously forfeited) vest as of the occurrence of a Vesting Date (as defined on Exhibit A). The terms and conditions of vesting, and the number of Shares to be paid out upon vesting, shall be as provided on Exhibit A.

5. Forfeiture Upon Separation from Service. Except as provided by the Company's Compensation Committee or the Board of Directors, upon the Participant's cessation of employment (or provision of other services as permitted under the Plan) prior to a Vesting Date for any reason, all Performance Units granted hereunder shall be forfeited.

6. Recovery of Unearned Compensation. The Performance Units are subject to the Company's compensation recovery policy applicable to executive officers as shall be in effect from time to time.

7. 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 as calculated as described in your Notice of Award.

8. 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.

9. Miscellaneous.

(a) Modification/ Binding Effect. The Committee may from time to time modify or amend this Agreement in accordance with the provisions of the Plan. 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, distributees and personal representatives. By signing this Agreement, the Participant acknowledges and expressly agrees that the Participant has read the Agreement and the Plan and agrees to their terms.

(b) No Right to Continued Employment. Nothing in the Plan or this Agreement shall interfere with or limit in any way the right of the Company or any of its Subsidiaries to terminate the Participant's employment at any time, or confer upon the Participant any right to continue in the employ of the Company or any of its Subsidiaries.

(c) Interpretation. The Committee shall have full power and discretion to construe and interpret the Plan (and any rules and regulations issued thereunder) and this Award. Any determination or interpretation by the Committee under or pursuant to the Plan or this Award shall be final and binding and conclusive on all persons affected hereby.

(d) Applicable Law. This Agreement shall be governed by and construed in accordance with the law of the State of Delaware regardless of the application of rules of conflict of law that would apply the laws of any other jurisdiction.

(e) Limitation on Rights; No Right to Future Grants; Extraordinary Item of Compensation. By entering into this Agreement and accepting the Performance Units evidenced hereby, the Participant acknowledges: (a) that the Plan is discretionary in nature and may be suspended or terminated by the Company at any time; (b) that the Award does not create any contractual or other right to receive future grants of Awards; (c) that participation in the Plan is voluntary; (d) that the value of the Performance Units is not part of normal or expected compensation for purposes of calculating any severance, resignation, redundancy, end of service payments, bonuses, long-service awards, pension or retirement benefits or similar payments; and (e) that the future value of the Stock is unknown and cannot be predicted with certainty.

(f) Employee Data Privacy. By entering into this Agreement and accepting the Performance Units evidenced hereby, the Participant: (a) authorizes the Company, any agent of the Company administering the Plan or providing Plan recordkeeping services, to disclose to the Company or any of its affiliates any information and data the Company requests in order to facilitate the grant of the Award and the administration of the Plan; (b) waives any data privacy rights the Participant may have with respect to such information; and (c) authorizes the Company and its agents to store and transmit such information in electronic form.

(g) Consent to Electronic Delivery. By entering into this Agreement and accepting the Performance Units evidenced hereby, Participant hereby consents to the delivery of information (including, without limitation, information required to be delivered to the Participant pursuant to applicable securities laws) regarding the Company and the Subsidiaries, the Plan, this Agreement and the Performance Units via Company web site or other electronic delivery.

(k) Headings and Captions. The section and other headings contained in this Agreement are for reference purposes only and shall not affect the meaning or interpretation of this Agreement.

(l) Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original and all of which together shall constitute one and the same instrument.

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: Kent Pfledere Kent Pflederer Senior Vice President, General Counsel and Secretary	**EMPLOYEE NAME**

Exhibit A

Vesting Provisions

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:* The Performance Criterion applicable to the award is return on invested capital, or "ROIC" as more fully described in your Notice of Award. 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 defined in your Notice of Award) 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 defined in your Notice of Award). The performance and payout scale is set forth in your Notice of Award.

Promptly after the end of the Performance Period, the Committee shall determine the Company's performance against the Peer Group and the number of Shares to be paid out upon vesting. If the Vesting Date occurs after the last day of the Performance Period, then you must continue to serve the Company through the Vesting Date (pursuant to Section 5 of this Award Agreement) as a condition to such Shares being paid out.

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 each case, as described below.

In the event of the Participant's death, the Vesting Date shall be the date of death, as the case may be; and the number of Shares to be paid out to such Participant shall equal to the number that would be paid out pursuant to paragraph 2 based upon performance through the end of the calendar year immediately preceding such death. If such death occurs prior to the end of the first full calendar year in the Performance Period, the number of Shares to be paid out shall equal 100% of the number of Performance Units.

In the event of termination on account of Disability prior to the fourth anniversary of the date of the Date of Grant, the Vesting Date will be the fourth anniversary of the Date of Grant and the number of Shares to be paid out will be determined pursuant to paragraph 2 based upon actual performance through the entire Performance Period.

---

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 the number that would be paid out pursuant to paragraph 2 based upon performance through the end of the calendar year immediately preceding such Change in Control. If such Change in Control occurs prior to the end of the first full calendar year in the Performance Period, the number of Shares to be paid out shall equal 100% of the number of Performance Units. The number of Shares to be paid out pursuant to a Change in Control as determined pursuant to the previous two sentences shall be defined as the "Change in Control Vest Amount." 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 the Change in Control Vest Amount;

(iii) it does not contain any performance goals and will be paid out at the Change in Control Vest Amount 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.

(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 the Change in Control Vest Amount, 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 10.3

PACKAGING CORPORATION OF AMERICA
AMENDED AND RESTATED 1999 LONG-TERM EQUITY INCENTIVE PLAN
PERFORMANCE UNIT AGREEMENT-TSR

PARTICIPANT:	
DATE OF GRANT:	June 28, 2019
NUMBER OF PERFORMANCE UNITS:	
PERFORMANCE PERIOD:	July 1, 2019 to June 30, 2022

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") 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.

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 and subject to paragraph 6 hereof, the Participant's Performance Units covered hereby may (to the extent not previously forfeited) vest as of the occurrence of a Vesting Date (as defined on Exhibit A). The terms and conditions of vesting, and the number of Shares to be paid out upon vesting, shall be as provided on Exhibit A.

5. Forfeiture Upon Separation from Service. Except as provided by the Company's Compensation Committee or the Board of Directors, upon the Participant's cessation of employment (or provision of other services as permitted under the Plan) prior to a Vesting Date for any reason, all Performance Units granted hereunder shall be forfeited.

6. Recovery of Unearned Compensation. The Performance Units are subject to the Company's compensation recovery policy applicable to executive officers as shall be in effect from time to time.

7. 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 as described in your Notice of Award.

8. 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.

8. Miscellaneous.

(a) Modification/ Binding Effect. The Committee may from time to time modify or amend this Agreement in accordance with the provisions of the Plan. 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, distributees and personal representatives. By signing this Agreement, the Participant acknowledges and expressly agrees that the Participant has read the Agreement and the Plan and agrees to their terms.

(b) No Right to Continued Employment. Nothing in the Plan or this Agreement shall interfere with or limit in any way the right of the Company or any of its Subsidiaries to terminate the Participant's employment at any time, or confer upon the Participant any right to continue in the employ of the Company or any of its Subsidiaries.

(c) Interpretation. The Committee shall have full power and discretion to construe and interpret the Plan (and any rules and regulations issued thereunder) and this Award. Any determination or interpretation by the Committee under or pursuant to the Plan or this Award shall be final and binding and conclusive on all persons affected hereby.

(d) Applicable Law. This Agreement shall be governed by and construed in accordance with the law of the State of Delaware regardless of the application of rules of conflict of law that would apply the laws of any other jurisdiction.

(e) Limitation on Rights; No Right to Future Grants; Extraordinary Item of Compensation. By entering into this Agreement and accepting the Performance Units evidenced hereby, the Participant acknowledges: (a) that the Plan is discretionary in nature and may be suspended or terminated by the Company at any time; (b) that the Award does not create any contractual or other right to receive future grants of Awards; (c) that participation in the Plan is voluntary; (d) that the value of the Performance Units is not part of normal or expected compensation for purposes of calculating any severance, resignation, redundancy, end of service payments, bonuses, long-service awards, pension or retirement benefits or similar payments; and (e) that the future value of the Stock is unknown and cannot be predicted with certainty.

(f) Employee Data Privacy. By entering into this Agreement and accepting the Performance Units evidenced hereby, the Participant: (a) authorizes the Company, any agent of the Company administering the Plan or providing Plan recordkeeping services, to disclose to the Company or any of its affiliates any information and data the Company requests in order to facilitate the grant of the Award and the administration of the Plan; (b) waives any data privacy rights the Participant may have with respect to such information; and (c) authorizes the Company and its agents to store and transmit such information in electronic form.

(g) Consent to Electronic Delivery. By entering into this Agreement and accepting the Performance Units evidenced hereby, Participant hereby consents to the delivery of information (including, without limitation, information required to be delivered to the Participant pursuant to applicable securities laws) regarding the Company and the Subsidiaries, the Plan, this Agreement and the Performance Units via Company web site or other electronic delivery.

(k) Headings and Captions. The section and other headings contained in this Agreement are for reference purposes only and shall not affect the meaning or interpretation of this Agreement.

(l) Counterparts. This Agreement may be executed in any number of counterparts, each of which shall be deemed to be an original and all of which together shall constitute one and the same instrument.

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: Kent Pflederer

Kent Pflederer
Senior Vice President, General Counsel and
Secretary

EMPLOYEE NAME

Exhibit A

Vesting Provisions

1. *Vesting Date.* Vesting Date means, with respect to the vesting of Performance Units pursuant to this Exhibit A, June 30, 2022, 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. *Performance Criterion:* The Performance Criterion applicable to the award is total shareholder return, or "TSR" as more fully described in your Notice of Award. 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 TSR over the Performance Period and compare such number against the TSRs for the companies included in the "Peer Group" defined in your Notice of Award. The performance and payout scale is set forth in your Notice of Award.

Promptly after the end of the Performance Period, and in any event, within 2 ½ months after the end of the Performance Period, the Committee shall determine the Company's performance against the Peer Group and the number of Shares to be paid out upon vesting.

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 June 30, 2022, in each case as provided below.

In the event of the Participant's death, the Vesting Date shall be the date of death, as the case may be; and the number of Shares to be paid out to such Participant shall equal to the number that would be paid out pursuant to paragraph 2 based upon performance through the date of death, multiplied by a fraction the numerator of which is the number of days elapsed in the Performance Period through and including the date of death and the denominator of which is the total number of days in the Performance Period.

In the event of termination on account of Disability prior to June 30, 2022, the Vesting Date will be June 30, 2022 and the number of Shares to be paid out will be determined pursuant to paragraph 2 based upon actual performance through the entire Performance Period multiplied by a fraction the numerator of which is the number of days elapsed in the Performance Period through and including the date of termination on account of Disability and the denominator of which is the total number of days in the Performance Period.

4. *Vesting Upon Change in Control.* Upon a Change in Control prior to June 30, 2022, 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 the number that would be paid out pursuant to paragraph 2 based upon performance through the date of the Change in Control. The number of Shares to be paid out pursuant to a Change in Control as determined pursuant to the previous two sentences shall be defined as the "Change in Control Vest Amount." 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 the Change in Control Vest Amount;

(iii) it does not contain any performance goals and will be paid out at the Change in Control Vest Amount subject only to continued service with the Company or its successor following the Change in Control through June 30, 2022.

(iv) its forfeiture provisions, transfer restrictions and any other restrictions lapse upon June 30, 2022; provided, however, that such restrictions will lapse, and the award will fully vest and be paid out at the Change in Control Vest Amount, 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 31.1

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

I, Mark W. Kowlzan, certify that:

(1) I have reviewed this 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 2, 2019

Exhibit 31.2

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

I, Robert P. Mundy, certify that:

(1) I have reviewed this 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
Executive Vice President and Chief Financial Officer

Date: August 2, 2019

Exhibit 32

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

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, 2019 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 2, 2019

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, 2019 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

Executive Vice President and Chief Financial Officer

Date: August 2, 2019