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 July 31, 2019

OR

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

Commission File Number 001-00566

PACKAGING SUCCESS TOGETHER™

GREIF INC.
(Exact name of registrant as specified in its charter)

Delaware	**31-4388903**
(State or other jurisdiction of incorporation or organization)	**(I.R.S. Employer Identification No.)**
425 Winter Road Delaware Ohio	**43015**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code (740) 549-6000

Not Applicable
Former name, former address and former fiscal year, if changed since last report.

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, a smaller reporting company, or an emerging growth company. See definitions of “large accelerated filer,” “accelerated filer,” “smaller reporting company,” and "emerging growth company" in Rule 12b-2 of the Exchange Act.

Large accelerated filer	☒	Accelerated filer	☐
Non-accelerated filer	☐	Smaller reporting company	☐
		Emerging growth company	☐

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

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

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

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
Class A Common Stock	GEF	New York Stock Exchange
Class B Common Stock	GEF-B	New York Stock Exchange

The number of shares outstanding of each of the issuer’s classes of common stock as of the close of business on August 26, 2019:

Class A Common Stock	26,257,943 shares
Class B Common Stock	22,007,725 shares

PART I. FINANCIAL INFORMATION

ITEM 1. CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

GREIF, INC. AND SUBSIDIARY COMPANIES
CONDENSED CONSOLIDATED STATEMENTS OF INCOME (UNAUDITED)

(in millions, except per share amounts)	Three Months Ended July 31, 2019	Three Months Ended July 31, 2018	Nine Months Ended July 31, 2019	Nine Months Ended July 31, 2018
Net sales	$ 1,252.6	$ 1,012.1	$ 3,362.9	$ 2,886.1
Cost of products sold	973.2	795.0	2,662.0	2,302.0
Gross profit	279.4	217.1	700.9	584.1
Selling, general and administrative expenses	138.9	99.4	377.0	305.7
Restructuring charges	9.1	3.7	20.3	13.8
Acquisition-related costs	5.8	0.5	22.2	0.7
Non-cash asset impairment charges	—	0.8	2.1	4.1
Gain on disposal of properties, plants and equipment, net	(1.3)	(1.4)	(7.1)	(7.5)
Loss on disposal of businesses, net	1.3	0.1	3.0	0.1
Operating profit	125.6	114.0	283.4	267.2
Interest expense, net	34.5	12.1	80.1	38.4
Non-cash pension settlement charges	—	0.4	—	0.4
Debt extinguishment charges	0.1	—	22.0	—
Other (income) expense, net	(1.1)	4.8	1.0	15.0
Income before income tax expense and equity earnings of unconsolidated affiliates, net	92.1	96.7	180.3	213.4
Income tax expense	26.8	25.7	58.3	31.2
Equity earnings of unconsolidated affiliates, net of tax	(2.2)	(1.0)	(2.4)	(1.8)
Net income	67.5	72.0	124.4	184.0
Net income attributable to noncontrolling interests	(4.8)	(4.3)	(18.4)	(14.7)
Net income attributable to Greif, Inc.	$ 62.7	$ 67.7	$ 106.0	$ 169.3
Basic earnings per share attributable to Greif, Inc. common shareholders:				
Class A common stock	$ 1.06	$ 1.15	$ 1.80	$ 2.88
Class B common stock	$ 1.59	$ 1.72	$ 2.68	$ 4.31
Diluted earnings per share attributable to Greif, Inc. common shareholders:				
Class A common stock	$ 1.06	$ 1.15	$ 1.80	$ 2.88
Class B common stock	$ 1.59	$ 1.72	$ 2.68	$ 4.31
Weighted-average number of Class A common shares outstanding:				
Basic	26.3	25.9	26.2	25.9
Diluted	26.3	25.9	26.2	25.9
Weighted-average number of Class B common shares outstanding:				
Basic	22.0	22.0	22.0	22.0
Diluted	22.0	22.0	22.0	22.0
Cash dividends declared per common share:				
Class A common stock	$ 0.44	$ 0.42	$ 1.32	$ 1.26
Class B common stock	$ 0.66	$ 0.63	$ 1.97	$ 1.88

See accompanying Notes to Condensed Consolidated Financial Statements

GREIF, INC. AND SUBSIDIARY COMPANIES
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS) (UNAUDITED)

	Three Months Ended July 31,		Nine Months Ended July 31,	
(in millions)	2019	2018	2019	2018
Net income	$ 67.5	$ 72.0	$ 124.4	$ 184.0
Other comprehensive income (loss), net of tax:				
Foreign currency translation	(0.9)	(35.9)	(10.4)	(23.8)
Derivative financial instruments	(5.0)	2.2	(20.7)	7.5
Minimum pension liabilities	2.3	15.6	2.2	17.4
Other comprehensive income (loss), net of tax	(3.6)	(18.1)	(28.9)	1.1
Comprehensive income	63.9	53.9	95.5	185.1
Comprehensive income attributable to noncontrolling interests	6.1	1.0	18.7	11.8
Comprehensive income attributable to Greif, Inc.	$ 57.8	$ 52.9	$ 76.8	$ 173.3

See accompanying Notes to Condensed Consolidated Financial Statements

GREIF, INC. AND SUBSIDIARY COMPANIES
CONDENSED CONSOLIDATED BALANCE SHEETS (UNAUDITED)

(in millions)	July 31, 2019	October 31, 2018
ASSETS		
Current assets		
Cash and cash equivalents	$ 75.8	$ 94.2
Trade accounts receivable, less allowance of $7.3 in 2019 and $4.2 in 2018	720.3	456.7
Inventories:		
Raw materials	274.0	203.9
Work-in-process	12.9	10.0
Finished goods	126.6	75.6
Assets held for sale	2.8	4.4
Prepaid expenses	50.2	39.8
Other current assets	79.2	92.1
	1,341.8	976.7
Long-term assets		
Goodwill	1,561.9	776.0
Other intangible assets, net of amortization	794.3	80.6
Deferred tax assets	15.3	7.9
Assets held by special purpose entities	50.9	50.9
Pension asset	12.1	10.4
Other long-term assets	98.1	100.4
	2,532.6	1,026.2
Properties, plants and equipment		
Timber properties, net of depletion	272.5	274.2
Land	178.9	96.4
Buildings	527.8	431.4
Machinery and equipment	1,907.7	1,554.9
Capital projects in progress	168.2	117.2
	3,055.1	2,474.1
Accumulated depreciation	(1,377.1)	(1,282.2)
	1,678.0	1,191.9
Total assets	$ 5,552.4	$ 3,194.8

See accompanying Notes to Condensed Consolidated Financial Statements

GREIF, INC. AND SUBSIDIARY COMPANIES
CONDENSED CONSOLIDATED BALANCE SHEETS (UNAUDITED)

(in millions)	July 31, 2019	October 31, 2018
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities		
Accounts payable	$ 458.5	$ 403.8
Accrued payroll and employee benefits	125.9	114.4
Restructuring reserves	11.4	4.4
Current portion of long-term debt	83.7	18.8
Short-term borrowings	8.8	7.3
Other current liabilities	148.7	121.5
	837.0	670.2
Long-term liabilities		
Long-term debt	2,786.0	884.1
Deferred tax liabilities	347.4	179.8
Pension liabilities	134.7	78.0
Postretirement benefit obligations	10.8	10.7
Liabilities held by special purpose entities	43.3	43.3
Contingent liabilities and environmental reserves	18.9	6.8
Mandatorily redeemable noncontrolling interests	8.4	8.6
Long-term income tax payable	44.0	46.1
Other long-term liabilities	123.8	77.5
	3,517.3	1,334.9
Commitments and contingencies (Note 13)		
Redeemable noncontrolling interests (Note 17)	22.5	35.5
Equity		
Common stock, without par value	162.6	150.5
Treasury stock, at cost	(134.8)	(135.4)
Retained earnings	1,499.1	1,469.8
Accumulated other comprehensive income (loss), net of tax:		
Foreign currency translation	(303.5)	(292.8)
Derivative financial instruments	(7.3)	13.4
Minimum pension liabilities	(95.5)	(97.7)
Total Greif, Inc. shareholders' equity	1,120.6	1,107.8
Noncontrolling interests	55.0	46.4
Total shareholders' equity	1,175.6	1,154.2
Total liabilities and shareholders' equity	$ 5,552.4	$ 3,194.8

See accompanying Notes to Condensed Consolidated Financial Statements

GREIF, INC. AND SUBSIDIARY COMPANIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS (UNAUDITED)

Nine Months Ended July 31, *(in millions)*	**2019**	**2018**
Cash flows from operating activities:		
Net income	$ 124.4	$ 184.0
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation, depletion and amortization	146.8	96.5
Non-cash asset impairment charges	2.1	4.1
Non-cash pension settlement charges	—	0.4
Gain on disposals of properties, plants and equipment, net	(7.1)	(7.5)
Loss on disposals of businesses, net	3.0	0.1
Unrealized foreign exchange loss	2.6	1.2
Deferred income tax benefit	(12.7)	(69.6)
Transition tax expense	2.4	35.9
Debt extinguishment charges	14.0	—
Other, net	5.4	(1.5)
Increase (decrease) in cash from changes in certain assets and liabilities:		
Trade accounts receivable	5.5	(35.6)
Inventories	(20.8)	(60.7)
Deferred purchase price on sold receivables	(6.9)	(32.3)
Accounts payable	(37.2)	24.0
Restructuring reserves	7.0	—
Pension and postretirement benefit liabilities	(10.7)	(70.6)
Other, net	(23.7)	(12.6)
Net cash provided by operating activities	194.1	55.8
Cash flows from investing activities:		
Acquisitions of companies, net of cash acquired	(1,857.9)	—
Purchases of properties, plants and equipment	(103.8)	(92.0)
Purchases of and investments in timber properties	(4.1)	(6.6)
Proceeds from the sale of properties, plants, equipment and other assets	13.8	11.5
Proceeds from the sale of businesses	3.9	1.4
Proceeds from insurance recoveries	0.2	—
Net cash used in investing activities	(1,947.9)	(85.7)
Cash flows from financing activities:		
Proceeds from issuance of long-term debt	3,470.7	784.6
Payments on long-term debt	(1,577.8)	(706.2)
Payments on current portion of long-term debt	(18.9)	—
Proceeds on short-term borrowings, net	3.3	—
Payments on short-term borrowings, net	—	(8.9)
Proceeds from trade accounts receivable credit facility	59.0	2.8
Payments on trade accounts receivable credit facility	(59.4)	(2.8)
Dividends paid to Greif, Inc. shareholders	(77.9)	(74.0)
Dividends paid to noncontrolling interests	(9.2)	(4.5)
Payments for debt extinguishment and issuance costs	(44.1)	—
Purchases of redeemable noncontrolling interest	(11.9)	—
Cash contribution from noncontrolling interest holder	1.6	—
Net cash provided (used) by financing activities	1,735.4	(9.0)
Effects of exchange rates on cash	—	(2.5)
Net decrease in cash and cash equivalents	(18.4)	(41.4)
Cash and cash equivalents at beginning of period	94.2	142.3
Cash and cash equivalents at end of period	$ 75.8	$ 100.9

See accompanying Notes to Condensed Consolidated Financial Statements

GREIF, INC. AND SUBSIDIARY COMPANIES
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS (UNAUDITED)

NOTE 1 — BASIS OF PRESENTATION AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Basis of Presentation

The interim condensed consolidated financial statements have been prepared in accordance with the U.S. Securities and Exchange Commission ("SEC") instructions to Quarterly Reports on Form 10-Q and include all of the information and disclosures required by accounting principles generally accepted in the United States ("GAAP") for interim financial reporting. The preparation of financial statements in conformity with GAAP requires management to make certain estimates and assumptions that affect the amounts reported in the interim condensed consolidated financial statements and accompanying notes. Actual amounts could differ from those estimates.

The fiscal year of Greif, Inc. and its subsidiaries (the "Company") begins on November 1 and ends on October 31 of the following year. Any references to the year 2019 or 2018, or to any quarter of those years, relates to the fiscal year or quarter, as the case may be, ended in that year, unless otherwise stated.

The information filed herein reflects all adjustments that are, in the opinion of management, necessary for a fair presentation of the interim condensed consolidated balance sheets as of July 31, 2019 and October 31, 2018, the interim condensed consolidated statements of income and comprehensive income for the three and nine months ended July 31, 2019 and 2018 and the interim condensed consolidated statements of cash flows for the nine months ended July 31, 2019 and 2018 of the Company. The interim condensed consolidated financial statements include the accounts of Greif, Inc., all wholly-owned and consolidated subsidiaries and investments in limited liability companies, partnerships and joint ventures in which it has controlling influence or is the primary beneficiary. Non-majority owned entities include investments in limited liability companies, partnerships and joint ventures in which the Company does not have controlling influence and are accounted for using either the equity or cost method, as appropriate.

The unaudited interim condensed consolidated financial statements included in the Quarterly Report on Form 10-Q (this "Form 10-Q") should be read in conjunction with the consolidated financial statements and notes thereto included in the Company's Annual Report on Form 10-K for its fiscal year ended October 31, 2018 (the "2018 Form 10-K").

Newly Adopted Accounting Standards

In May 2014, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2014-09, "Revenue from Contracts with Customers (Topic 606)," which supersedes the revenue recognition requirements in ASC 605, "Revenue Recognition." This new revenue standard introduces a five-step revenue recognition model in which an entity should recognize revenue to depict the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled to in exchange for those goods or services. The new revenue standard also requires additional disclosure about the nature, amount, timing and uncertainty of revenue and cash flows arising from customer contracts, including significant judgments and changes in judgments and assets recognized from costs incurred to obtain or fulfill a contract. The Company adopted the ASU, and all of the related amendments, using the modified retrospective method on November 1, 2018. The adoption of the ASU and related amendments did not impact the Company's financial position, results of operations, comprehensive income, cash flows or disclosures, other than as discussed in this paragraph and disclosed within Note 2 to the interim condensed consolidated financial statements. Additionally, no cumulative effect adjustment was recorded to opening retained earnings as of November 1, 2018. Based on current operations, the Company does not expect a material impact on an ongoing basis as a result of the adoption of the new standard. See Note 2 to the interim condensed consolidated financial statements for additional disclosures related to revenue from contracts with customers.

In August of 2016, the FASB issued ASU 2016-15, "Statement of Cash Flows (Topic 230)," which amends the classification of certain cash receipts and cash payments on the statement of cash flows. This update clarifies guidance on eight specific cash flow items. The ASU requires the beneficial interests obtained through securitization of financial assets be disclosed as a non-cash activity and cash receipts from beneficial interests be classified as cash inflows from investing activities. Under previous guidance, the Company classified cash receipts from beneficial interests in securitized receivables and cash payments resulting from debt prepayment or extinguishment as cash flows from operating activities. The amendments in this update are required to be applied using a retrospective approach, excluding amendments for which retrospective application is impractical. On November 1, 2018, the Company adopted the provisions of ASU 2016-15 on a retrospective basis with the exception of the Company's beneficial interests obtained through securitization of financial assets, for which the Company adopted this update on a prospective basis due to the impracticality of the retrospective basis. The adoption of this update did not have a material impact on the Company's financial position, results of operations, comprehensive income, cash flows or disclosures for the periods presented.

In October 2016, the FASB issued ASU 2016-16, "Intra-Entity Transfers of Assets Other Than Inventory (Topic 740)," which improves the accounting for income tax consequences of intra-entity transfers of assets other than inventory. This update requires transferring entities to recognize a current tax expense or benefit at the time of transfer and receiving entities to recognize a corresponding deferred tax asset or liability. The Company adopted this standard on November 1, 2018 using a modified retrospective approach. The adoption of this update resulted in a reclassification of approximately $15.1 million from "Prepaid Tax Assets" to "Retained Earnings", offset by the establishment of a deferred tax asset of $13.0 million for a net impact on retained earnings of $2.1 million as of November 1, 2018. The adoption did not have a material impact on the Company's financial position, results of operations, comprehensive income, cash flows or disclosures, other than the impact discussed above.

In January 2017, the FASB issued ASU 2017-01, "Clarifying the Definition of a Business," which narrows the existing definition of a business and provides a framework for evaluating whether a transaction should be accounted for as an acquisition (or disposal) of assets or a business. The ASU requires an entity to evaluate if substantially all of the fair value of the gross assets acquired is concentrated in a single identifiable asset or a group of similar identifiable assets; if so, the set of transferred assets and activities (collectively, the set) is not a business. To be considered a business, the set would need to include an input and a substantive process that together significantly contribute to the ability to create outputs. The standard also narrows the definition of outputs. The definition of a business affects areas of accounting such as acquisitions, disposals and goodwill. Under the new guidance, fewer acquired sets are expected to be considered businesses. The Company adopted this standard effective November 1, 2018 on a prospective basis. The Company applied this guidance to its respective acquisitions of Caraustar Industries, Inc. and its subsidiaries ("Caraustar") and Tholu B.V. and its wholly owned subsidiary A. Thomassen Transport B.V. (collectively "Tholu"), which qualified as business combinations. See Note 3 to the interim condensed consolidated financial statements for additional disclosures related to these acquisitions. The adoption did not have a material impact on the Company's financial position, results of operations, comprehensive income, cash flows or disclosures, other than the impact discussed above.

Recently Issued Accounting Standards

In February 2016, the FASB issued ASU 2016-02, "Leases (Topic 842)," which amends the lease accounting and disclosure requirements in ASC 840, "Leases." The objective of this update is to increase transparency and comparability among organizations recognizing lease assets and lease liabilities on the balance sheet and disclosing key information about lease arrangements. This ASU will require the recognition of lease assets and lease liabilities for those leases classified as operating leases under previous GAAP. In July 2018, the FASB issued ASU 2018-11, "Leases (Topic 842): Targeted Improvements (ASU 2018-11)," which permits companies to initially apply the new leases standard at the adoption date and not restate periods prior to adoption. The Company plans to adopt ASU 2018-11 on November 1, 2019, and as a result, will not adjust its comparative period financial information or make the new required lease disclosures for periods before the effective date. The Company is currently in the process of collecting and evaluating all of its leases, which primarily consist of equipment and real estate leases, as well as implementing a technology tool to assist with the accounting and reporting requirements of the new standard. The Company also plans to update its processes and controls around leases. The Company will adopt the standard effective November 1, 2019 and expects to elect certain available transitional practical expedients. The Company is in the process of determining the potential impact of adopting this guidance on its financial position, results of operations, comprehensive income, cash flows and disclosures, but does expect to recognize a significant liability and corresponding asset associated with in-scope operating leases.

NOTE 2 — REVENUE

The Company generates substantially all of its revenue by providing its customers with industrial packaging products serving a variety of end markets. The Company may enter into fixed term sale agreements, including multi-year master supply agreements which outline the terms under which the Company does business. The Company also sells to certain customers solely based on purchase orders. As master supply agreements do not typically include fixed volumes, customers generally purchase products pursuant to purchase orders or other communications that are short-term in nature. The Company has concluded for the vast majority of its revenues, that its contracts with customers are either a purchase order or the combination of a purchase order with a master supply agreement.

A performance obligation is considered an individual unit sold. Contracts or purchase orders with customers could include a single type of product or it could include multiple types or specifications of products. Regardless, the contracted price with the customer is agreed at the individual product level outlined in the customer contracts or purchase orders. The Company does not bundle prices. Negotiations with customers are based on a variety of factors including the level of anticipated contractual volume, geographic location, complexity of the product, key input costs and a variety of other factors. The Company has concluded that prices negotiated with each individual customer are representative of the stand-alone selling price of the product.

The Company typically satisfies the obligation to provide packaging to customers at a point in time when control is transferred to customers. The point in time when control of goods is transferred is largely dependent on delivery terms. Revenue is recorded at the time of shipment for delivery terms designated shipping point. For sales transactions designated destination, revenue is recorded when the product is delivered to the customer’s delivery site. Purchases by the Company’s customers are generally manufactured and shipped with minimal lead time; therefore, performance obligations are generally settled shortly after manufacturing and shipment.

The Company manufactures certain products that have no alternative use to the Company once they are printed or manufactured to customer specifications; however, in the majority of cases, the Company does not have an enforceable right to payment that includes a reasonable profit for custom products at all times in the manufacturing process, and therefore revenue is recognized at the point in time at which control transfers. As revenue recognition is dependent upon individual contractual terms, the Company will continue its evaluation of any new or amended contracts entered into.

Revenue is measured as the amount of consideration the Company expects to be entitled to in exchange for transferring goods or providing services. Standalone selling prices for each performance obligation are generally stated in the contract. When the Company offers variable consideration in the form of volume rebates to customers, it estimates the amount of revenue to which it is expected to be entitled to based on contract terms and historical experience of actual results, and includes the estimate in the transaction price, limited to the amount which is probable will not result in reversal of cumulative revenue recognized when the variable consideration is resolved. The Company provides prompt pay discounts to certain customers if invoices are paid within a predetermined period. Prompt payment discounts are treated as a reduction of revenue and are determinable within a short period of the sale.

Contract Balances

Contract liabilities relate primarily to prepayments received from the Company’s customers before revenue is recognized and before volume rebates to customers. These amounts are included in other current liabilities in the interim condensed consolidated balance sheets. The Company does not have any material contract assets.

Practical Expedients

The Company’s contracts generally include standard commercial payment terms generally acceptable in each region. Customer payment terms are typically less than one year and as such, the Company has applied the practical expedient to exclude consideration of significant financing components from the determination of transaction price.

Taxes collected from customers and remitted to governmental authorities are excluded from net sales.

Costs to obtain a contract are generally immaterial, but the Company has elected the practical expedient to expense these costs as incurred if the amortization period of the capitalized cost would be one year or less.

The Company has applied the practical expedient to exclude disclosure of remaining performance obligations as the Company's contracts typically have a term of one year or less.

Freight charged to customers is included in net sales in the income statement. For shipping and handling activities performed after a customer obtains control of the goods, the Company has elected to account for these costs as activities to fulfill the promise to transfer the goods; therefore, these activities are not assessed as separate performance obligations.

Disaggregation of Revenues

The Company's contracts with customers are broadly similar in nature throughout its reportable segments, but the amount, timing and uncertainty of revenue and cash flows may vary in each reportable segment due to geographic factors. See Note 16 to the interim condensed consolidated financial statements for additional disclosures of revenue disaggregated by geography for each reportable segment.

NOTE 3— ACQUISITIONS AND DIVESTITURES

Acquisitions

The Company accounts for acquisitions in accordance with ASC 805, "Business Combinations". The estimated fair values of all assets acquired and liabilities assumed in the acquisitions are provisional and may be revised as a result of additional information obtained during the measurement period of up to one year from the acquisition date.

Tholu Acquisition

On June 11, 2019, the Company completed its acquisition of Tholu (the "Tholu Acquisition"). Tholu is a Netherlands-based leader in IBC rebottling, reconditioning and distribution.

The total purchase price for this acquisition, net of cash acquired was $52.2 million, of which $25.1 million was paid upon closing and the remaining $29.2 million was deferred according to a set payment schedule. The current portion of the deferred obligation is $2.5 million, recorded in Other Current Liabilities, and the remaining $26.7 million has been recorded in Other Long-Term Liabilities within the condensed consolidated balance sheets. The legal form of the Tholu Acquisition is a joint venture with the former Tholu owner, but due to the economic structure of the transaction the Company is deemed to be the 100% economic owner and, under GAAP the Company will record and report 100% of all future income or loss.

The following table summarizes the consideration transferred to acquire Tholu and the preliminary valuation of identifiable assets acquired and liabilities assumed at the acquisition date:

(in millions)		Initial Purchase Price Allocation
Fair value of consideration transferred		
Cash consideration	$	25.1
Deferred payments		29.2
Cash received	$	(2.1)
Total consideration	$	52.2
Recognized amounts of identifiable assets acquired and liabilities assumed		
Accounts receivable		7.3
Inventories		3.0
Intangibles		24.1
Properties, plants and equipment		6.4
Other assets		1.2
Total assets acquired		42.0
Accounts payable		(4.0)
Capital lease obligations		(1.7)
Long-term deferred tax liability		(5.4)
Other liabilities		(1.0)
Total liabilities assumed		(12.1)
Total identifiable net assets	$	29.9
Goodwill	$	22.3

The Company recognized goodwill related to this acquisition of $22.3 million. The goodwill recognized in this acquisition is attributable to the acquired assembled workforce, economies of scale, vertical integration and new market penetration. Tholu is reported within the Rigid Industrial Packaging & Services segment to which the goodwill was assigned. The goodwill is not expected to be deductible for tax purposes.

Acquired property, plant and equipment will be depreciated over its estimated remaining useful lives on a straight-line basis.

Acquired intangible assets will be amortized over the estimated useful lives, primarily on a straight-line basis. The following table summarizes the preliminary purchase price allocation and weighted average remaining useful lives for identifiable intangible assets acquired:

(in millions)	Preliminary Fair Value	Weighted Average Estimated Useful Life
Customer relationships	$ 21.9	15.0
Trademarks	1.2	9.0
Other	1.0	2.0
Total intangible assets	$ 24.1	

The Company has not yet finalized the determination of the fair value of assets acquired and liabilities assumed, including income taxes and contingencies. The Company expects to finalize these amounts within one year of the acquisition date. The current preliminary estimate of fair value and purchase price allocation were based on information available at the time of closing the acquisition, and the Company continues to evaluate the underlying inputs and assumptions that are being used in fair value estimates. Accordingly, these preliminary estimates are subject to adjustments during the measurement period, not to exceed one year, based upon new information obtained about facts and circumstances that existed as of the date of closing the acquisition.

Caraustar Acquisition

On February 11, 2019, the Company completed its acquisition of Caraustar (the "Caraustar Acquisition"), a leader in the production of uncoated recycled paperboard and coated recycled paperboard, with a variety of applications that include tubes and cores and a diverse mix of specialty products. The total purchase price for this acquisition, net of cash acquired, was $1,834.9 million. The Company incurred transaction costs of $62.1 million to complete this acquisition. Of this amount, $34.0 million was recognized immediately in the condensed consolidated statements of income and the remaining $28.1 million in transaction costs was capitalized in accordance with ASC 470, "Debt", and is presented as part of the condensed consolidated balance sheet ($18.7 million within Long-Term Debt and $9.4 million within Other Long-Term Assets).

The following table summarizes the consideration transferred to acquire Caraustar and the current preliminary valuation of identifiable assets acquired and liabilities assumed at the acquisition date, as well as adjustments made during the three months ended July 31, 2019.

(in millions)	Amounts Recognized as of the Acquisition Date	Measurement Period Adjustments (1)	Amount Recognized as of Acquisition Date (as Adjusted)
Fair value of consideration transferred			
Cash consideration	$ 1,834.9	$ —	$ 1,834.9
Recognized amounts of identifiable assets acquired and liabilities assumed			
Accounts receivable	147.0	—	147.0
Inventories	103.9	(1.2)	102.7
Prepaid and other current assets	21.5	(0.5)	21.0
Intangibles	717.1	8.4	725.5
Other long-term assets	1.3	0.5	1.8
Properties, plants and equipment	521.3	(11.3)	510.0
Total assets acquired	1,512.1	(4.1)	1,508.0
Accounts payable	(99.5)	—	(99.5)
Accrued payroll and employee benefits	(42.9)	—	(42.9)
Other current liabilities	(21.8)	(0.7)	(22.5)
Long-term deferred tax liability	(185.7)	0.8	(184.9)
Pension and postretirement obligations	(67.1)	—	(67.1)
Other long-term liabilities	(12.7)	(12.9)	(25.6)
Total liabilities assumed	(429.7)	(12.8)	(442.5)
Total identifiable net assets	$ 1,082.4	$ (16.9)	$ 1,065.5
Goodwill	$ 752.5	$ 16.9	$ 769.4

(1) The measurement adjustments were primarily due to refinement to third party appraisals and carrying amounts of certain assets and liabilities, as well as adjustments to certain tax accounts based on, among other things, adjustments to deferred tax liabilities. The net impact of the measurement period adjustments resulted in a net $16.9 million increase to Goodwill. The measurement adjustments recorded in 2019 did not have a significant impact on our condensed consolidated statements of income for the three and nine months ended July 31, 2019.

The Company recognized goodwill related to this acquisition of $769.4 million. The goodwill recognized in this acquisition is attributable to the acquired assembled workforce, expected synergies, and economies of scale, none of which qualify for recognition as a separate intangible asset. Caraustar is reported within the Paper Packaging & Services segment to which the goodwill was assigned. The goodwill is not expected to be deductible for tax purposes.

Acquired property, plant and equipment will be depreciated over its estimated remaining useful lives on a straight-line basis.

The fair value for acquired customer relationship intangibles was determined as of the acquisition date based on estimates and judgments regarding expectations for the future after-tax cash flows arising from the follow-on revenue from customer relationships that existed on the acquisition date over their estimated lives, including the probability of expected future contract renewals and revenue, less a contributory assets charge, all of which is discounted to present value. The fair value of the trade name intangible assets were determined utilizing the relief from royalty method which is a form of the income approach. Under this method, a royalty rate based on observed market royalties is applied to projected revenue supporting the trade names and discounted to present value using an appropriate discount rate.

Acquired intangible assets will be amortized over the estimated useful lives, primarily on a straight-line basis. The following table summarizes the current preliminary purchase price allocation and weighted average remaining useful lives for identifiable intangible assets acquired:

(in millions)	Current Preliminary Purchase Price Allocation	Weighted Average Estimated Useful Life
Customer relationships	$ 708.0	15.0
Trademarks	15.0	3.0
Other	2.5	4.6
Total intangible assets	$ 725.5	

Caraustar's results of operations have been included in the Company's financial statements for the period subsequent to the acquisition date of February 11, 2019. Caraustar contributed net sales of $320.3 million and $613.7 million for the three and nine months ended July 31, 2019, respectively.

The following unaudited supplemental pro forma data presents consolidated information as if the acquisition had been completed on November 1, 2017. These amounts were calculated after adjusting Caraustar's results to reflect interest expense incurred on the debt to finance the acquisition, additional depreciation and amortization that would have been charged assuming the fair value of property, plant and equipment and intangible assets had been applied from November 1, 2017, the adjusted tax expense, and related transaction costs of $34.0 million. These adjustments also include an additional charge of $9.0 million in the nine month period ended July 31, 2018 for the fair value adjustment for inventory acquired.

	Three Months Ended July 31,		Nine Months Ended July 31,	
(in millions, except per share amounts)	2019	2018	2019	2018
Pro forma net sales	$ 1,252.6	$ 1,367.3	$ 3,726.6	$ 3,897.9
Pro forma net (loss) income attributable to Greif, Inc.	$ 62.7	$ 70.2	$ 90.8	$ 114.8
Basic earnings per share attributable to Greif, Inc. common shareholders:				
Class A common stock	$ 1.06	$ 1.19	$ 1.54	$ 1.95
Class B common stock	$ 1.59	$ 1.79	$ 2.30	$ 2.92
Diluted earnings per share attributable to Greif, Inc. common shareholders:				
Class A common stock	$ 1.06	$ 1.19	$ 1.54	$ 1.95
Class B common stock	$ 1.59	$ 1.79	$ 2.30	$ 2.92

The unaudited supplemental pro forma financial information is based on the Company's preliminary assignment of purchase price and therefore subject to adjustment upon finalizing the purchase price assignment. The pro forma data should not be considered indicative of the results that would have occurred if the acquisition and related financing had been consummated on the assumed completion dates, nor are they indicative of future results. The pro forma results do not include the Tholu Acquisition, as the impact of this acquisition is not material to prior year results of operations.

Divestitures

For the nine months ended July 31, 2019, the Company completed two divestitures of non-U.S. businesses in the Rigid Industrial Packaging & Services segment, liquidated one non-strategic non-U.S. business in the Rigid Industrial Packaging & Services segment, and deconsolidated one wholly-owned non-U.S. business in the Rigid Industrial Packaging & Services segment. The loss on disposal of businesses was $3.0 million for the nine months ended July 31, 2019. Proceeds from divestitures that were completed in fiscal year 2015 and collected during the nine months ended July 31, 2019 were $0.8 million. Proceeds from divestitures that were completed in fiscal year 2016 and collected during the nine months ended July 31, 2019 were $1.6 million.

For the nine months ended July 31, 2018 , the Company completed no divestitures. Proceeds from divestitures that were completed in fiscal year 2017 and collected during the nine months ended July 31, 2018 were $0.5 million. Proceeds from divestitures that were completed in fiscal year 2015 and collected during the nine months ended July 31, 2018 were $0.9 million. The Company had $2.9 million of notes receivable recorded from the sale of businesses.

None of the above-referenced divestitures in 2019 or 2018 qualified as discontinued operations as they do not, individually or in the aggregate, represent a strategic shift that has had a major impact on the Company's operations or financial results.

NOTE 4 — SALE OF NON-UNITED STATES ACCOUNTS RECEIVABLE

In 2012, Cooperage Receivables Finance B.V. (the “Main SPV”) and Greif Coordination Center BVBA, an indirect wholly owned subsidiary of Greif, Inc. (“Seller”), entered into the Nieuw Amsterdam Receivables Purchase Agreement (the “European RPA”) with affiliates of a major international bank (the “Purchasing Bank Affiliates”). On April 17, 2019, the Main SPV and Seller amended and extended the term of the existing European RPA through April 17, 2020. On June 17, 2019, the Main SPV and Seller entered into an agreement to replace the European RPA with the Nieuw Amsterdam Receivables Financing Agreement (the "European RFA"). The European RFA provides an accounts receivable financing facility of up to €100.0 million ($111.4 million as of July 31, 2019) secured by certain European accounts receivable. The $106.4 million outstanding on the European RFA as of July 31, 2019 is reported as long-term debt in the interim condensed consolidated balance sheet because the Company intends to refinance these obligations on a long-term basis and has the intent and ability to consummate a long-term refinancing by exercising the renewal option in the respective agreement or entering into new financing arrangements.

During the first quarter of 2019, a parent-level guarantee was added to the European RPA and Singapore RPA (as such term is defined below). During the third quarter of 2019, in conjunction with execution of the European RFA, the parent level guarantee was removed for the European RFA. The $4.9 million outstanding on the Singapore RPA as of July 31, 2019 is reported as long-term debt in the interim condensed consolidated balance sheet because the Company intends to refinance these obligations on a long-term basis and has the intent and ability to consummate a long-term refinancing by exercising the renewal option in the respective agreement or entering into new financing arrangements.

Under the previous European RPA, as amended, the maximum amount of receivables that could be sold and outstanding under the European RPA at any time was €100 million ($111.4 million as of July 31, 2019). Under the terms of the European RPA, the Company had the ability to loan excess cash to the Purchasing Bank Affiliates in the form of the subordinated loan receivable.

Under the terms of the previous European RPA, the Company had agreed to sell trade receivables meeting certain eligibility requirements that the Seller had purchased from other indirect wholly-owned subsidiaries of the Company under a factoring agreement. Prior to November 1, 2018, the structure of the transactions provided for a legal true sale, on a revolving basis, of the receivables transferred from the Company's various subsidiaries to the respective Purchasing Bank Affiliates. The purchaser funded an initial purchase price of a certain percentage of eligible receivables based on a formula, with the initial purchase price approximating 75 percent to 90 percent of eligible receivables. The remaining deferred purchase price was settled upon collection of these receivables.

In October 2007, Greif Singapore Pte. Ltd., an indirect wholly-owned subsidiary of Greif, Inc., entered into the Singapore Receivable Purchase Agreement (the “Singapore RPA”) with a major international bank. The maximum amount of aggregate receivables that may be financed under the Singapore RPA is 15.0 million Singapore Dollars ($10.9 million as of July 31, 2019).

Under the terms of the Singapore RPA, the Company has agreed to sell trade receivables in exchange for an initial purchase price of approximately 90 percent of the eligible receivables. The remaining deferred purchase price is settled upon collection of those receivables.

Prior to November 1, 2018, the Company removed from accounts receivable the amount of proceeds received from the initial purchase price since they met the applicable criteria of ASC 860, "Transfers and Servicing," and the Company continued to recognize the deferred purchase price in other current assets or other current liabilities on the Company's interim condensed consolidated balance sheets, as appropriate. The receivables were sold on a non-recourse basis with the total funds in the servicing collection accounts pledged to the banks between settlement dates. The cash initially received, along with the deferred purchase price, related to the sale or ultimate collection of the underlying receivables and was not subject to significant other risks given their short term nature. Therefore, the Company reflected all cash flows under the accounts receivable sales programs as operating cash flows on the Company's interim condensed consolidated statements of cash flows.

The Company performs collection and administrative functions on the receivables related to the European RPA, the European RFA and the Singapore RPA similar to the procedures it uses for collecting all of its receivables. The servicing liability for these receivables is not material to the interim condensed consolidated financial statements.

NOTE 5 — ASSETS AND LIABILITIES HELD FOR SALE AND DISPOSALS OF PROPERTIES, PLANTS AND EQUIPMENT, NET

As of July 31, 2019, there were two asset groups within the Rigid Industrial Packaging & Services segment classified as assets held for sale, one asset group within the Paper Packaging & Services segment classified as assets held for sale, and two corporate asset groups classified as assets held for sale. The assets held for sale are being marketed for sale, and it is the Company's intention to complete the sales within twelve months following their initial classification as held for sale.

As of October 31, 2018, there were two asset groups in the Rigid Industrial Packaging & Services segment classified as assets held for sale and one asset group within the Paper Packaging & Services segment classified as assets held for sale.

For the three months ended July 31, 2019, the Company recorded a gain on disposal of properties, plants and equipment, net of $1.3 million. This included disposals of assets in the Flexible Packaging & Services segment that resulted in losses of $0.1 million, and special use property sales that resulted in gains of $1.4 million in the Land Management segment. The Company has $4.5 million of notes receivable recorded from the sale of properties, plants and equipment.

For the nine months ended July 31, 2019, the Company recorded a gain on disposal of properties, plants and equipment, net of $7.1 million. This included disposals of assets in the Rigid Industrial Packaging & Services segment that resulted in gains of $0.2 million, disposals of assets in the Flexible Packaging & Services segment that resulted in gains of $5.0 million, and special use property sales that resulted in gains of $1.9 million in the Land Management segment.

For the three months ended July 31, 2018, the Company recorded a gain on disposal of properties, plants and equipment, net of $1.4 million. This included disposals of assets in the Rigid Industrial Packaging & Services segment that resulted in gains of $0.7 million and special use property sales that resulted in gains of $0.7 million in the Land Management segment.

For the nine months ended July 31, 2018, the Company recorded a gain on disposal of properties, plants and equipment, net of $7.5 million. This included disposals of assets in the Rigid Industrial Packaging & Services segment that resulted in gains of $5.2 million and special use property sales that resulted in gains of $2.3 million in the Land Management segment.

NOTE 6 — GOODWILL AND OTHER INTANGIBLE ASSETS

The following table summarizes the changes in the carrying amount of goodwill by segment for the nine months ended July 31, 2019:

(in millions)	Rigid Industrial Packaging & Services	Paper Packaging & Services	Total
Balance at October 31, 2018	$ 716.5	$ 59.5	$ 776.0
Goodwill acquired	22.3	769.4	791.7
Currency translation	(5.8)	—	(5.8)
Balance at July 31, 2019	$ 733.0	$ 828.9	$ 1,561.9

The Caraustar Acquisition added $769.4 million of goodwill to the Paper Packaging & Services segment and the Tholu Acquisition added $22.3 million of goodwill to the Rigid Industrial Packaging & Services segment. See Note 3 to the interim condensed consolidated financial statements for additional disclosure of goodwill added by these acquisitions.

The following table summarizes the carrying amount of net intangible assets by class as of July 31, 2019 and October 31, 2018:

(in millions)	Gross Intangible Assets	Accumulated Amortization	Net Intangible Assets
July 31, 2019:			
Indefinite lived:			
Trademarks and patents	$ 13.2	$ —	$ 13.2
Definite lived:			
Customer relationships	891.1	135.6	755.5
Trademarks, patents and trade names	27.0	7.9	19.1
Non-compete agreements	2.3	0.4	1.9
Other	22.0	17.4	4.6
Total	$ 955.6	$ 161.3	$ 794.3

(in millions)	Gross Intangible Assets	Accumulated Amortization	Net Intangible Assets
October 31, 2018:			
Indefinite lived:			
Trademarks and patents	$ 13.3	$ —	$ 13.3
Definite lived:			
Customer relationships	162.2	105.8	56.4
Trademarks and patents	10.9	5.1	5.8
Other	21.2	16.1	5.1
Total	$ 207.6	$ 127.0	$ 80.6

Amortization expense for the three months ended July 31, 2019 and 2018 was $17.1 million and $3.8 million, respectively. Amortization expense for nine months ended July 31, 2019 and 2018 was $35.5 million and $11.5 million, respectively. Amortization expense for the next five years is expected to be $52.9 million in 2019, $69.1 million in 2020, $66.8 million in 2021, $59.2 million in 2022 and $56.4 million in 2023.

The Caraustar Acquisition added $725.5 million of intangibles to the Paper Packaging & Services segment and the Tholu Acquisition added $24.6 million of intangibles to the Rigid Industrial Packaging & Services agreement. See Note 3 to the interim condensed consolidated financial statements for additional disclosure of intangibles added by these acquisitions.

Definite lived intangible assets for the periods presented are subject to amortization and are being amortized using the straight-line method over periods that are contractually, legally determined, or over the period a market participant would benefit from the asset.

NOTE 7 — RESTRUCTURING CHARGES

The following is a reconciliation of the beginning and ending restructuring reserve balances for the nine months ended July 31, 2019:

(in millions)	Employee Separation Costs	Other Costs	Total
Balance at October 31, 2018	$ 4.2	$ 0.2	$ 4.4
Costs incurred and charged to expense	18.7	1.6	20.3
Costs paid or otherwise settled	(12.2)	(1.1)	(13.3)
Balance at July 31, 2019	$ 10.7	$ 0.7	$ 11.4

The focus for restructuring activities in 2019 is to optimize and integrate operations in the Paper Packaging & Services segment related to the Caraustar Acquisition and continue to rationalize operations and close underperforming assets in the Rigid Industrial Packaging & Services and the Flexible Products & Services segments.

During the three months ended July 31, 2019, the Company recorded restructuring charges of $9.1 million, as compared to $3.7 million of restructuring charges recorded during the three months ended July 31, 2018. The restructuring activity for the three months ended July 31, 2019 consisted of $8.2 million in employee separation costs and $0.9 million in other restructuring costs.

During the nine months ended July 31, 2019, the Company recorded restructuring charges of $20.3 million, as compared to $13.8 million of restructuring charges recorded during the nine months ended July 31, 2018. The restructuring activity for the nine months ended July 31, 2019 consisted of $18.7 million in employee separation costs and $1.6 million in other restructuring costs.

The following is a reconciliation of the total amounts expected to be incurred from approved restructuring plans or plans that are being formulated and have not been announced as of the date of this Form 10-Q. Remaining amounts expected to be incurred are $18.1 million as of July 31, 2019 compared to $12.0 million as of October 31, 2018. The change was due to the costs incurred or otherwise settled, offset by the formulations of new plans during the period.

(in millions)	Total Amounts Expected to be Incurred	Amounts Incurred During the nine months ended July 31, 2019	Amounts Remaining to be Incurred
Rigid Industrial Packaging & Services			
Employee separation costs	$ 25.8	$ 13.6	$ 12.2
Other restructuring costs	6.5	1.4	5.1
	32.3	15.0	17.3
Flexible Products & Services			
Employee separation costs	0.7	—	0.7
Other restructuring costs	0.1	—	0.1
	0.8	—	0.8
Paper Packaging & Services			
Employee separation costs	5.0	5.0	—
Other restructuring costs	0.2	0.2	—
	5.2	5.2	—
Land Management			
Employee separation costs	0.1	0.1	—
	0.1	0.1	—
	$ 38.4	$ 20.3	$ 18.1

NOTE 8 — CONSOLIDATION OF VARIABLE INTEREST ENTITIES

The Company evaluates whether an entity is a variable interest entity (“VIE”) whenever reconsideration events occur and performs reassessments of all VIEs quarterly to determine if the primary beneficiary status is appropriate. The Company consolidates VIEs for which it is the primary beneficiary. If the Company is not the primary beneficiary and an ownership interest is held, the VIE is accounted for under the equity or cost methods of accounting, as appropriate. When assessing the determination of the primary beneficiary, the Company considers all relevant facts and circumstances, including: the power to direct the activities of the VIE that most significantly impact the VIE's economic performance; and the obligation to absorb the expected losses and/or the right to receive the expected returns of the VIE.

Paper Packaging Joint Venture

In 2018, one of the Company's subsidiaries formed a joint venture (referred to herein as the "Paper Packaging JV" or "PPS VIE") with a third party. The Paper Packaging JV has been consolidated into the operations of the Company since its formation date of April 20, 2018.

The Paper Packaging JV is deemed to be a VIE because the equity investors at risk, as a group, lack the characteristics of a controlling financial interest. The structure of the Paper Packaging JV has governing provisions that, for purposes of GAAP, are the functional equivalent of a limited partnership whereby the Company is the managing member that makes all the decisions related to the activities that most significantly affect the economic performance of the PPS VIE. In addition, the third party does not have any substantive kick-out rights or substantive participating rights in the Paper Packaging JV. The major factor that led to the conclusion that the Paper Packaging JV is a VIE was that all limited partnerships are considered to be VIEs unless the limited partners have substantive kick-out rights or substantive participating rights.

As of July 31, 2019, the Paper Packaging JV's net assets consist of zero cash and cash equivalents and properties, plants, and equipment, net of $23.6 million compared to cash and cash equivalents of $2.8 million and properties, plants, and equipment, net of $7.2 million as of October 31, 2018. For the three and nine months ended July 31, 2019 and 2018, there is no net income (loss) as the PPS JV is in the startup phase and has not yet commenced operations.

Flexible Packaging Joint Venture

In 2010, Greif, Inc. and one of its indirect subsidiaries formed a joint venture (referred to herein as the "Flexible Packaging JV" or "FPS VIE") with Dabbagh Group Holding Company Limited and one of its subsidiaries, originally National Scientific Company Limited and now Gulf Refined Packaging for Industrial Packaging Company LTD. The Flexible Packaging JV owns the operations in the Flexible Products & Services segment. The Flexible Packaging JV has been consolidated into the operations of the Company as of its formation date in 2010.

The Flexible Packaging JV is deemed to be a VIE since the total equity investment at risk is not sufficient to permit the legal entity to finance its activities without additional subordinated financial support. The major factors that led to the conclusion that the Company was the primary beneficiary of this VIE were that (1) the Company has the power to direct the most significant activities due to its ability to direct the operating decisions of the FPS VIE, which power is derived from the significant CEO discretion over the operations of the FPS VIE combined with the Company's sole and exclusive right to appoint the CEO of the FPS VIE, and (2) the significant variable interest through the Company's equity interest in the FPS VIE.

All entities contributed to the Flexible Packaging JV were existing businesses acquired by one of the Company's indirect subsidiaries that were reorganized under Greif Flexibles Asset Holding B.V. and Greif Flexibles Trading Holding B.V.

The following table presents the Flexible Packaging JV total net assets:

(in millions)	**July 31, 2019**	**October 31, 2018**
Cash and cash equivalents	$ 14.7	$ 22.2
Trade accounts receivable, less allowance of $0.7 in 2019 and $0.6 in 2018	53.0	53.2
Inventories	50.1	49.0
Properties, plants and equipment, net	21.4	28.8
Other assets	28.3	21.5
Total Assets	$ 167.5	$ 174.7
Accounts payable	$ 26.7	$ 29.0
Other liabilities	26.8	24.8
Total Liabilities	$ 53.5	$ 53.8

Net income attributable to the noncontrolling interest in the Flexible Packaging JV for the three months ended July 31, 2019 and 2018 was $2.3 million and $1.8 million, respectively; and for the nine months ended July 31, 2019 and 2018 was $10.8 million and $7.3 million, respectively.

Non-United States Accounts Receivable VIE

As further described in Note 4 to the interim condensed consolidated financial statements, Cooperage Receivables Finance B.V. is a party to the European RFA. Cooperage Receivables Finance B.V. is deemed to be a VIE since this entity is not able to satisfy its liabilities without the financial support from the Company. While this entity is a separate and distinct legal entity from the Company and no ownership interest in this entity is held by the Company, the Company is the primary beneficiary because it has (1) the power to direct the activities of the VIE that most significantly impact the VIE's economic performance, and (2) the obligation to absorb losses of the VIE that could potentially be significant to the VIE. As a result, Cooperage Receivables Finance B.V. has been consolidated into the operations of the Company.

Significant Nonstrategic Timberland Transactions

In 2005, the Company sold certain timber properties to Plum Creek Timberlands, L.P. ("Plum Creek") in a series of transactions that included the creation of two separate legal entities that are now consolidated as separate VIEs. One is an indirect subsidiary of Plum Creek (the "Buyer SPE"), and the other is STA Timber LLC, an indirect wholly owned subsidiary of the Company ("STA Timber").

As of July 31, 2019 and October 31, 2018, consolidated assets of the Buyer SPE consisted of $50.9 million of restricted bank financial instruments which are expected to be held to maturity. For both of the three month periods ended July 31, 2019 and 2018, Buyer SPE recorded interest income of $0.6 million. For both of the nine month periods ended July 31, 2019 and 2018, Buyer SPE recorded interest income of $1.8 million.

As of July 31, 2019 and October 31, 2018, STA Timber had consolidated long-term debt of $43.3 million. For both of the three month periods ended July 31, 2019 and 2018, STA Timber recorded interest expense of $0.5 million. For both of the nine month periods ended July 31, 2019 and 2018, STA Timber recorded interest expense of $1.7 million. The intercompany borrowing arrangement between the two VIEs is eliminated in consolidation. STA Timber is exposed to credit-related losses in the event of nonperformance by an issuer of a deed of guarantee in the transaction.

NOTE 9 — LONG-TERM DEBT

Long-term debt is summarized as follows:

(in millions)	**July 31, 2019**	**October 31, 2018**
2019 Credit Agreement - Term Loans	$ 1,633.2	$ —
2017 Credit Agreement - Term Loan	—	277.5
Senior Notes due 2027	494.1	—
Senior Notes due 2021	222.2	226.5
Senior Notes due 2019	—	249.1
Accounts receivable credit facilities	261.3	150.0
2019 Credit Agreement - Revolving Credit Facility	272.4	—
2017 Credit Agreement - Revolving Credit Facility	—	3.8
Other debt	0.6	0.7
	2,883.8	907.6
Less: current portion	83.7	18.8
Less: deferred financing costs	14.1	4.7
Long-term debt, net	$ 2,786.0	$ 884.1

2019 Credit Agreement

On February 11, 2019, the Company and certain of its subsidiaries entered into an amended and restated senior secured credit agreement (the "2019 Credit Agreement") with a syndicate of financial institutions. The 2019 Credit Agreement amended, restated, and replaced in its entirety the prior $800.0 million senior secured credit agreement (the "2017 Credit Agreement"). The Company's obligations under the 2019 Credit Agreement are guaranteed by certain of its U.S. subsidiaries.

The 2019 Credit Agreement provides for (a) an $800.0 million secured revolving credit facility, consisting of a $600.0 million multicurrency facility and a $200.0 million U.S. dollar facility, maturing on February 11, 2024, (b) a $1,275.0 million secured term loan A-1 facility with quarterly principal installments commencing on April 30, 2019 and continuing through maturity on January 31, 2024, and (c) a $400.0 million secured term loan A-2 facility with quarterly principal installments commencing on April 30, 2019 and continuing through maturity on January 31, 2026. In addition, the Company has an option to add an aggregate of $700.0 million to the secured revolving credit facility under the 2019 Credit Agreement with the agreement of the lenders.

The Company used borrowings under the 2019 Credit Agreement, together with the net proceeds from the issuance of the Senior Notes due March 1, 2027 (described below), to fund the purchase price of the Caraustar Acquisition, to redeem its $250.0 million Senior Notes due August 1, 2019 (the "Senior Notes due 2019"), to repay outstanding borrowings under the 2017 Credit Agreement, to fund ongoing working capital and capital expenditure needs and for general corporate purposes, and to pay related fees and expenses. Interest is based on either a Eurodollar rate or a base rate that resets periodically plus a calculated margin amount. On February 11, 2019, proceeds from borrowings under the 2019 Credit Agreement were used to pay the obligations outstanding under the 2017 Credit Agreement.

The 2019 Credit Agreement contains certain covenants, which include financial covenants that require the Company to maintain a certain leverage ratio and an interest coverage ratio. The leverage ratio generally requires that, at the end of any fiscal quarter, the Company will not permit the ratio of (a) its total consolidated indebtedness, to (b) its consolidated net income plus depreciation, depletion and amortization, interest expense (including capitalized interest), income taxes, and minus certain extraordinary gains and non-recurring gains (or plus certain extraordinary losses and non-recurring losses) and plus or minus certain other items for the preceding twelve months (as used in this paragraph only, “EBITDA”) to be greater than 4.75 to 1 and stepping down annually by 0.25 increments beginning on July 31, 2020 to 4.00 on July 31, 2023. The interest coverage ratio generally requires that, at the end of any fiscal quarter, the Company will not permit the ratio of (a) its consolidated EBITDA, to (b) its consolidated interest expense to the extent paid or payable, to be less than 3.00 to 1, during the applicable preceding twelve month period.

The terms of the 2019 Credit Agreement contain restrictive covenants, which limit the ability of the Company and its restricted subsidiaries, among other things, to incur additional indebtedness or issue certain preferred stock, pay dividends, redeem stock or make other distributions, or make certain investments; create restrictions on the ability of its restricted subsidiaries to pay dividends or make other payments to the Company; create certain liens; transfer or sell certain assets; merge or consolidate; enter into certain transactions with the Company's affiliates; and designate subsidiaries as unrestricted subsidiaries. These covenants are subject to a number of important exceptions and qualifications.

The repayment of this facility is secured by a security interest in the personal property of the Company and certain of its U.S. subsidiaries, including equipment and inventory and certain intangible assets, as well as a pledge of the capital stock of substantially all of the Company's U.S. subsidiaries, and is secured, in part, by the capital stock of the non-U.S. borrowers. However, in the event that the Company receives and maintains an investment grade rating from either Moody’s Investors Service, Inc. or Standard & Poor’s Financial Services LLC, the Company may request the release of such collateral.

The 2019 Credit Agreement provides for events of default (subject in certain cases to customary grace and cure periods), which include, among others, nonpayment of principal or interest when due, breach of covenants or other agreements in the 2019 Credit Agreement, defaults in payment of certain other indebtedness and certain events of bankruptcy or insolvency.

As of July 31, 2019, $1,905.6 million was outstanding under the 2019 Credit Agreement. The current portion of such outstanding amount was $83.7 million and the long-term portion was $1,821.9 million. The weighted average interest rate for borrowings under the 2019 Credit Agreement was 4.13% for the nine months ended July 31, 2019. The actual interest rate for borrowings under the 2019 Credit Agreement was 4.08% as of July 31, 2019. The deferred financing costs associated with the term loan portion of the 2019 Credit Agreement totaled $11.4 million as of July 31, 2019 and are recorded as a direct deduction from the balance sheet line Long-Term Debt. The deferred financing costs associated with the revolver portion of the 2019 Credit Agreement totaled $8.4 million as of July 31, 2019 and are recorded within Other Long-Term Assets.

As a result of the refinancing, $0.8 million of unamortized deferred financing costs related to the 2017 Credit Agreement and $5.5 million of newly incurred financing costs related to the 2019 Credit Agreement were expensed as Debt Extinguishment Charges in the interim condensed consolidated statements of income.

Senior Notes due 2027

On February 11, 2019, the Company issued $500.0 million of 6.50% Senior Notes due March 1, 2027 (the "Senior Notes due 2027"). Interest on the Senior Notes due 2027 is payable semi-annually commencing on September 1, 2019. The Company's obligations under the Senior Notes due 2027 are guaranteed by its U.S. subsidiaries that guarantee the 2019 Credit Agreement, as described above. The Company used the net proceeds from the issuance of the Senior Notes due 2027, together with borrowings under the 2019 Credit Agreement, to fund the purchase price of the Caraustar Acquisition, to redeem all of the Senior Notes due 2019, to repay outstanding borrowings under the 2017 Credit Agreement, and to pay related fees and expenses. The deferred financing cost associated with the Senior Notes due 2027 totaled $2.7 million as of July 31, 2019 and are recorded as a direct deduction from the balance sheet line Long-Term Debt.

Senior Notes due 2021

On July 15, 2011, Greif, Inc.'s wholly-owned subsidiary, Greif Nevada Holdings, Inc., S.C.S. issued €200.0 million of 7.375% Senior Notes due July 15, 2021 (the "Senior Notes due 2021"). The Senior Notes due 2021 are guaranteed on a senior basis by Greif, Inc. Interest on the Senior Notes due 2021 is payable semi-annually.

Senior Notes due 2019

On April 1, 2019, the Company redeemed all of its outstanding Senior Notes due 2019, which were issued by the Company on July 28, 2009 for $250.0 million. The total redemption price for the Senior Notes due 2019 was $253.9 million, which was equal to the aggregate principal amount outstanding of $250.0 million plus a premium of $3.9 million. The premium was recognized as a debt extinguishment cost. The payment of the redemption price was funded by borrowings under the Company's 2019 Credit Agreement.

As a result of redeeming the Senior Notes due 2019, $0.7 million of unamortized deferred financing costs were expensed to Debt Extinguishment Charges in the interim condensed consolidated statements of income.

United States Trade Accounts Receivable Credit Facility

On September 26, 2018, the Company amended and restated its existing subsidiary receivables facility in the United States to establish a $150.0 million United States Trade Accounts Receivable Credit Facility (the "U.S. Receivables Facility") with a financial institution. The U.S. Receivables Facility matures on September 26, 2019. The $150.0 million outstanding balance under the U.S. Receivables Facility as of July 31, 2019 is reported in long-term debt in the interim condensed consolidated balance sheets because the Company intends to refinance the obligation on a long-term basis and has the intent and ability to consummate a long-term refinancing by exercising the renewal option in the agreement or entering into a new financing arrangement.

International Trade Accounts Receivable Credit Facilities

See Note 4 to the interim condensed consolidated financial statements for additional disclosures.

NOTE 10 — FINANCIAL INSTRUMENTS AND FAIR VALUE MEASUREMENTS

Recurring Fair Value Measurements

The following table presents the fair value for those assets and (liabilities) measured on a recurring basis as of July 31, 2019 and October 31, 2018:

	July 31, 2019				
	Fair Value Measurement				
(in millions)	Level 1	Level 2	Level 3	Total	Balance Sheet Location
Interest rate derivatives	$ —	$ 3.9	$ —	$ 3.9	Other current assets and other long-term assets
Interest rate derivatives	—	(19.4)	—	(19.4)	Other current liabilities and other long-term liabilities
Foreign exchange hedges	—	1.9	—	1.9	Other current assets
Foreign exchange hedges	—	(0.4)	—	(0.4)	Other current liabilities
Insurance annuity	—	—	20.0	20.0	Other long-term assets
Cross currency swap	—	9.7	—	9.7	Other current assets and other long-term assets
Total	$ —	$ (4.3)	$ 20.0	$ 15.7	

	October 31, 2018				
	Fair Value Measurement				
(in millions)	Level 1	Level 2	Level 3	Total	Balance Sheet Location
Interest rate derivatives	$ —	$ 16.5	$ —	$ 16.5	Other current assets and other long-term assets
Foreign exchange hedges	—	2.6	—	2.6	Other current assets
Foreign exchange hedges	—	(0.7)	—	(0.7)	Other current liabilities
Insurance annuity	—	—	20.4	20.4	Other long-term assets
Cross currency swap	—	5.2	—	5.2	Other current assets and other long-term assets
Total	$ —	$ 23.6	$ 20.4	$ 44.0	

The carrying amounts of cash and cash equivalents, trade accounts receivable, accounts payable, current liabilities and short-term borrowings as of July 31, 2019 and October 31, 2018 approximate their fair values because of the short-term nature of these items and are not included in this table.

Interest Rate Derivatives

The Company has various borrowing facilities which charge interest based on the one month U.S. dollar LIBOR rate plus an interest spread. In 2019, the Company entered into six interest rate swaps. These six interest rate swaps have a total notional amount of $1,300.0 million. The Company will receive variable rate interest payments based upon one month U.S. dollar LIBOR, and in return the Company is obligated to pay interest at a weighted-average interest rate of 2.49% plus a spread. This effectively converted the borrowing rate on $1,300.0 million of debt from a variable rate to a fixed rate.

In 2017, the Company entered into an interest rate swap with a notional amount of $300.0 million. As of February 1, 2017, the Company began to receive variable rate interest payments based upon one month U.S. dollar LIBOR, and in return the Company was obligated to pay interest at a fixed rate of 1.19% plus an interest spread. This effectively converted the borrowing rate on $300.0 million of debt from a variable rate to a fixed rate.

These derivatives are designated as cash flow hedges for accounting purposes. Accordingly, the gain or loss on these derivative instruments are reported as a component of other comprehensive income and reclassified into earnings in the same line item associated with the forecasted transactions and in the same period during which the hedged transactions affect earnings. See Note 15 to the interim condensed consolidated financial statements for additional disclosures of the gain or loss included within other comprehensive income. The assumptions used in measuring fair value of these interest rate derivatives are considered level 2 inputs, which are based upon observable market rates, including LIBOR and interest paid based upon a designated fixed rate over the life of the swap agreements.

Gains reclassified to earnings under these contracts were $0.7 million and $2.5 million for the three and nine months ended July 31, 2019, respectively. Gains reclassified to earnings under these contracts were $0.6 million and $1.1 million for the three and nine months ended July 31, 2018, respectively. A derivative loss of $3.6 million, based upon interest rates at July 31, 2019, is expected to be reclassified from accumulated other comprehensive income to earnings in the next twelve months.

Foreign Exchange Hedges

The Company conducts business in various international currencies and is subject to risks associated with changing foreign exchange rates. The Company’s objective is to reduce volatility associated with foreign exchange rate changes. Accordingly, the Company enters into various contracts that change in value as foreign exchange rates change to protect the value of certain existing foreign currency assets and liabilities, commitments and anticipated foreign currency cash flows. As of July 31, 2019, the Company had outstanding foreign currency forward contracts in the notional amount of $121.4 million ($194.4 million as of October 31, 2018). Adjustments to fair value are recognized in earnings, offsetting the impact of the hedged profits. The assumptions used in measuring fair value of foreign exchange hedges are considered level 2 inputs, which are based on observable market pricing for similar instruments, principally foreign exchange futures contracts.

Realized gains (losses) recorded in other expense, net under fair value contracts were $2.8 million and $(2.4) million for the three months ended July 31, 2019, and 2018, respectively. Realized gains (losses) recorded in other expense, net under fair value were $3.3 million and $(4.5) million for the nine months ended July 31, 2019 and 2018, respectively. The Company recognized in other expense, net an unrealized net gain (loss) of $(0.3) million and $0.6 million during the three months ended July 31, 2019 and 2018, respectively. The Company recognized in other expense, net an unrealized net gain (loss) of $1.5 million and $(0.5) million during the nine months ended July 31, 2019 and 2018, respectively.

Cross Currency Swap

The Company has operations and investments in various international locations and is subject to risks associated with changing foreign exchange rates. On March 6, 2018, the Company entered into a cross currency interest rate swap agreement that synthetically swaps $100.0 million of fixed rate debt to Euro denominated fixed rate debt at a rate of 2.35%. The agreement is designated as a net investment hedge for accounting purposes and will mature on March 6, 2023. Accordingly, the gain or loss on this derivative instrument is included in the foreign currency translation component of other comprehensive income until the net investment is sold, diluted or liquidated. Interest payments received for the cross currency swap are excluded from the net investment hedge effectiveness assessment and are recorded in interest expense, net on the interim condensed consolidated statements of income. For the three and nine months ended July 31, 2019, gains recorded in interest expense, net under the cross currency swap agreement were $0.6 million and $1.8 million. For the three and nine months ended July 31, 2018, gains recorded in interest expense, net under the cross currency swap agreement were $0.6 million and $1.0 million, respectively. See Note 15 to the interim condensed consolidated financial statements for additional disclosure of the gain or loss included within other comprehensive income. The assumptions used in measuring fair value of the cross currency swap are considered level 2 inputs, which are based upon the Euro to United States Dollar exchange rate market.

Other Financial Instruments

The fair values of the Company’s 2019 Credit Agreement, 2017 Credit Agreement, and the Receivables Facility do not materially differ from carrying value as the Company’s cost of borrowing is variable and approximates current borrowing rates. The fair values of the Company’s long-term obligations are estimated based on either the quoted market prices for the same or similar issues or the current interest rates offered for the debt of the same remaining maturities, which are considered level 2 inputs in accordance with ASC Topic 820, "Fair Value Measurements and Disclosures."

The following table presents the estimated fair values of the Company's Senior Notes and assets held by special purpose entities:

(in millions)	July 31, 2019	October 31, 2018
Senior Notes due 2019 estimated fair value	$ —	$ 257.4
Senior Notes due 2021 estimated fair value	253.6	263.4
Senior Notes due 2027 estimated fair value	523.6	—
Assets held by special purpose entities estimated fair value	51.9	51.6

Non-Recurring Fair Value Measurements

The Company recognized asset impairment charges of $2.1 million during the nine months ended July 31, 2019 and $4.1 million for the nine months ended July 31, 2018.

The following table presents quantitative information about the significant unobservable inputs used to determine the fair value of the impairment of long-lived assets held and used and net assets held for sale for the nine months ended July 31, 2019 and 2018:

	Quantitative Information about Level 3 Fair Value Measurements			
(in millions)	Fair Value of Impairment	Valuation Technique	Unobservable Input	Range of Input Values
July 31, 2019				
Impairment of Net Assets Held for Sale	$ 2.1	Indicative Bids	Indicative Bids	N/A
Total	$ 2.1			
July 31, 2018				
Impairment of Net Assets Held for Sale	$ 0.4	Discounted Cash Flows	Discounted Cash Flows	N/A
Impairment of Long Lived Assets	$ 3.7	Discounted Cash Flows	Discounted Cash Flows	N/A
Total	$ 4.1			

Long-Lived Assets

As necessary, based on triggering events, the Company measures long-lived assets at fair value on a non-recurring basis. The Company recorded no impairment charges related to properties, plants and equipment or intangibles, net during the nine months ended July 31, 2019 and $2.7 million related to properties, plants and equipment, net and $1.4 million related to intangible assets, net during the nine months ended July 31, 2018.

The assumptions used in measuring fair value of long-lived assets are considered level 3 inputs, which include bids received from third parties, recent purchase offers, market comparable information and discounted cash flows based on assumptions that market participants would use.

Reclassification of Assets and Liabilities Held for Sale

During the nine month period ended July 31, 2019, one asset group was reclassified to assets and liabilities held for sale, resulting in a $2.1 million impairment to net realizable value.

The assumptions used in measuring fair value of assets and liabilities held for sale are considered level 3 inputs, which include recent purchase offers, market comparables and/or data obtained from commercial real estate brokers.

NOTE 11 — INCOME TAXES

The Tax Cuts and Jobs Act of 2017 (the "Tax Reform Act") includes several provisions which are first effective for the Company in 2019, including a new limitation on deductible interest expense, current taxation of global intangible low-taxed income ("GILTI") earned by certain foreign subsidiaries, and a tax benefit for foreign-derived intangible income ("FDII"). As of July 31, 2019, significant guidance with respect to the Tax Reform Act remains proposed or outstanding. Several components of the current year tax expense remain estimates and are primarily based upon the proposed regulations and other guidance released by the Internal Revenue Service and the U.S. Treasury. The most significant estimates relate to GILTI and FDII, and these estimates are included as period costs in the estimated annual effective tax rate.

The Company completed the Caraustar Acquisition on February 11, 2019. The Company recorded a current preliminary net deferred tax liability of $184.9 million, which was primarily related to intangible assets that cannot be amortized for tax purposes. See Note 3 to the interim condensed consolidated financial statements for additional disclosures.

Income tax expense for the quarter and year to date was computed in accordance with ASC 740-270 "Income Taxes - Interim Reporting." Under this method, losses from jurisdictions for which a valuation allowance has been provided have not been included in the amount to which the ASC 740-270 rate was applied. Income tax expense of the Company fluctuates primarily due to changes in losses and income from jurisdictions for which a valuation allowance has been provided, the timing of recognition of the related tax expense under ASC 740-270, and the impact of discrete items in the respective quarter.

For the nine months ended July 31, 2019, income tax expense was $58.3 million compared to $31.2 million for the nine months ended July 31, 2018. The increase to income tax expense for the nine months ended July 31, 2019 was primarily attributable to the favorable impacts of the Tax Reform Act recorded in the second quarter of 2018.

NOTE 12 — POST RETIREMENT BENEFIT PLANS

The components of net periodic pension cost include the following:

	Three Months Ended July 31,		Nine Months Ended July 31,	
(in millions)	**2019**	**2018**	**2019**	**2018**
Service cost	$ 3.8	$ 3.1	$ 10.1	$ 9.7
Interest cost	8.7	4.7	22.6	13.9
Expected return on plan assets	(11.0)	(6.4)	(28.2)	(18.6)
Amortization of prior service (benefit) cost	1.8	3.4	5.4	10.6
Net periodic pension cost	$ 3.3	$ 4.8	$ 9.9	$ 15.6

Contributions, including benefits paid directly by the Company, to the pension plans were $19.7 million and $85.4 million, in the nine months ended July 31, 2019 and 2018, respectively.

The components of net periodic post-retirement benefit include the following:

	Three Months Ended July 31,		Nine Months Ended July 31,	
(in millions)	**2019**	**2018**	**2019**	**2018**
Interest cost	$ 0.1	$ 0.1	$ 0.3	$ 0.3
Amortization of prior service benefit	(0.4)	(0.4)	(1.2)	(1.2)
Net periodic post-retirement benefit	$ (0.3)	$ (0.3)	$ (0.9)	$ (0.9)

The components of net periodic pension cost and net periodic post-retirement benefit, other than the service cost components, are included in the line item "Other expense, net" in the interim condensed consolidated statements of income.

NOTE 13 — CONTINGENT LIABILITIES AND ENVIRONMENTAL RESERVES

Litigation-related Liabilities

The Company may become involved from time-to-time in litigation and regulatory matters incidental to its business, including governmental investigations, enforcement actions, personal injury claims, product liability, employment health and safety matters, commercial disputes, intellectual property matters, disputes regarding environmental clean-up costs, litigation in connection with acquisitions and divestitures, and other matters arising out of the normal conduct of its business. The Company intends to vigorously defend itself in such litigation. The Company does not believe that the outcome of any pending litigation will have a material adverse effect on its interim condensed consolidated financial statements.

The Company may accrue for contingencies related to litigation and regulatory matters if it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Because litigation is inherently unpredictable and unfavorable resolutions can occur, assessing contingencies is highly subjective and requires judgments about future events. The Company regularly reviews contingencies to determine whether its accruals are adequate. The amount of ultimate loss may differ from these estimates.

The Company is currently involved in legal proceedings outside of the United States related to various wrongful termination lawsuits filed by former employees and benefit claims filed by some existing employees of the Company's Flexible Products & Services segment. The lawsuits include claims for severance for employment periods prior to the Company’s ownership in the business. As of July 31, 2019 and October 31, 2018, the estimated liability recorded related to these matters were $1.7 million and $2.0 million, respectively. The estimated liability has been determined based on the number of active cases and the settlements and rulings on previous cases. It is reasonably possible the estimated liability could increase if additional cases are filed or adverse rulings are made.

Since 2017, three reconditioning facilities in the Milwaukee, Wisconsin area that are owned by Container Life Cycle Management LLC ("CLCM"), the Company’s U.S. reconditioning joint venture company, have been subject to investigations conducted by federal, state and local governmental agencies concerning, among other matters, potential violations of environmental laws and regulations. As a result of these investigations, the United States Environmental Protection Agency (“U.S. EPA”) and the Wisconsin Department of Natural Resources (“WDNR”) have issued notices of violations to the Company and CLCM regarding violations of certain federal and state environmental laws and regulations. The remedies being sought in these proceedings include compliance with the applicable environmental laws and regulations as being interpreted by the U.S. EPA and WDNR and monetary sanctions. The Company has cooperated with the governmental agencies in these investigations and proceedings. As of August 29, 2019, no material citations have been issued or material fines assessed with respect to any violation of environmental laws and regulations. Since these proceedings are in their investigative stage, the Company is unable to predict the outcome of these proceedings or estimate a range of reasonable possible monetary sanctions or costs associated with any remedial actions that may be required or requested by the U.S. EPA or WDNR.

In addition, on November 8, 2017, the Company, CLCM and other parties were named as defendants in a punitive class action lawsuit filed in Wisconsin state court concerning one of CLCM’s Milwaukee reconditioning facilities. The plaintiffs are alleging that odors from this facility have invaded their property and are interfering with the use and enjoyment of their property and causing damage to the value of their property. Plaintiffs are seeking compensatory and punitive damages, along with their legal fees. The Company and CLCM are vigorously defending themselves in this lawsuit. The Company is unable to predict the outcome of this lawsuit or estimate a range of reasonably possible losses.

Environmental Reserves

As a result of the Caraustar Acquisition, the Company acquired The Newark Group, Inc., a subsidiary of Caraustar (“Newark”), and became subject to Newark’s Lower Passaic River environmental and litigation liability. By letters dated February 14, 2006 and June 2, 2006, the United States Environment Protection Agency (“EPA”) notified Newark of its potential liability under Section 107(a) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (“CERCLA”) relating to the Diamond Alkali Superfund Site, which includes a 17-mile stretch of the Lower Passaic River that EPA has denominated the Lower Passaic River Study Area (“LPRSA”). Newark is one of at least 70 potentially responsible parties identified in this case. The EPA alleges that hazardous substances were released from Newark’s now-closed Newark, New Jersey recycled paperboard mill into the Lower Passaic River. The EPA informed the Company that it may be potentially liable for response costs that the government may incur relating to the study of the LPRSA and for unspecified natural resource damages.

In April 2014, EPA issued a Focused Feasibility Study that proposed alternatives for the remediation of the lower 8 miles of the Lower Passaic River. On March 3, 2016, EPA issued its Record of Decision for the lower 8 miles of the Lower Passaic River, which presented a bank-to-bank dredging remedy selected by the agency for the lower 8 miles and which EPA estimates will cost approximately $1,380.0 million to implement. Newark is participating in an allocation process to determine its allocable share.

On June 30, 2018, Occidental Chemical Corporation (“OCC”) filed litigation in the U.S. District Court for the District of New Jersey styled Occidental Chemical Corp. v. 21st Century Fox America, Inc., et al., Civil Action No. 2:18-CV-11273 (D.N.J.), that names Newark and approximately 119 other parties as defendants. OCC’s Complaint alleges claims under CERCLA against all defendants for cost recovery, contribution, and declaratory judgment for costs OCC allegedly has incurred and will incur at the Diamond Alkali Superfund Site. The litigation is in its early stages, and we intend to vigorously defend ourselves in this litigation.

We have completed our initial assessment of these matters as part of our purchase price allocation. As of July 31, 2019, the Company has accrued $11.2 million for the Diamond Alkali Superfund Site. It is possible that, once we finalize our purchase price allocation, we could record a material adjustment to this environmental reserve related to the acquisition. Further, it is possible that there could be resolution of uncertainties in the future that would require the Company to record charges, which could be material to future earnings.

As of July 31, 2019 and October 31, 2018, environmental reserves were $18.9 million and $6.8 million, respectively, and were recorded on an undiscounted basis. These reserves are principally based on environmental studies and cost estimates provided by third parties, but also take into account management estimates. The estimated liabilities are reduced to reflect the anticipated participation of other potentially responsible parties in those instances where it is probable that such parties are legally responsible and financially capable of paying their respective shares of relevant costs. For sites that involve formal actions subject to joint and several liabilities, these actions have formal agreements in place to apportion the liability.

Aside from the Diamond Alkali Superfund Site, other environmental reserves of the Company as of July 31, 2019 and October 31, 2018 included $3.6 million and $3.7 million, respectively, for various European drum facilities acquired from Blagden and Van Leer; $0.1 million and $0.2 million, respectively, for its various container life cycle management and recycling facilities acquired in 2011 and 2010; $0.5 million and $0.9 million, respectively, for remediation of sites no longer owned by the Company; $1.9 million and $1.0 million, respectively, for landfill closure obligations in the Company's Paper Packaging & Services segment; and $1.6 million and $1.0 million, respectively, for various other facilities around the world.

The Company’s exposure to adverse developments with respect to any individual site is not expected to be material. Although environmental remediation could have a material effect on results of operations if a series of adverse developments occur in a particular quarter or year, the Company believes that the chance of a series of adverse developments occurring in the same quarter or year is remote. Future information and developments will require the Company to continually reassess the expected impact of these environmental matters.

NOTE 14 — EARNINGS PER SHARE

The Company has two classes of common stock and, as such, applies the “two-class method” of computing earnings per share (“EPS”) as prescribed in ASC 260, “Earnings Per Share.” In accordance with this guidance, earnings are allocated in the same fashion as dividends would be distributed. Under the Company’s articles of incorporation, any distribution of dividends in any year must be made in proportion of one cent a share for Class A Common Stock to one and one-half cents a share for Class B Common Stock, which results in a 40% to 60% split to Class A and B shareholders, respectively. In accordance with this, earnings are allocated first to Class A and Class B Common Stock to the extent that dividends are actually paid and the remainder is allocated assuming all of the earnings for the period have been distributed in the form of dividends.

The Company calculates EPS as follows:

$$\text{Basic Class A EPS} = \frac{\text{40\% * Average Class A Shares Outstanding}}{\text{40\% * Average Class A Shares Outstanding + 60\% * Average Class B Shares Outstanding}} * \frac{\text{Undistributed Net Income}}{\text{Average Class A Shares Outstanding}} + \text{Class A Dividends Per Share}$$

$$\text{Diluted Class A EPS} = \frac{\text{40\% * Average Class A Shares Outstanding}}{\text{40\% * Average Class A Shares Outstanding + 60\% * Average Class B Shares Outstanding}} * \frac{\text{Undistributed Net Income}}{\text{Average Diluted Class A Shares Outstanding}} + \text{Class A Dividends Per Share}$$

$$\text{Basic Class B EPS} = \frac{\text{60\% * Average Class B Shares Outstanding}}{\text{40\% * Average Class A Shares Outstanding + 60\% * Average Class B Shares Outstanding}} * \frac{\text{Undistributed Net Income}}{\text{Average Class B Shares Outstanding}} + \text{Class B Dividends Per Share}$$

*Diluted Class B EPS calculation is identical to Basic Class B calculation

The following table provides EPS information for each period, respectively:

(in millions)	Three Months Ended July 31, 2019	Three Months Ended July 31, 2018	Nine Months Ended July 31, 2019	Nine Months Ended July 31, 2018
Numerator for basic and diluted EPS				
Net income attributable to Greif, Inc.	$ 62.7	$ 67.7	$ 106.0	$ 169.3
Cash dividends	(26.1)	(24.8)	(77.9)	(74.0)
Undistributed net income (loss) attributable to Greif, Inc.	$ 36.6	$ 42.9	$ 28.1	$ 95.3

The Class A Common Stock has no voting rights unless four quarterly cumulative dividends upon the Class A Common Stock are in arrears. The Class B Common Stock has full voting rights. There is no cumulative voting for the election of directors.

Common Stock Repurchases

The Board of Directors has authorized the Company to repurchase shares of the Company's Class A Common Stock or Class B Common Stock or any combination of the foregoing. As of July 31, 2019, the remaining amount of shares that may be repurchased under this authorization was 4,703,487. There have been no shares repurchased under this program from November 1, 2018 through July 31, 2019.

The following table summarizes the Company’s Class A and Class B common and treasury shares as of the specified dates:

	Authorized Shares	Issued Shares	Outstanding Shares	Treasury Shares
July 31, 2019				
Class A Common Stock	128,000,000	42,281,920	26,257,943	16,023,977
Class B Common Stock	69,120,000	34,560,000	22,007,725	12,552,275
October 31, 2018				
Class A Common Stock	128,000,000	42,281,920	25,941,279	16,340,641
Class B Common Stock	69,120,000	34,560,000	22,007,725	12,552,275

The following is a reconciliation of the shares used to calculate basic and diluted earnings per share:

	Three Months Ended July 31, 2019	Three Months Ended July 31, 2018	Nine Months Ended July 31, 2019	Nine Months Ended July 31, 2018
Class A Common Stock:				
Basic shares	26,257,943	25,941,279	26,166,612	25,907,423
Diluted shares	26,257,943	25,941,279	26,166,612	25,907,423
Class B Common Stock:				
Basic and diluted shares	22,007,725	22,007,725	22,007,725	22,007,725

NOTE 15 — EQUITY AND COMPREHENSIVE INCOME (LOSS)

The following table summarizes the changes in equity for the three and nine month periods ended July 31, 2019 (Dollars in millions, shares in thousands):

	Three-Month Period Ended July 31, 2019								
	Capital Stock		Treasury Stock						
	Common Shares	Amount	Treasury Shares	Amount	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Greif, Inc. Equity	Non controlling interests	Total Equity
As of April 30, 2019	48,266	$ 162.6	28,576	$ (134.8)	$ 1,460.2	$ (401.4)	$ 1,086.6	$ 49.8	$ 1,136.4
Net income					62.7		62.7	4.8	67.5
Other comprehensive income (loss):									
Foreign currency translation						(2.2)	(2.2)	1.3	(0.9)
Derivative financial instruments, net of income tax expense of $2.2 million						(5.0)	(5.0)		(5.0)
Minimum pension liability adjustment, net of immaterial income tax						2.3	2.3		2.3
Comprehensive income							57.8		63.9
Current period mark to redemption value of redeemable noncontrolling interest					2.3		2.3		2.3
Net income allocated to redeemable noncontrolling interests							—	(0.5)	(0.5)
Dividends paid to Greif, Inc. shareholders ($0.44 and $0.66 per Class A share and Class B share, respectively)					(26.1)		(26.1)		(26.1)
Dividends paid to noncontrolling interests and other							—	(0.4)	(0.4)
As of July 31, 2019	48,266	$ 162.6	28,576	$ (134.8)	$ 1,499.1	$ (406.3)	$ 1,120.6	$ 55.0	$ 1,175.6

	Nine-Month Period Ended July 31, 2019								
	Capital Stock		Treasury Stock						
	Common Shares	Amount	Treasury Shares	Amount	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Greif, Inc. Equity	Non controlling interests	Total Equity
As of October 31, 2018	47,949	$ 150.5	28,893	$ (135.4)	$ 1,469.8	$ (377.1)	$ 1,107.8	$ 46.4	$ 1,154.2
Net income					106.0		106.0	18.4	124.4
Other comprehensive income (loss):									
Foreign currency translation						(10.7)	(10.7)	0.3	(10.4)
Derivative financial instruments, net of income tax benefit of $1.4 million						(20.7)	(20.7)		(20.7)
Minimum pension liability adjustment, net of immaterial income tax						2.2	2.2		2.2
Comprehensive income							76.8		95.5
Adoption of ASU 2016-16					(2.1)		(2.1)		(2.1)
Current period mark to redemption value of redeemable noncontrolling interest					3.3		3.3		3.3
Net income allocated to redeemable noncontrolling interests							—	(1.8)	(1.8)
Dividends paid to Greif, Inc. shareholders ($1.32 and $1.97 per Class A share and Class B share, respectively)					(77.9)		(77.9)		(77.9)
Dividends paid to noncontrolling interests and other							—	(8.3)	(8.3)
Restricted stock directors	25	1.1	(25)				1.1		1.1
Long-term incentive shares issued	292	11.0	(292)	0.6			11.6		11.6
As of July 31, 2019	48,266	$ 162.6	28,576	$ (134.8)	$ 1,499.1	$ (406.3)	$ 1,120.6	$ 55.0	$ 1,175.6

The following table summarizes the changes in equity for the three and nine month periods ended July 31, 2018 (Dollars in millions, shares in thousands):

	Three-Month Period Ended July 31, 2018								
	Capital Stock		Treasury Stock						
	Common Shares	Amount	Treasury Shares	Amount	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Greif, Inc. Equity	Non controlling interests	Total Equity
As of April 30, 2018	47,949	$ 150.3	28,893	$ (135.4)	$ 1,410.4	$ (338.8)	$ 1,086.5	$ 42.8	$ 1,129.3
Net income					67.7		67.7	4.3	72.0
Other comprehensive income (loss):									
Foreign currency translation						(32.6)	(32.6)	(3.3)	(35.9)
Interest rate derivative, net of income tax benefit of $0.7 million						2.2	2.2		2.2
Minimum pension liability adjustment, net of immaterial income tax						15.6	15.6		15.6
Comprehensive income							52.9		53.9
Current period mark to redemption value of redeemable noncontrolling interest					0.4		0.4		0.4
Net income allocated to redeemable noncontrolling interests							—	(1.0)	(1.0)
Dividends paid to Greif, Inc. shareholders ($0.42 and $0.63 per Class A share and Class B share, respectively)					(24.8)		(24.8)		(24.8)
Dividends paid to noncontrolling interests							—	(0.6)	(0.6)
Restricted stock directors		0.2					0.2		0.2
As of July 31, 2018	47,949	$ 150.5	28,893	$ (135.4)	$ 1,453.7	$ (353.6)	$ 1,115.2	$ 42.2	$ 1,157.4

	Nine-Month Period Ended July 31, 2018								
	Capital Stock		Treasury Stock						
	Common Shares	Amount	Treasury Shares	Amount	Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Greif, Inc. Equity	Non controlling interests	Total Equity
As of October 31, 2017	47,843	$ 144.2	28,999	$ (135.6)	$ 1,360.5	$ (358.2)	$ 1,010.9	$ 36.6	$ 1,047.5
Net income					169.3		169.3	14.7	184.0
Other comprehensive income (loss):									
Foreign currency translation						(20.9)	(20.9)	(2.9)	(23.8)
Interest rate derivative, net of income tax expense of $2.5 million					(0.6)	8.1	7.5		7.5
Minimum pension liability adjustment, net of immaterial income tax						17.4	17.4		17.4
Comprehensive income							173.3		185.1
Current period mark to redemption value of redeemable noncontrolling interest					(1.5)		(1.5)		(1.5)
Net income allocated to redeemable noncontrolling interests							—	(2.9)	(2.9)
Dividends paid to Greif, Inc. shareholders ($1.26 and $1.88 per Class A share and Class B share, respectively)					(74.0)		(74.0)		(74.0)
Dividends paid to noncontrolling interests							—	(3.3)	(3.3)
Restricted stock directors	21	1.2	(21)				1.2		1.2
Long-term incentive shares issued	85	5.1	(85)	0.2			5.3		5.3
As of July 31, 2018	47,949	$ 150.5	28,893	$ (135.4)	$ 1,453.7	$ (353.6)	$ 1,115.2	$ 42.2	$ 1,157.4

The following table provides the rollforward of accumulated other comprehensive loss for the nine months ended July 31, 2019:

(in millions)	Foreign Currency Translation	Derivative Financial Instruments	Minimum Pension Liability Adjustment	Accumulated Other Comprehensive Income (Loss)
Balance as of October 31, 2018	$ (292.8)	$ 13.4	$ (97.7)	$ (377.1)
Other Comprehensive Income (Loss)	(10.7)	(20.7)	2.2	(29.2)
Current-period Other Comprehensive Income (Loss)	(10.7)	(20.7)	2.2	(29.2)
Balance as of July 31, 2019	$ (303.5)	$ (7.3)	$ (95.5)	$ (406.3)

The following table provides the rollforward of accumulated other comprehensive income (loss) for the nine months ended July 31, 2018:

(in millions)	Foreign Currency Translation	Interest Rate Derivative	Minimum Pension Liability Adjustment	Accumulated Other Comprehensive Income (Loss)
Balance as of October 31, 2017	$ (249.3)	$ 5.1	$ (114.0)	$ (358.2)
Other Comprehensive Income (Loss)	(20.9)	8.1	17.4	4.6
Current-period Other Comprehensive Income (Loss)	(20.9)	8.1	17.4	4.6
Balance as of July 31, 2018	$ (270.2)	$ 13.2	$ (96.6)	$ (353.6)

The components of accumulated other comprehensive income (loss) above are presented net of tax, as applicable.

NOTE 16 — BUSINESS SEGMENT INFORMATION

The Company has eight operating segments, which are aggregated into four reportable business segments: Rigid Industrial Packaging & Services; Paper Packaging & Services; Flexible Products & Services; and Land Management.

The Company’s reportable business segments offer different products and services. The accounting policies of the reportable business segments are substantially the same as those described in the “Basis of Presentation and Summary of Significant Accounting Policies” note in the 2018 Form 10-K.

On June 11, 2019, the Company completed the Tholu Acquisition. Tholu is a Netherlands-based leader in IBC rebottling, reconditioning and distribution. The results of Tholu are recorded within the Rigid Industrial Packaging & Services segment, which incorporates IBC packaging services.

On February 11, 2019, the Company completed the Caraustar Acquisition. Caraustar sells a variety of specialty paper products which complement the Company's Paper Packaging & Services specialty portfolio. The results of Caraustar are recorded within the Paper Packaging & Services segment while the Company evaluates the impact of the Caraustar Acquisition on its reportable business segments.

The following tables present net sales disaggregated by geographic area for each reportable segment for the three and nine months ended July 31, 2019:

	Three Months Ended July 31, 2019			
(in millions)	United States	Europe, Middle East and Africa	Asia Pacific and Other Americas	Total
Rigid Industrial Packaging & Services	$ 229.9	$ 296.2	$ 116.0	$ 642.1
Paper Packaging & Services	522.3	—	7.7	530.0
Flexible Products & Services	9.6	57.4	7.5	74.5
Land Management	6.0	—	—	6.0
Total net sales	$ 767.8	$ 353.6	$ 131.2	$ 1,252.6

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(in millions)	Nine Months Ended July 31, 2019 United States	Europe, Middle East and Africa	Asia Pacific and Other Americas	Total
Rigid Industrial Packaging & Services	$ 688.2	$ 831.8	$ 351.6	$ 1,871.6
Paper Packaging & Services	1,231.2	—	13.7	1,244.9
Flexible Products & Services	26.3	177.4	22.9	226.6
Land Management	19.8	—	—	19.8
Total net sales	$ 1,965.5	$ 1,009.2	$ 388.2	$ 3,362.9

The following tables present net sales disaggregated by geographic area for each reportable segment for the three and nine months ended July 31, 2018:

(in millions)	Three Months Ended July 31, 2018 United States	Europe, Middle East and Africa	Asia Pacific and Other Americas	Total
Rigid Industrial Packaging & Services	$ 255.1	$ 306.0	$ 126.5	$ 687.6
Paper Packaging & Services	236.0	—	—	236.0
Flexible Products & Services	9.1	66.5	7.0	82.6
Land Management	5.9	—	—	5.9
Total net sales	$ 506.1	$ 372.5	$ 133.5	$ 1,012.1

(in millions)	Nine Months Ended July 31, 2018 United States	Europe, Middle East and Africa	Asia Pacific and Other Americas	Total
Rigid Industrial Packaging & Services	$ 702.8	$ 874.1	$ 388.8	$ 1,965.7
Paper Packaging & Services	653.7	—	—	653.7
Flexible Products & Services	25.7	200.5	20.5	246.7
Land Management	20.0	—	—	20.0
Total net sales	$ 1,402.2	$ 1,074.6	$ 409.3	$ 2,886.1

The following segment information is presented for the periods indicated:

(in millions)	Three Months Ended July 31, 2019	Three Months Ended July 31, 2018	Nine Months Ended July 31, 2019	Nine Months Ended July 31, 2018
Operating profit:				
Rigid Industrial Packaging & Services	$ 54.3	$ 62.0	$ 124.6	$ 140.4
Paper Packaging & Services	63.1	44.1	128.6	105.0
Flexible Products & Services	5.0	5.8	22.2	14.0
Land Management	3.2	2.1	8.0	7.8
Total operating profit	$ 125.6	$ 114.0	$ 283.4	$ 267.2
Depreciation, depletion and amortization expense:				
Rigid Industrial Packaging & Services	$ 18.6	$ 20.5	$ 57.0	$ 62.2
Paper Packaging & Services	38.9	8.9	81.9	25.6
Flexible Products & Services	1.4	1.8	4.7	5.4
Land Management	1.1	1.2	3.2	3.3
Total depreciation, depletion and amortization expense	$ 60.0	$ 32.4	$ 146.8	$ 96.5

The following table presents total assets by segment and total properties, plants and equipment, net by geographic area:

(in millions)	July 31, 2019	October 31, 2018
Assets:		
Rigid Industrial Packaging & Services	$ 2,106.4	$ 1,963.0
Paper Packaging & Services	2,707.9	474.3
Flexible Products & Services	153.3	153.9
Land Management	346.1	347.2
Total segments	5,313.7	2,938.4
Corporate and other	238.7	256.4
Total assets	$ 5,552.4	$ 3,194.8
Properties, plants and equipment, net:		
United States	$ 1,295.3	$ 796.3
Europe, Middle East and Africa	265.6	276.9
Asia Pacific and other Americas	117.1	118.7
Total properties, plants and equipment, net	$ 1,678.0	$ 1,191.9

NOTE 17 — REDEEMABLE NONCONTROLLING INTERESTS

Mandatorily Redeemable Noncontrolling Interests

The terms of the joint venture agreement for one joint venture within the Rigid Industrial Packaging & Services segment include mandatory redemption by the Company, in cash, of the noncontrolling interest holders' equity at a formulaic price after the expiration of a lockout period specific to each noncontrolling interest holder. The redemption features cause the interest to be classified as a mandatorily redeemable instrument under the accounting guidance, and this interest is included at the current redemption value each period in long-term or short-term liabilities of the Company, as applicable. The impact of marking to redemption value at each period end is recorded in interest expense. The Company has a contractual obligation to redeem the outstanding equity interest of each remaining partner in 2021 and 2022, respectively.

The following table summarizes the change in mandatorily redeemable noncontrolling interest for the nine months ended July 31, 2019:

(in millions)	Mandatorily Redeemable Noncontrolling Interest
Balance as of October 31, 2018	$ 8.6
Current period mark to redemption value	(0.2)
Balance as of July 31, 2019	$ 8.4

Redeemable Noncontrolling Interests

Redeemable noncontrolling interests related to two joint ventures within the Paper Packaging & Services segment and one joint venture within the Rigid Industrial Packaging & Services segment are held by the respective noncontrolling interest owners. The holders of these interests share in the profits and losses of these entities on a pro rata basis with the Company. However, the noncontrolling interest owners have the right to put all or a portion of those noncontrolling interests to the Company at a formulaic price after a set period of time, specific to each agreement.

On November 15, 2018, one of the noncontrolling interest owners related to one of the Paper Packaging & Services joint ventures exercised their put option for all of their ownership interest. As of July 31, 2019, the Company made a payment for approximately $10.1 million to the noncontrolling interest owner. The Company also entered into a Stock Purchase Agreement with another noncontrolling interest owner related to the same Paper Packaging & Services joint venture, pursuant to which the owner received a $1.8 million payment for certain of its equity.

Redeemable noncontrolling interests are reflected in the interim condensed consolidated balance sheets at redemption value. The following table summarizes the change in redeemable noncontrolling interest for the nine months ended July 31, 2019:

(in millions)		Redeemable Noncontrolling Interest
Balance as of October 31, 2018	$	35.5
Current period mark to redemption value		(3.3)
Repurchase of redeemable shareholder interest		(11.9)
Redeemable noncontrolling interest share of income and other		1.8
Dividends to redeemable noncontrolling interest and other		0.4
Balance as of July 31, 2019	$	22.5

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

GENERAL

The terms "Greif," "our company," "we," "us" and "our" as used in this discussion refer to Greif, Inc. and its subsidiaries. Our fiscal year begins on November 1 and ends on October 31 of the following year. Any references in this Form 10-Q to the years 2019 or 2018, or to any quarter of those years, relates to the fiscal year or quarter, as the case may be, ended in that year.

The discussion and analysis presented below relates to the material changes in financial condition and results of operations for our interim condensed consolidated balance sheets as of July 31, 2019 and October 31, 2018, and for the interim condensed consolidated statements of income for the three and nine months ended July 31, 2019 and 2018. This discussion and analysis should be read in conjunction with the interim condensed consolidated financial statements that appear elsewhere in this Form 10-Q and "Management's Discussion and Analysis of Financial Condition and Results of Operations" included in our Annual Report on Form 10-K for the fiscal year ended October 31, 2018 (the "2018 Form 10-K"). Readers are encouraged to review the entire 2018 Form 10-K, as it includes information regarding Greif not discussed in this Form 10-Q. This information will assist in your understanding of the discussion of our current period financial results.

All statements, other than statements of historical facts, included in this Form 10-Q, including without limitation, statements regarding our future financial position, business strategy, budgets, projected costs, goals, trends and plans and objectives of management for future operations, are forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended. Forward-looking statements generally can be identified by the use of forward-looking terminology such as "may," "will," "expect," "intend," "estimate," "anticipate," "aspiration," "objective," "project," "believe," "continue," "on track" or "target" or the negative thereof or variations thereon or similar terminology. All forward-looking statements made in this Form 10-Q are based on assumptions, expectations and other information currently available to management. Although we believe that the expectations reflected in forward-looking statements have a reasonable basis, we can give no assurance that these expectations will prove to be correct.

Forward-looking statements are subject to risks and uncertainties that could cause our actual results to differ materially from those forecasted, projected or anticipated, whether expressed in or implied by the statements. Such risks and uncertainties that might cause a difference include, but are not limited to, the following: (i) historically, our business has been sensitive to changes in general economic or business conditions, (ii) we may not successfully implement our business strategies, including achieving our transformation and growth objectives, (iii) our operations subject us to currency exchange and political risks that could adversely affect our results of operations, (iv) the current and future challenging global economy and disruption and volatility of the financial and credit markets may adversely affect our business, (v) the continuing consolidation of our customer base and suppliers may intensify pricing pressure, (vi) we operate in highly competitive industries, (vii) our business is sensitive to changes in industry demands, (viii) raw material and energy price fluctuations and shortages may adversely impact our manufacturing operations and costs, (ix) changes in U.S. trade policies could impact the cost of imported goods into the U.S., which may materially impact our revenues or increase our operating costs, (x) the results of the United Kingdom's referendum on withdrawal from the European Union may have a negative effect on global economic conditions, financial markets and our business, (xi) geopolitical conditions, including direct or indirect acts of war or terrorism, could have a material adverse effect on our operations and financial results, (xii) we may encounter difficulties arising from acquisitions, including the inability to realize projected synergies (xiii) in connection with acquisitions or divestitures, we may become subject to liabilities (xiv) we may incur additional restructuring costs and there is no guarantee that our efforts to reduce costs will be successful, (xv) we could be subject to changes in our tax rates, the adoption of new U.S. or foreign tax legislation or exposure to additional tax liabilities, (xvi) full realization of our deferred tax assets may be affected by a number of factors, (xvii) several operations are conducted by joint ventures that we cannot operate solely for our benefit, (xviii) certain of the agreements that govern our joint ventures provide our partners with put or call options, (xix) our ability to attract, develop and retain talented and qualified employees, managers and executives is critical to our success, (xx) our business may be adversely impacted by work stoppages and other labor relations matters, (xxi) we may not successfully identify illegal immigrants in our workforce, (xxii) our pension and postretirement plans are underfunded and will require future cash contributions and our required future cash contributions could be higher than we expect, each of which could have a material adverse effect on our financial condition and liquidity, (xxiii) we may be subject to losses that might not be covered in whole or in part by existing insurance reserves or insurance coverage, (xxiv) our business depends on the uninterrupted operations of our facilities, systems and business functions, including our information technology and other business systems, (xxv) a security breach of customer, employee, supplier or Company information may have a material adverse effect on our business, financial condition and results of operations, (xxvi) legislation/regulation related to environmental and health and safety matters and corporate social responsibility could negatively impact our operations and financial performance, (xxvii) product liability claims and other legal proceedings could adversely affect our operations and financial performance, (xxviii) we may incur fines or penalties, damage to our reputation or other adverse consequences if our employees, agents or business partners violate, or are alleged to have violated, anti-bribery, competition or other laws, (xxix) changing climate, climate change regulations and greenhouse gas effects may adversely affect our operations and financial performance, (xxx) the frequency and volume of our timber and timberland sales will impact our financial performance, (xxxi) changes in U.S. generally accepted accounting principles (U.S. GAAP) and SEC rules and regulations could materially impact our reported results, (xxxii) if we fail to maintain an effective system of internal control, we may not be able to accurately report financial results or prevent fraud, and (xxxiii) we have a significant amount of goodwill and long-lived assets which, if impaired in the future, would adversely impact our results of operations. The risks described above are not all-inclusive, and given these and other possible risks and uncertainties, investors should not place undue reliance on forward-looking statements as a prediction of actual results. For a detailed discussion of the most significant risks and uncertainties that could cause our actual results to differ materially from those forecasted, projected or anticipated, see “Risk Factors” in Part I, Item 1A of our most recently filed Form 10-K and our other filings with the Securities and Exchange Commission. All forward-looking statements made in this Form 10-Q are expressly qualified in their entirety by reference to such risk factors. Except to the limited extent required by applicable law, we undertake no obligation to update or revise any forward-looking statements, whether as a result of new information, future events or otherwise.

OVERVIEW

Business Segments

We operate in four reportable business segments: Rigid Industrial Packaging & Services; Paper Packaging & Services; Flexible Products & Services; and Land Management.

We are a leading global producer of rigid industrial packaging products, such as steel, fibre and plastic drums, rigid intermediate bulk containers, closure systems for industrial packaging products, transit protection products, water bottles and remanufactured and reconditioned industrial containers, and services, such as container life cycle management, filling, logistics, warehousing and other packaging services. We sell our industrial packaging products and services to customers in industries such as chemicals, paints and pigments, food and beverage, petroleum, industrial coatings, agricultural, pharmaceutical and minerals, among others.

We produce and sell containerboard, corrugated sheets, corrugated containers, and other corrugated and specialty products to customers in North America. Our corrugated container products are used to ship such diverse products as home appliances, small machinery, grocery products, building products, automotive components, books and furniture, as well as numerous other applications. We also produce and sell coated and uncoated recycled paperboard, which we use to produce industrial products (tubes and cores, construction products, protective packaging, and adhesives) and consumer packaging products (folding cartons, set-up boxes, and packaging services), that we sell. In addition, we purchase and sell recycled fiber. Customer industries and end markets include food and food services, packaging, automotive, and building and housing products.

We are a leading global producer of flexible intermediate bulk containers and related services. Our flexible intermediate bulk containers consist of a polypropylene-based woven fabric that is produced at our production sites, as well as sourced from strategic regional suppliers. Our flexible products are sold globally and service similar customers and market segments as our Rigid Industrial Packaging & Services segment. Additionally, our flexible products significantly expand our presence in the agricultural and food industries, among others.

As of July 31, 2019, we owned approximately 251,000 acres of timber properties in the southeastern United States. Our Land Management team is focused on the active harvesting and regeneration of our United States timber properties to achieve sustainable long-term yields. While timber sales are subject to fluctuations, we seek to maintain a consistent cutting schedule, within the limits of market and weather conditions. We also sell, from time to time, timberland and special use properties, which consist of surplus properties, higher and better use (“HBU”) properties and development properties.

CRITICAL ACCOUNTING POLICIES

The discussion and analysis of our financial condition and results of operations are based upon our interim condensed consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States (“GAAP”). The preparation of these interim condensed consolidated financial statements, in accordance with these principles, require us to make estimates and assumptions that affect the reported amount of assets and liabilities, revenues and expenses, and related disclosure of contingent assets and liabilities as of the date of our interim condensed consolidated financial statements.

Our critical accounting policies are discussed in Part II, Item 7 – Management’s Discussion and Analysis of Financial Condition and Results of Operations of the 2018 Form 10-K. We believe that the consistent application of these policies enables us to provide readers of the interim condensed consolidated financial statements with useful and reliable information about our results of operations and financial condition. No material changes to our critical accounting policies, as previously disclosed, have occurred during the first nine months of 2019, except for changes to our business combination and revenue recognition policies as discussed below and in Note 2 to the interim condensed consolidated financial statements included in Item 1 of this Form 10-Q.

Business Combinations

We completed our acquisition of Caraustar Industries, Inc. and its subsidiaries (“Caraustar”) on February 11, 2019 (the “Caraustar Acquisition”) and our acquisition of Tholu B.V. and its wholly owned subsidiary A. Thomassen Transport B.V. (collectively "Tholu") on June 11, 2019 (the "Tholu Acquisition"). The Caraustar Acquisition significantly expanded the Paper Packaging & Services segment portfolio. Caraustar's and Tholu's results of operations have been included in our financial results for the period subsequent to their respective acquisition date.

Under the acquisition method of accounting, we allocate the fair value of purchase consideration transferred to the tangible and intangible assets acquired and liabilities assumed based on their estimated fair values on the date of the acquisition. The fair values assigned, defined as the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between willing market participants, are based on estimates and assumptions determined by management. The excess purchase consideration over the aggregate fair value of tangible and intangible assets, net of liabilities assumed, is recorded as goodwill.

When determining the fair value of assets acquired and liabilities assumed, we make significant estimates and assumptions, especially with respect to intangible assets. Our estimates of fair value are based upon assumptions believed to be reasonable, but which are inherently uncertain and unpredictable and, as a result, actual results may differ from estimates.

During the measurement period, not to exceed one year from the date of acquisition, we may record adjustments to the assets acquired and liabilities assumed, with a corresponding offset to goodwill if new information is obtained related to facts and circumstances that existed as of the acquisition date. After the measurement period, any subsequent adjustments are reflected in the consolidated statements of operations. Acquisition costs, such as legal and consulting fees, are expensed as incurred.

See Note 3 to the interim condensed consolidated financial statements included in Item 1 of this Form 10-Q.

Recently Issued and Newly Adopted Accounting Standards

See Note 1 to the interim condensed consolidated financial statements included in Item 1 of this Form 10-Q for a detailed description of recently issued and newly adopted accounting standards.

RESULTS OF OPERATIONS

The following comparative information is presented for the three and nine months ended July 31, 2019 and 2018. Historical revenues and earnings may or may not be representative of future operating results as a result of various economic and other factors.

Items that could have a significant impact on the financial statements include the risks and uncertainties listed in Part I, Item 1A — Risk Factors, of the 2018 Form 10-K. Actual results could differ materially using different estimates and assumptions, or if conditions are significantly different in the future.

The non-GAAP financial measure of Adjusted EBITDA is used throughout the following discussion of our results of operations, both for our consolidated and segment results. For our consolidated results, EBITDA, also a non-GAAP financial measure, is defined as net income, plus interest expense, net, including debt extinguishment charges, plus income tax expense, plus depreciation, depletion and amortization. Adjusted EBITDA is defined as net income, plus interest expense, net, including debt extinguishment charges, plus income tax expense, plus depreciation, depletion and amortization expense, plus restructuring charges, plus acquisition-related costs, plus non-cash impairment charges, plus non-cash pension settlement charges, less (gain) loss on disposal of properties, plants, equipment and businesses, net. Since we do not calculate net income by business segment, Adjusted EBITDA by business segment is reconciled to operating profit by business segment less other (income) expense, net, less equity earnings of unconsolidated affiliates, net of tax, plus depreciation, depletion and amortization expense, plus restructuring charges, plus acquisition-related costs, plus non-cash asset impairment charges, plus non-cash pension settlement charges, less (gain) loss on disposal of properties, plants, equipment and businesses, net. We use Adjusted EBITDA as one of the financial measures to evaluate our historical and ongoing operations and believe that this non-GAAP financial measure is useful to enable investors to perform meaningful comparisons of our historical and current performance. In addition, we present our U.S. and non-U.S. income before income taxes after eliminating the impact of non-cash asset impairment charges, non-cash pension settlement charges, restructuring charges, debt extinguishment charges, acquisition-related costs and (gains) losses on sales of businesses, net, which are non-GAAP financial measures. We believe that excluding the impact of these adjustments enable investors to perform a meaningful comparison of the geographic source of our income before income tax expense and is information that investors find valuable. The foregoing non-GAAP financial measures are intended to supplement and should be read together with our financial results. These non-GAAP financial measures should not be considered an alternative or substitute for, and should not be considered superior to, our reported financial results. Accordingly, users of this financial information should not place undue reliance on the non-GAAP financial measures.

Third Quarter Results

The following table sets forth the net sales, operating profit, EBITDA and Adjusted EBITDA for each of our business segments for the three months ended July 31, 2019 and 2018:

	Three Months Ended July 31,	
(in millions)	**2019**	**2018**
Net sales:		
Rigid Industrial Packaging & Services	$ 642.1	$ 687.6
Paper Packaging & Services	530.0	236.0
Flexible Products & Services	74.5	82.6
Land Management	6.0	5.9
Total net sales	$ 1,252.6	$ 1,012.1
Operating profit:		
Rigid Industrial Packaging & Services	$ 54.3	$ 62.0
Paper Packaging & Services	63.1	44.1
Flexible Products & Services	5.0	5.8
Land Management	3.2	2.1
Total operating profit	$ 125.6	$ 114.0
EBITDA:		
Rigid Industrial Packaging & Services	$ 74.3	$ 78.3
Paper Packaging & Services	103.2	52.8
Flexible Products & Services	7.1	7.8
Land Management	4.3	3.3
Total EBITDA	$ 188.9	$ 142.2
Adjusted EBITDA:		
Rigid Industrial Packaging & Services	$ 82.8	$ 82.8
Paper Packaging & Services	111.0	53.1
Flexible Products & Services	7.2	7.8
Land Management	2.8	2.6
Total Adjusted EBITDA	$ 203.8	$ 146.3

The following table sets forth EBITDA and Adjusted EBITDA, reconciled to net income and operating profit, for our consolidated results for the three months ended July 31, 2019 and 2018:

	Three Months Ended July 31,	
(in millions)	2019	2018
Net income	$ 67.5	$ 72.0
Plus: interest expense, net	34.5	12.1
Plus: debt extinguishment charges	0.1	—
Plus: income tax expense	26.8	25.7
Plus: depreciation, depletion and amortization expense	60.0	32.4
EBITDA	$ 188.9	$ 142.2
Net income	$ 67.5	$ 72.0
Plus: interest expense, net	34.5	12.1
Plus: non-cash pension settlement charges	—	0.4
Plus: debt extinguishment charges	0.1	—
Plus: income tax expense	26.8	25.7
Plus: other (income) expense, net	(1.1)	4.8
Plus: equity earnings of unconsolidated affiliates, net of tax	(2.2)	(1.0)
Operating profit	125.6	114.0
Less: other (income) expense, net	(1.1)	4.8
Less: non-cash pension settlement charges	—	0.4
Less: equity earnings of unconsolidated affiliates, net of tax	(2.2)	(1.0)
Plus: depreciation, depletion and amortization expense	60.0	32.4
EBITDA	$ 188.9	$ 142.2
Plus: restructuring charges	9.1	3.7
Plus: acquisition-related costs	5.8	0.5
Plus: non-cash asset impairment charges	—	0.8
Plus: non-cash pension settlement charges	—	0.4
Plus: gain on disposal of properties, plants, equipment, and businesses, net	—	(1.3)
Adjusted EBITDA	$ 203.8	$ 146.3

The following table sets forth EBITDA and Adjusted EBITDA for our business segments, reconciled to the operating profit for each segment, for the three months ended July 31, 2019 and 2018:

	Three Months Ended July 31,	
(in millions)	**2019**	**2018**
Rigid Industrial Packaging & Services		
Operating profit	54.3	62.0
Less: other income, net	0.8	4.8
Less: non-cash pension settlement charges	—	0.4
Less: equity earnings of unconsolidated affiliates, net of tax	(2.2)	(1.0)
Plus: depreciation and amortization expense	18.6	20.5
EBITDA	$ 74.3	$ 78.3
Plus: restructuring charges	7.0	3.3
Plus: acquisition-related costs	0.1	0.5
Plus: non-cash asset impairment charges	—	0.8
Plus: non-cash pension settlement charges	—	0.4
Less: (gain) loss on disposal of properties, plants, equipment, and businesses, net	1.4	(0.5)
Adjusted EBITDA	$ 82.8	$ 82.8
Paper Packaging & Services		
Operating profit	63.1	44.1
Less: other (income) expense, net	(1.2)	0.2
Plus: depreciation and amortization expense	38.9	8.9
EBITDA	$ 103.2	$ 52.8
Plus: restructuring charges	2.1	0.3
Plus: acquisition-related costs	5.7	—
Adjusted EBITDA	$ 111.0	$ 53.1
Flexible Products & Services		
Operating profit	5.0	5.8
Less: other income, net	(0.7)	(0.2)
Plus: depreciation and amortization expense	1.4	1.8
EBITDA	$ 7.1	$ 7.8
Plus: restructuring charges	—	0.1
Less: (gain) loss on disposal of properties, plants, equipment, net	0.1	(0.1)
Adjusted EBITDA	$ 7.2	$ 7.8
Land Management		
Operating profit	3.2	2.1
Plus: depreciation, depletion and amortization expense	1.1	1.2
EBITDA	$ 4.3	$ 3.3
Less: gain on disposal of properties, plants, equipment, net	(1.5)	(0.7)
Adjusted EBITDA	$ 2.8	$ 2.6

Net Sales

Net sales were $1,252.6 million for the third quarter of 2019 compared with $1,012.1 million for the third quarter of 2018. The $240.5 million increase was primarily due to the sales contributed by the acquired Caraustar operations, partially offset by lower volumes in certain regions and the impact of foreign currency translation. See the "Segment Review" below for additional information on net sales by segment for the third quarter of 2019.

Gross Profit

Gross profit was $279.4 million for the third quarter of 2019 compared with $217.1 million for the third quarter of 2018. The respective reasons for the change in each segment are described below in the "Segment Review." Gross profit margin was 22.3 percent for the third quarter of 2019 compared with 21.5 percent for the third quarter of 2018.

Selling, General and Administrative Expenses

Selling, general and administrative ("SG&A") expenses were $138.9 million for the third quarter of 2019 and $99.4 million for the third quarter of 2018. This increase was primarily due to expenses attributable to the acquired Caraustar operations, partially offset by a decrease in salaries and benefits costs. SG&A expenses were 11.1 percent of net sales for the third quarter of 2019 compared with 9.8 percent of net sales for the third quarter of 2018.

Restructuring Charges

Restructuring charges were $9.1 million for the third quarter of 2019 compared with $3.7 million for the third quarter of 2018. See Note 7 to the interim condensed consolidated financial statements included in Item 1 of this Form 10-Q for additional information on the restructuring charges reported for the third quarter of 2019.

Gain on Disposal of Properties, Plants and Equipment, net

The gain on disposal of properties, plants and equipment, net was $1.3 million and $1.4 million for the third quarter of 2019 and 2018, respectively. See Note 5 to the interim condensed consolidated financial statements included in Item 1 of this Form 10-Q for additional information on the gain reported for the third quarter of 2019.

Loss on Disposal of Businesses, net

The loss on disposal of business, net was $1.3 million and $0.1 million for the third quarter of 2019 and 2018, respectively. See Note 3 to the interim condensed consolidated financial statements included in Item 1 of this Form 10-Q for additional information on the loss reported for the third quarter of 2019.

Financial Measures

Operating profit was $125.6 million for the third quarter of 2019 compared with $114.0 million for the third quarter of 2018. Net income was $67.5 million for the third quarter of 2019 compared with $72.0 million for the third quarter of 2018. Adjusted EBITDA was $203.8 million for the third quarter of 2019 compared with $146.3 million for the third quarter of 2018. The $57.5 million increase in Adjusted EBITDA was primarily due to the contribution from the acquired Caraustar operations, partially offset by lower volumes and a negative impact from foreign currency translation.

Trends

We anticipate the global macroeconomic conditions to continue to be soft through 2019 due to weak industrial demand. In our Paper Packaging & Services segment, containerboard demand is expected to remain soft in the U.S. and the rest of the world during the remainder of the fiscal year. In our Rigid Industrial Packaging & Services segment, we anticipate continued softness in Western and Central Europe, China and the U.S.

Segment Review

Rigid Industrial Packaging & Services

Our Rigid Industrial Packaging & Services segment offers a comprehensive line of rigid industrial packaging products, such as steel, fibre and plastic drums, rigid intermediate bulk containers, closure systems for industrial packaging products, transit protection products, water bottles and remanufactured and reconditioned industrial containers, and services, such as container life cycle management, filling, logistics, warehousing and other packaging services. Key factors influencing profitability in the Rigid Industrial Packaging & Services segment are:

- Selling prices, product mix, customer demand and sales volumes;
- Raw material costs, primarily steel, resin, containerboard and used industrial packaging for reconditioning;
- Energy and transportation costs;
- Benefits from executing the Greif Business System;
- Restructuring charges;

- Divestiture of businesses and facilities; and
- Impact of foreign currency translation.

Net sales were $642.1 million for the third quarter of 2019 compared with $687.6 million for the third quarter of 2018. The $45.5 million decrease in net sales was due primarily to decreased volumes in certain regions and the impact of foreign currency translation, partially offset by an increase in selling prices due to strategic pricing decisions.

Gross profit was $126.5 million for the third quarter of 2019 compared with $138.8 million for the third quarter of 2018. The $12.3 million decrease in gross profit was primarily due to the same factors that impacted net sales. The prior year period included a one-time freight expense adjustment that positively impacted gross profit by $4.6 million. Gross profit margin decreased to 19.7 percent from 20.2 percent for the three months ended July 31, 2019 and 2018, respectively.

Operating profit was $54.3 million for the third quarter of 2019 compared with operating profit of $62.0 million for the third quarter of 2018. The decrease in operating profit was primarily due to the same factors that impacted net sales, partially offset by a decrease in the segment's SG&A expense as a result of decreased performance based compensation. Adjusted EBITDA was $82.8 million for the third quarter of 2019, which was flat in comparison to $82.8 million for the third quarter of 2018.

Paper Packaging & Services

Our Paper Packaging & Services segment produces and sells containerboard, corrugated sheets, corrugated containers, and other corrugated and specialty products to customers in North America. We also produce and sell coated and uncoated recycled paperboard, which we use to produce industrial products (tubes and cores, construction products, protective packaging, and adhesives) and consumer packaging products (folding cartons, set-up boxes, and packaging services) that we sell. In addition, we purchase and sell recycled fiber. Key factors influencing profitability in the Paper Packaging & Services segment are:

- Selling prices, product mix, customer demand and sales volumes;
- Raw material costs, primarily old corrugated containers;
- Energy and transportation costs;
- Benefits from executing the Greif Business System; and
- Restructuring charges.

Net sales increased $294.0 million to $530.0 million for the third quarter of 2019 compared with $236.0 million for the third quarter of 2018, primarily due to $320.4 million of contribution from the acquired Caraustar operations, partially offset by lower containerboard sales prices and decreased volumes.

Gross profit was $134.7 million for the third quarter of 2019 compared with $59.5 million for the third quarter of 2018. The increase in gross profit was primarily due to $81.6 million of contribution from the acquired Caraustar operations, partially offset by the same factors that impacted net sales. Gross profit margin was 25.4 percent and 25.2 percent for the third quarters of 2019 and 2018, respectively. The increase in gross profit margin was primarily due to the same factors that impacted gross profit.

Operating profit was $63.1 million for the third quarter of 2019 compared with $44.1 million for the third quarter of 2018. Adjusted EBITDA was $111.0 million for the third quarter of 2019 compared with $53.1 million for the third quarter of 2018. The $57.9 million increase in Adjusted EBITDA was due primarily to $65.4 million of contribution from the acquired Caraustar operations, partially offset by the same factors that impacted net sales.

Flexible Products & Services

Our Flexible Products & Services segment offers a comprehensive line of flexible products, such as flexible intermediate bulk containers. Key factors influencing profitability in the Flexible Products & Services segment are:

- Selling prices, product mix, customer demand and sales volumes;
- Raw material costs, primarily resin;
- Energy and transportation costs;
- Benefits from executing the Greif Business System;
- Divestiture of businesses and facilities; and

- Impact of foreign currency translation.

Net sales decreased $8.1 million to $74.5 million for the third quarter of 2019 compared with $82.6 million for the third quarter of 2018. The decrease was primarily due to volume decreases and the impact of foreign currency translation, partially offset by product mix.

Gross profit was $16.0 million for the third quarter of 2019 compared with $16.7 million for the third quarter of 2018. The decrease was primarily due to the same factors that impacted net sales, partially offset by decreased raw material costs. The increase in gross profit margin to 21.5 percent for the third quarter of 2019 from 20.2 percent for the third quarter of 2018 was primarily due to decreased raw material costs.

Operating profit was $5.0 million for the third quarter of 2019 compared with $5.8 million for the third quarter of 2018. Adjusted EBITDA was $7.2 million for the third quarter of 2019 compared with $7.8 million for the third quarter of 2018. The decrease in Adjusted EBITDA was primarily due to the same factors that impacted gross profit.

Land Management

As of July 31, 2019, our Land Management segment consisted of approximately 251,000 acres of timber properties in the southeastern United States. Key factors influencing profitability in the Land Management segment are:

- Planned level of timber sales;
- Selling prices and customer demand;
- Gains on timberland sales; and
- Gains on the disposal of development, surplus and HBU properties (“special use property”).

In order to maximize the value of our timber property, we continue to review our current portfolio and explore the development of certain of these properties in the United States. This process has led us to characterize our property as follows:

- Surplus property, meaning land that cannot be efficiently or effectively managed by us, whether due to parcel size, lack of productivity, location, access limitations or for other reasons.
- HBU property, meaning land that in its current state has a higher market value for uses other than growing and selling timber.
- Development property, meaning HBU land that, with additional investment, may have a significantly higher market value than its HBU market value.
- Core Timberland, meaning land that is best suited for growing and selling timber.

We report the disposal of surplus and HBU property in our interim condensed consolidated statements of income under “gain on disposals of properties, plants and equipment and businesses, net” and report the sale of development property under “net sales” and “cost of products sold.” All HBU, development and surplus property is used by us to productively grow and sell timber until sold. Timberland gains are recorded as gains on disposals of properties, plants and equipment, net.

Whether timberland has a higher value for uses other than growing and selling timber is a determination based upon several variables, such as proximity to population centers, anticipated population growth in the area, the topography of the land, aesthetic considerations, including access to water, the condition of the surrounding land, availability of utilities, markets for timber and economic considerations both nationally and locally. Given these considerations, the characterization of land is not a static process, but requires an ongoing review and re-characterization as circumstances change.

As of July 31, 2019, we had approximately 18,800 acres of special use property in the United States.

Net sales increased to $6.0 million for the third quarter of 2019 compared with $5.9 million for the third quarter of 2018.

Operating profit increased to $3.2 million for the third quarter of 2019 compared with $2.1 million for the third quarter of 2018. Adjusted EBITDA was $2.8 million and $2.6 million for the third quarters of 2019 and 2018, respectively.

Other Income Statement Changes

Interest expense, net

Interest expense, net, was $34.5 million for the third quarter of 2019 compared with $12.1 million for the third quarter of 2018. This increase was primarily due to the incremental debt incurred in connection with the Caraustar Acquisition, partially offset by the impact of interest rate derivative financial assets.

U.S. and non-U.S. Income before Income Tax Expense

Refer to the following tables for details of the U.S. and non-U.S. income before income taxes and U.S. and non-U.S. income before income taxes after eliminating the impact of non-cash asset impairment charges, restructuring charges, acquisition-related costs, debt extinguishment charges, and (gains) losses on sales of businesses (collectively, "Special Items").

Summary

	Three Months Ended July 31,	
	2019	**2018**
Non-U.S. % of Consolidated Net Sales	38.7%	50.0%
U.S. % of Consolidated Net Sales	61.3%	50.0%
	100.0%	100.0%
Non-U.S. % of Consolidated I.B.I.T.	45.0%	34.8%
U.S. % of Consolidated I.B.I.T.	55.0%	65.2%
	100.0%	100.0%
Non-U.S. % of Consolidated I.B.I.T. before Special Items	43.8%	36.1%
U.S. % of Consolidated I.B.I.T. before Special Items	56.2%	63.9%
	100.0%	100.0%

Non-U.S. I.B.I.T. Reconciliation

(in millions)	Three Months Ended July 31,	
	2019	**2018**
Non-U.S. I.B.I.T.	$ 41.5	$ 33.7
Non-cash asset impairment charges	—	0.6
Non-cash pension settlement charges	—	0.4
Restructuring charges	6.0	1.9
Acquisition-related costs	0.1	0.5
(Gain) loss on sale of businesses, net	(0.1)	0.1
Total Non-U.S. Special Items	6.0	3.5
Non-U.S. I.B.I.T. before Special Items	$ 47.5	$ 37.2

U.S. I.B.I.T. Reconciliation

(in millions)	Three Months Ended July 31, 2019	2018
U.S. I.B.I.T.	$ 50.6	$ 63.0
Non-cash asset impairment charges	—	0.2
Restructuring charges	3.1	1.8
Acquisition-related costs	5.7	—
Debt extinguishment charges	0.1	—
Loss on sale of businesses, net	1.4	—
Total U.S. Special Items	10.3	2.0
U.S. I.B.I.T. before Special Items	$ 60.9	$ 65.0

I.B.I.T. is Income Before Income Tax Expense

Income tax expense

Our quarterly income tax expense was computed in accordance with ASC 740-270 "Income Taxes - Interim Reporting." In accordance with this accounting standard, annual estimated tax expense is computed based on forecasted annual earnings and other forecasted annual amounts, including, but not limited to items such as uncertain tax positions and withholding taxes. Additionally, losses from jurisdictions for which a valuation allowance has been provided have not been included in the annual estimated tax rate. Income tax expense each quarter is provided for on a current year-to-date basis using the annual estimated tax rate, adjusted for discrete taxable events that occur during the interim period.

Income tax expense for the third quarter of 2019 was $26.8 million on $92.1 million of pretax income and income tax expense for the third quarter of 2018 was $25.7 million on $96.7 million of pretax income. The increase to income tax expense was primarily caused by changes in the expected mix of earnings among tax jurisdictions. This increase was offset by a provisional net tax benefit of $1.1 million for the addition of Caraustar and other discrete tax benefits of $0.3 million. Income tax expense for the third quarter of 2018 included net discrete tax benefits of $0.1 million.

We are subject to audits by U.S. federal, state and local tax authorities and foreign tax authorities. We believe that adequate provisions have been made for any adjustments that may result from tax examinations. However, the outcome of tax audits cannot be predicted with certainty. If any issues addressed in the tax audits are resolved in a manner not consistent with management’s expectations, we could be required to adjust its provision for income taxes in the period such resolution occurs.

The estimated net decrease in unrecognized tax benefits for the next 12 months ranges from zero to $6.5 million. Actual results may differ materially from this estimate.

Net income attributable to noncontrolling interests

Net income attributable to noncontrolling interests represents the portion of earnings from the operations of our majority owned subsidiaries that was subtracted from net income to arrive at net income attributable to us. Net income attributable to noncontrolling interests for the third quarters of 2019 and 2018 was $4.8 million and $4.3 million, respectively. The increase was primarily due to an increase in the net operating profit of the Flexible Products & Services segment joint venture that was formed in 2010 by Greif, Inc. and one of its indirect subsidiaries with Dabbagh Group Holding Company Limited and one of its subsidiaries (referred to herein as the “Flexible Packaging JV” or “FPS VIE”).

Net income attributable to Greif, Inc.

Based on the above, net income attributable to Greif, Inc. was $62.7 million for the third quarter of 2019 compared to $67.7 million for the third quarter of 2018.

OTHER COMPREHENSIVE INCOME (LOSS) CHANGES

Foreign currency translation

In accordance with ASC 830, "Foreign Currency Matters," the assets and liabilities denominated in a foreign currency are translated into United States Dollars at the rate of exchange existing at the end of the current period, and revenues and expenses are translated at average exchange rates over the month in which they are incurred. The cumulative translation adjustments, which represent the effects of translating assets and liabilities of our international operations, are presented in the interim condensed consolidated statements of changes in equity in accumulated other comprehensive income (loss).

Minimum pension liability, net

Change in minimum pension liability, net was $2.3 million and $15.6 million for the third quarters of 2019 and 2018, respectively. During the third quarter of 2018 we made a one-time $65.0 million contribution to the U.S. Defined Benefit Plan that resulted in a mid-year valuation of the plan and negatively impacted our minimum pension liability, net by $11.0 million.

Year-to-Date Results

The following table sets forth the net sales, operating profit, EBITDA and Adjusted EBITDA for each of our business segments for the nine months ended July 31, 2019 and 2018:

	Nine Months Ended July 31,	
(in millions)	**2019**	**2018**
Net sales:		
Rigid Industrial Packaging & Services	$ 1,871.6	$ 1,965.7
Paper Packaging & Services	1,244.9	653.7
Flexible Products & Services	226.6	246.7
Land Management	19.8	20.0
Total net sales	$ 3,362.9	$ 2,886.1
Operating profit:		
Rigid Industrial Packaging & Services	$ 124.6	$ 140.4
Paper Packaging & Services	128.6	105.0
Flexible Products & Services	22.2	14.0
Land Management	8.0	7.8
Total operating profit	$ 283.4	$ 267.2
EBITDA:		
Rigid Industrial Packaging & Services	$ 180.0	$ 189.1
Paper Packaging & Services	212.6	129.9
Flexible Products & Services	27.8	20.0
Land Management	11.2	11.1
Total EBITDA	$ 431.6	$ 350.1
Adjusted EBITDA:		
Rigid Industrial Packaging & Services	$ 200.4	$ 202.4
Paper Packaging & Services	239.6	130.2
Flexible Products & Services	22.8	20.3
Land Management	9.3	8.8
Total Adjusted EBITDA	$ 472.1	$ 361.7

The following table sets forth EBITDA and Adjusted EBITDA, reconciled to net income and operating profit, for our consolidated results for the nine months ended July 31, 2019 and 2018:

	Nine Months Ended July 31,	
(in millions)	2019	2018
Net income	$ 124.4	$ 184.0
Plus: interest expense, net	80.1	38.4
Plus: debt extinguishment charges	22.0	—
Plus: income tax expense	58.3	31.2
Plus: depreciation, depletion and amortization expense	146.8	96.5
EBITDA	$ 431.6	$ 350.1
Net income	$ 124.4	$ 184.0
Plus: interest expense, net	80.1	38.4
Plus: debt extinguishment charges	22.0	—
Plus: non-cash pension settlement charges	—	0.4
Plus: income tax expense	58.3	31.2
Plus: other expense, net	1.0	15.0
Plus: equity earnings of unconsolidated affiliates, net of tax	(2.4)	(1.8)
Operating profit	283.4	267.2
Less: other expense, net	1.0	15.0
Less: pension settlement charge	—	0.4
Less: equity earnings of unconsolidated affiliates, net of tax	(2.4)	(1.8)
Plus: depreciation, depletion and amortization expense	146.8	96.5
EBITDA	$ 431.6	$ 350.1
Plus: restructuring charges	20.3	13.8
Plus: acquisition-related costs	22.2	0.7
Plus: non-cash asset impairment charges	2.1	4.1
Plus: non-cash pension settlement charges	—	0.4
Plus: gain on disposal of properties, plants, equipment, and businesses, net	(4.1)	(7.4)
Adjusted EBITDA	$ 472.1	$ 361.7

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The following table sets forth EBITDA and Adjusted EBITDA for our business segments, reconciled to the operating profit for each segment, for the nine months ended July 31, 2019 and 2018:

(in millions)	Nine Months Ended July 31, 2019	Nine Months Ended July 31, 2018
Rigid Industrial Packaging & Services		
Operating profit	$ 124.6	$ 140.4
Less: other expense, net	4.0	14.9
Less: non-cash pension settlement charges	—	0.4
Less: equity earnings of unconsolidated affiliates, net of tax	(2.4)	(1.8)
Plus: depreciation and amortization expense	57.0	62.2
EBITDA	$ 180.0	$ 189.1
Plus: restructuring charges	15.0	13.1
Plus: acquisition-related costs	0.4	0.7
Plus: non-cash impairment charges	2.1	4.1
Plus: non-cash pension settlement charges	—	0.4
Less: (gain) loss on disposal of properties, plants and equipment, and businesses, net	2.9	(5.0)
Adjusted EBITDA	$ 200.4	$ 202.4
Paper Packaging & Services		
Operating profit	$ 128.6	$ 105.0
Less: other (income) expense, net	(2.1)	0.7
Plus: depreciation and amortization expense	81.9	25.6
EBITDA	$ 212.6	$ 129.9
Plus: restructuring charges	5.2	0.3
Plus: acquisition-related costs	21.8	—
Adjusted EBITDA	$ 239.6	$ 130.2
Flexible Products & Services		
Operating profit	$ 22.2	$ 14.0
Less: other income, net	(0.9)	(0.6)
Plus: depreciation and amortization expense	4.7	5.4
EBITDA	$ 27.8	$ 20.0
Plus: restructuring charges	—	0.4
Less: gain on disposal of properties, plants and equipment, and businesses, net	(5.0)	(0.1)
Adjusted EBITDA	$ 22.8	$ 20.3
Land Management		
Operating profit	$ 8.0	$ 7.8
Plus: depreciation, depletion and amortization expense	3.2	3.3
EBITDA	$ 11.2	$ 11.1
Plus: restructuring charges	0.1	—
Less: gain on disposal of properties, plants and equipment, and businesses, net	(2.0)	(2.3)
Adjusted EBITDA	$ 9.3	$ 8.8

Net Sales

Net sales were $3,362.9 million for the first nine months of 2019 compared with $2,886.1 million for the first nine months of 2018. The $476.8 million increase was primarily due to the sales contributed by the acquired Caraustar operations, partially offset by volume declines in certain regions. See the "Segment Review" below for additional information on net sales by segment during the first nine months of 2019.

Gross Profit

Gross profit was $700.9 million for the first nine months of 2019 compared with $584.1 million for the first nine months of 2018. The respective reasons for the improvement or decline in each segment are described below in the “Segment Review.” Gross profit margin was 20.8 percent and 20.2 percent for first nine months of 2019 and 2018, respectively.

Selling, General and Administrative Expenses

SG&A expenses were $377.0 million for the first nine months of 2019 from $305.7 million for the first nine months of 2018. The $71.3 million increase was primarily due to expenses attributable to the acquired Caraustar operations, partially offset by a decrease in salaries and benefits costs. SG&A expenses were 11.2 percent of net sales for the first nine months of 2019 compared with 10.6 percent of net sales for the first nine months of 2018.

Restructuring Charges

Restructuring charges were $20.3 million for the first nine months of 2019 compared with $13.8 million for the first nine months of 2018. See Note 7 to the condensed consolidated financial statements included in Item 1 of this Form 10-Q for additional information on the restructuring charges reported during the first nine months of 2019.

Gain on Disposal of Properties, Plants and Equipment, net

The gain on disposal of properties, plants and equipment, net was $7.1 million and $7.5 million for the first nine months of 2019 and 2018, respectively. See Note 5 to the condensed consolidated financial statements included in Item 1 of this Form 10-Q for additional information on the gain reported during the first nine months of 2019.

Loss on Disposal of Businesses, net

The loss on disposal of business, net was $3.0 million and $0.1 million for the first nine months of 2019 and 2018, respectively. See Note 3 to the condensed consolidated financial statements included in Item 1 of this Form 10-Q for additional information.

Financial Measures

Operating profit was $283.4 million for the first nine months of 2019 compared with $267.2 million for the first nine months of 2018. Net income was $124.4 million for the first nine months of 2019 compared with $184.0 million for the first nine months of 2018. Adjusted EBITDA was $472.1 million for the first nine months of 2019 compared with $361.7 million for the first nine months of 2018. The $110.4 million increase in Adjusted EBITDA was primarily due to the contribution by the acquired Caraustar operations, SG&A efficiencies and lower other expenses, net, which were primarily attributable to lower pension expenses and lower losses related to foreign currency and hedging activities.

Segment Review

Rigid Industrial Packaging & Services

Net sales were $1,871.6 million for the first nine months of 2019 compared with $1,965.7 million for the first nine months of 2018. The $94.1 million decrease in net sales was primarily due to the impact of foreign currency translation and lower volumes in certain regions, partially offset by increases in selling prices as a result of strategic pricing decisions.

Gross profit was $346.1 million for the first nine months of 2019 compared with $374.1 million for the first nine months of 2018. The $28.0 million decrease in gross profit was primarily due to the same factors that impacted net sales. The prior year period included a one-time freight expense adjustment that positively impacted gross profit by $4.6 million. Gross profit margin decreased to 18.5 percent for the first nine months of 2019 from 19.0 percent for the first nine months of 2018.

Operating profit was $124.6 million for the first nine months of 2019 compared with $140.4 million for the first nine months of 2018. Adjusted EBITDA was $200.4 million for the first nine months of 2019 compared with $202.4 million for the first nine months of 2018. The $2.0 million decrease in Adjusted EBITDA was due primarily to the same factors that impacted net sales, partially offset by a reduction in segment SG&A expense.

Paper Packaging & Services

Net sales increased $591.2 million to $1,244.9 million for the first nine months of 2019 compared with $653.7 million for the first nine months of 2018, primarily due to $613.7 million of contribution from the acquired Caraustar operations and higher containerboard selling prices, partially offset by decreased volumes.

Gross profit was $296.9 million for the first nine months of 2019 compared with $152.7 million for the first nine months of 2018. Gross profit margin was 23.8 percent and 23.4 percent for the first nine months of 2019 and 2018, respectively. The increase in gross profit and gross profit margin was due primarily to $137.9 million of contribution from the acquired Caraustar operations and lower old corrugated container input costs.

Operating profit was $128.6 million for the first nine months of 2019 compared with $105.0 million for the first nine months of 2018. Adjusted EBITDA was $239.6 million for the first nine months of 2019 compared with $130.2 million for the first nine months of 2018. The $109.4 million increase in Adjusted EBITDA was due primarily to $100.3 million of contribution from the acquired Caraustar operations and the same factors that impacted net sales.

Flexible Products & Services

Net sales decreased $20.1 million to $226.6 million for the first nine months of 2019 compared with $246.7 million for the first nine months of 2018. The decrease was primarily due to the impact of foreign currency translation and volume decreases, partially offset by improved product mix.

Gross profit was $50.0 million for the first nine months of 2019 compared with $49.5 million for the first nine months of 2018. Gross profit margin increased to 22.1 percent for the first nine months of 2019 from 20.1 percent for the first nine months of 2018.

Operating profit was $22.2 million for the first nine months of 2019 compared with $14.0 million for the first nine months of 2018. The increase in operating profit was primarily due to a $5.0 million gain on disposal of properties, plants and equipment and a reduction in SG&A expenses. Adjusted EBITDA was $22.8 million for the first nine months of 2019 compared with $20.3 million for the first nine months of 2018. The $2.5 million increase in Adjusted EBITDA was primarily due to a reduction in SG&A expenses.

Land Management

Net sales decreased to $19.8 million for the first nine months of 2019 compared with $20.0 million for the first nine months of 2018.

Operating profit increased to $8.0 million for the first nine months of 2019 from $7.8 million for the first nine months of 2018. Adjusted EBITDA was $9.3 million and $8.8 million for the first nine months of 2019 and 2018, respectively.

Other Income Statement Changes

Interest expense, net

Interest expense, net, was $80.1 million for the first nine months of 2019 compared with $38.4 million for the first nine months of 2018. The increase was primarily due to the incremental debt incurred in connection with the Caraustar Acquisition, partially offset by the impact of interest rate derivative financial assets.

U.S. and non-U.S. Income before Income Tax Expense

Refer to the following tables for details of the U.S. and non-U.S. income before income taxes and U.S. and non-U.S. income before Special Items.

Summary

	Nine Months Ended July 31,	
	2019	**2018**
Non-U.S. % of Consolidated Net Sales	41.6%	51.4%
U.S. % of Consolidated Net Sales	58.4%	48.6%
	100.0%	100.0%
Non-U.S. % of Consolidated I.B.I.T.	52.1%	40.9%
U.S. % of Consolidated I.B.I.T.	47.9%	59.1%
	100.0%	100.0%
Non-U.S. % of Consolidated I.B.I.T. before Special Items	43.7%	43.1%
U.S. % of Consolidated I.B.I.T. before Special Items	56.3%	56.9%
	100.0%	100.0%

Non-U.S. I.B.I.T. Reconciliation

	Nine Months Ended July 31,	
(in millions)	2019	2018
Non-U.S. I.B.I.T.	$ 93.9	$ 87.2
Non-cash asset impairment charges	2.1	1.6
Non-cash pension settlement charges	—	0.4
Restructuring charges	11.2	10.5
Acquisition-related costs	0.4	0.6
Loss on sale of businesses, net	1.6	0.1
Total Non-U.S. Special Items	15.3	13.2
Non-U.S. I.B.I.T. before Special Items	$ 109.2	$ 100.4

U.S. I.B.I.T. Reconciliation

	Nine Months Ended July 31,	
(in millions)	2019	2018
U.S. I.B.I.T.	$ 86.4	$ 126.1
Non-cash asset impairment charges	—	2.5
Restructuring charges	9.1	3.3
Acquisition-related costs	21.8	0.1
Debt extinguishment charges	22.0	—
Loss on sale of businesses, net	1.4	—
Total U.S. Special Items	54.3	5.9
U.S. I.B.I.T. before Special Items	$ 140.7	$ 132.0

I.B.I.T. is Income Before Income Tax Expense

Income tax expense

Our year to date income tax expense was computed in accordance with ASC 740-270 "Income Taxes - Interim Reporting." In accordance with this accounting standard, annual estimated tax expense is computed based on forecasted annual earnings and other forecasted annual amounts, including, but not limited to items such as uncertain tax positions and withholding taxes. Additionally, losses from jurisdictions for which a valuation allowance has been provided have not been included in the annual estimated tax rate. Income tax expense each quarter is provided for on a current year-to-date basis using the annual estimated tax rate, adjusted for discrete taxable events that occur during the interim period.

Income tax expense for the first nine months of 2019 was $58.3 million on $180.3 million of pretax income and income tax expense for the first nine months of 2018 was $31.2 million on $213.4 million of pretax income. In addition to the timing of the annual tax expense recognized in the quarters in accordance with ASC 740-270, we also recorded tax expense and benefits related to the Tax Reform Act. The first nine months of 2019 reflect an incremental $2.3 million of tax expense related to the one-time transition tax liability, offset by the tax effect of foreign currency losses of $1.7 million recognized due to a change in the permanent reinvestment assertion. Other discrete items included $7.7 million of tax benefits associated with the Caraustar Acquisition and refinancing costs as well as $2.3 million of tax expense associated with a foreign subsidiary divestiture. Other immaterial discrete items in the first nine months of 2019 resulted in a tax benefit of $4.3 million. During the first nine months of 2018, a $69.3 million tax benefit was recorded as a result of the re-measurement of deferred tax balances due to the reduction in the U.S. corporate income tax rate from enactment of the Tax Reform Act. This benefit was offset by a provisional estimate of $35.9 million related to the one-time transition tax liability included in the Tax Reform Act. Other immaterial discrete items in the first nine months of 2018 resulted in tax expense of $1.7 million.

Net income attributable to noncontrolling interests

Net income attributable to noncontrolling interests for the first nine months of 2019 and 2018 was $18.4 million and $14.7 million, respectively. This increase was primarily due to increased net operating profit of the Flexible Packaging JV during the first nine months of 2019 compared to 2018.

Net income attributable to Greif, Inc.

Based on the above, net income attributable to Greif, Inc. was $106.0 million for the first nine months of 2019 compared to $169.3 million for the first nine months of 2018.

OTHER COMPREHENSIVE INCOME (LOSS) CHANGES

Foreign currency translation

In accordance with ASC 830, “Foreign Currency Matters,” the assets and liabilities denominated in a foreign currency are translated into United States Dollars at the rate of exchange existing at the end of the current period, and revenues and expenses are translated at average exchange rates over the month in which they are incurred. The cumulative translation adjustments, which represent the effects of translating assets and liabilities of our international operations, are presented in the condensed consolidated statements of changes in equity in accumulated other comprehensive income (loss).

Minimum pension liability, net

Change in minimum pension liability, net for the first nine months of 2019 and 2018 was $2.2 million and $17.4 million, respectively. The comprehensive income resulting from the change in minimum pension liability for the first nine months of 2019 was primarily due to changes in valuation assumptions and the impact of foreign currency translation. The comprehensive income resulting from the change in minimum pension liability for the first nine months of 2018 was primarily due to remeasurement of the defined benefit plan in the United States as a result of the contributions that occurred during the nine months ended July 31, 2018.

BALANCE SHEET CHANGES

Working capital changes

The $263.6 million increase in accounts receivable to $720.3 million as of July 31, 2019 from $456.7 million as of October 31, 2018 was primarily due to $139.9 million of contribution from the acquired Caraustar operations and changes in our international trade accounts receivables credit facilities. For a discussion of these changes, see "Liquidity and Capital Resources - International Trade Accounts Receivable Credit Facilities" and Note 4 to the interim condensed consolidated financial statements included in Item 1 of this Form 10-Q.

The $124.0 million increase in inventories to $413.5 million as of July 31, 2019 from $289.5 million as of October 31, 2018 was primarily due to $91.5 million of contribution from the acquired Caraustar operations and increased raw material purchases.

The $54.7 million increase in accounts payable to $458.5 million as of July 31, 2019 from $403.8 million as of October 31, 2018 was primarily due to $88.3 million of contribution from the acquired Caraustar operations and timing of payments.

Other balance sheet changes

The $10.4 million increase in prepaid expenses to $50.2 million as of July 31, 2019 from $39.8 million as of October 31, 2018 was primarily due to the timing of payments.

The $12.9 million decrease in other current assets to $79.2 million as of July 31, 2019 from $92.1 million as of October 31, 2018 was primarily due to a decrease in income tax receivables.

LIQUIDITY AND CAPITAL RESOURCES

Our primary sources of liquidity are operating cash flows and borrowings under our senior secured credit facilities, proceeds from the senior notes we have issued, and proceeds from our trade accounts receivable credit facilities. We use these sources to fund our working capital needs, capital expenditures, cash dividends, common stock repurchases and acquisitions. We anticipate continuing to fund these items in a like manner. We currently expect that operating cash flows, borrowings under our senior secured credit facilities, and proceeds from our trade accounts receivable credit facilities will be sufficient to fund our anticipated working capital, capital expenditures, cash dividends, debt repayment, potential acquisitions of businesses and other liquidity needs for at least 12 months. Moreover, as a result of the Tax Reform Act, if distributions from operations outside the United States are needed to fund working capital needs, capital expenditures, cash dividends, common stock repurchases, or acquisitions in the United States, there would be no additional U.S. taxes on such distributions.

Capital Expenditures

During the first nine months of 2019 and 2018, we invested $92.9 million (excluding $4.1 million for purchases of and investments in timber properties) and $88.1 million (excluding $6.6 million for purchases of and investments in timber properties), respectively, in capital expenditures.

We expect capital expenditures, excluding purchases of and investments in timber properties, to be approximately $150.0 million to $170.0 million in 2019. We anticipate that these expenditures will replace and improve existing equipment and fund new facilities.

Noncontrolling Interest

We have conditional contractual obligations to redeem the outstanding equity interest of certain noncontrolling interest holders in certain of our joint ventures at which time we may incur additional cash outflows.

On November 15, 2018, one of the noncontrolling interest owners of one of our Paper Packaging & Services joint ventures exercised its put option to require us to purchase all of its ownership interest. Subsequently, in the first quarter of 2019, we entered into a stock purchase agreement with another noncontrolling interest owner of this same Paper Packaging & Services joint venture. On January 9, 2019, we made a payment, in full, of $10.1 million to the noncontrolling interest owner who had exercised its put option and made a payment of $1.8 million to the other owner pursuant to such stock purchase agreement. As of July 31, 2019, there was no outstanding liability or payment related to these two transactions.

Borrowing Arrangements

Long-term debt is summarized as follows:

(in millions)	July 31, 2019	October 31, 2018
2019 Credit Agreement - Term Loans	$ 1,633.2	$ —
2017 Credit Agreement - Term Loan	—	277.5
Senior Notes due 2027	494.1	—
Senior Notes due 2021	222.2	226.5
Senior Notes due 2019	—	249.1
Accounts receivable credit facilities	261.3	150.0
2019 Credit Agreement - Revolving Credit Facility	272.4	—
2017 Credit Agreement - Revolving Credit Facility	—	3.8
Other debt	0.6	0.7
	2,883.8	907.6
Less: current portion	83.7	18.8
Less: deferred financing costs	14.1	4.7
Long-term debt, net	$ 2,786.0	$ 884.1

2019 Credit Agreement

On February 11, 2019, we and certain of our subsidiaries entered into an amended and restated senior secured credit agreement (the “2019 Credit Agreement”) with a syndicate of financial institutions. The 2019 Credit Agreement amended, restated and replaced in its entirety the prior $800.0 million senior secured credit agreement (the "2017 Credit Agreement"), which is described below. Our obligations under the 2019 Credit Agreement are guaranteed by certain of our U.S. subsidiaries.

The 2019 Credit Agreement provides for (a) an $800.0 million secured revolving credit facility, consisting of a $600.0 million multicurrency facility and a $200.0 million U.S. dollar facility, maturing on February 11, 2024 (the "Revolving Credit Facility"), (b) a $1,275.0 million secured term loan A-1 facility with quarterly principal installments commencing on April 30, 2019 and continuing through maturity on January 31, 2024, and (c) a $400.0 million secured term loan A-2 facility with quarterly principal installments commencing on April 30, 2019 and continuing through maturity on January 31, 2026. In addition, we have an option to add an aggregate of $700.0 million to the 2019 Credit Agreement with the agreement of the lenders.

We used borrowings under the 2019 Credit Agreement, together with the net proceeds from the issuance of the Senior Notes due March 1, 2027 (described below), to fund the purchase price of the Caraustar Acquisition, to redeem our $250.0 million Senior Notes due August 1, 2019 (the "Senior Notes due 2019"), to repay outstanding borrowings under the 2017 Credit Agreement, and to pay related fees and expenses. The Revolving Credit Facility is available to fund ongoing working capital and capital expenditures needs and for general corporate purposes. Interest is based on either a Eurodollar rate or a base rate that resets periodically plus a calculated margin amount. As of July 31, 2019, $272.4 million was outstanding under the Revolving Credit Facility.

The 2019 Credit Agreement contains certain covenants, which include financial covenants that require us to maintain a certain leverage ratio and an interest coverage ratio. The leverage ratio generally requires that, at the end of any fiscal quarter, we will not permit the ratio of (a) our total consolidated indebtedness, to (b) our consolidated net income plus depreciation, depletion and amortization, interest expense (including capitalized interest), income taxes, and minus certain extraordinary gains and non-recurring gains (or plus certain extraordinary losses and non-recurring losses) and plus or minus certain other items for the preceding twelve months (as used in this paragraph only, “EBITDA”) to be greater than 4.75 to 1.00 and stepping down annually by 0.25 increments beginning on July 31, 2020 to 4.00 on July 31, 2023. The interest coverage ratio generally requires that, at the end of any fiscal quarter, we will not permit the ratio of (a) our consolidated EBITDA, to (b) our consolidated interest expense to the extent paid or payable, to be less than 3.00 to 1.00, during the applicable preceding twelve month period.

The terms of the 2019 Credit Agreement contain restrictive covenants, which limit our ability, among other things, to incur additional indebtedness or issue certain preferred stock, pay dividends, redeem stock or make other distributions, or make certain investments; create restrictions on the ability of our restricted subsidiaries to pay dividends or make other payments to us; create certain liens; transfer or sell certain assets; merge or consolidate; enter into certain transactions with our affiliates; and designate subsidiaries as unrestricted subsidiaries. These covenants are subject to a number of important exceptions and qualifications. As of July 31, 2019, we were in compliance with the covenants and other agreements in the 2019 Credit Agreement.

The repayment of this facility is secured by a security interest in our personal property and the personal property of certain of our U.S. subsidiaries, including equipment and inventory and certain intangible assets, as well as a pledge of the capital stock of substantially all of our U.S. subsidiaries, and is secured, in part, by the capital stock of the non-U.S. borrowers. However, in the event that we receive and maintain an investment grade rating from either Moody’s Investors Service, Inc. or Standard & Poor’s Financial Services LLC, we may request the release of such collateral.

The 2019 Credit Agreement provides for events of default (subject in certain cases to customary grace and cure periods), which include, among others, nonpayment of principal or interest when due, breach of covenants or other agreements in the 2019 Credit Agreement, defaults in payment of certain other indebtedness and certain events of bankruptcy or insolvency.

See Note 9 to the interim condensed consolidated financial statements included in Item 1 of Part I of this Form 10-Q for additional disclosures regarding the 2019 Credit Agreement.

2017 Credit Agreement

We and certain of our international subsidiaries were borrowers under the 2017 Credit Agreement. The 2017 Credit Agreement provided for an $800.0 million revolving multicurrency credit facility and a $300.0 million term loan. On February 11, 2019, proceeds from borrowings under the 2019 Credit Agreement were used to pay the obligations outstanding under the 2017 Credit Agreement.

See Note 9 to the interim condensed consolidated financial statements included in Item 1 of Part I of this Form 10-Q for additional disclosures regarding the 2017 Credit Agreement.

Senior Notes

On February 11, 2019, we issued $500.0 million of 6.50% Senior Notes due March 1, 2027 (the "Senior Notes due 2027"). Interest on the Senior Notes due 2027 is payable semi-annually commencing on September 1, 2019. Our obligations under the Senior Notes due 2027 are guaranteed by our U.S. subsidiaries that guarantee the 2019 Credit Agreement, as described above. We used the net proceeds from the issuance of the Senior Notes due 2027, together with borrowings under the 2019 Credit Agreement, to fund the purchase price of the Caraustar Acquisition, to redeem all of our Senior Notes due 2019, to repay outstanding borrowings under the 2017 Credit Agreement, and to pay related fees and expenses. The terms of the Senior Notes due 2027 are governed by an Indenture that contains restrictive covenants that limit our ability, among other things, to incur additional indebtedness or issue certain preferred stock, pay dividends, redeem stock or make other distributions, or make certain investments; create certain liens; enter into certain transactions with affiliates; and designate subsidiaries as unrestricted subsidiaries. These covenants are subject to a number of important exceptions and qualifications as set forth in the Indenture. Certain of these covenants will be suspended if the Senior Notes due 2027 achieve investment grade ratings from both Moody’s Investors Service, Inc. and Standard & Poor’s

Global Ratings and no default or event of default has occurred and is continuing. As of July 31, 2019, we were in compliance with these covenants.

Our Luxembourg subsidiary has issued €200.0 million of 7.375% Senior Notes due July 15, 2021 (the "Senior Notes due 2021"). Interest on the Senior Notes due 2021 is payable semi-annually. The Senior Notes due 2021 are guaranteed on a senior basis by Greif, Inc. The Senior Notes due 2021 are governed by an Indenture that contains various covenants. As of July 31, 2019, we were in compliance with these covenants.

On April 1, 2019, we redeemed all of our outstanding Senior Notes due 2019, which were issued on July 28, 2009 for $250.0 million. The total redemption price for the Senior Notes due 2019 was $253.9 million, which was equal to the aggregate principal amount outstanding of $250.0 million plus a premium of $3.9 million. The payment of the redemption price was funded by our borrowings under the 2019 Credit Agreement.

See Note 9 to the interim condensed consolidated financial statements included in Item 1 of Part I of this Form 10-Q for additional disclosures regarding the Senior Notes discussed above.

United States Trade Accounts Receivable Credit Facility

On September 26, 2018, we amended and restated our existing receivables facility in the United States to establish a $150.0 million United States Trade Accounts Receivable Credit Facility (the "U.S. Receivables Facility") with a financial institution. The U.S. Receivables Facility matures on September 26, 2019. As of July 31, 2019, $150.0 million was outstanding under the U.S. Receivable Facility, which was reported in long-term debt in the interim condensed consolidated balance sheets because we intend to refinance the obligation on a long-term basis and have the intent and ability to consummate a long-term refinancing by exercising the renewal option in the agreement or entering into a new financing arrangement.

We can terminate the U.S. Receivables Facility at any time upon five days prior written notice. The U.S. Receivables Facility is secured by certain of our United States trade accounts receivables and bears interest at a variable rate based on the London Interbank Offered Rate (“LIBOR”) or an applicable base rate, plus a margin, or a commercial paper rate plus a margin. Interest is payable on a monthly basis and the principal balance is payable upon termination of the U.S. Receivables Facility. The U.S. Receivables Facility also contains certain covenants and events of default, which are materially similar to the 2019 Credit Agreement covenants. As of July 31, 2019, we are in compliance with these covenants. Proceeds of the U.S. Receivables Facility are available for working capital and general corporate purposes.

See Note 9 to the interim condensed consolidated financial statements included in Item 1 of Part I of this Form 10-Q for additional disclosures regarding the U.S. Receivables Facility.

International Trade Accounts Receivable Credit Facilities

In 2012, Cooperage Receivables Finance B.V. (the “Main SPV”) and Greif Coordination Center BVBA, an indirect wholly owned subsidiary of Greif, Inc. (“Seller”), entered into the Nieuw Amsterdam Receivables Purchase Agreement (the “Prior European RPA”) with affiliates of a major international bank (the “Purchasing Bank Affiliates”). On April 17, 2019, the Main SPV and Seller amended and extended the term of the Prior European RPA through April 17, 2020. On June 17, 2019, the Main SPV and Seller entered into an agreement to replace the Prior European RPA with the Nieuw Amsterdam Receivables Financing Agreement (the "New European RFA"). The New European RFA, which matures on April 17, 2020, provides an accounts receivable financing facility of up to €100.0 million ($111.4 million as of July 31, 2019) secured by certain European accounts receivable. As of July 31, 2019, $106.4 million was outstanding under the New European RFA, which was reported as long-term debt in the interim condensed consolidated balance sheet because we intend to refinance these obligations on a long-term basis and have the intent and ability to consummate a long-term refinancing by exercising the renewal option in the respective agreement or entering into new financing arrangements.

During the first quarter of 2019, a parent-level guarantee was added to the European RPA and the Singapore RPA (as such term is defined below). However, the parent-level guarantee was removed from the New European RFA. As of July 31, 2019, $4.9 million was outstanding under the Singapore RPA, which was reported as long-term debt in the interim condensed consolidated balance sheet because we intend to refinance these obligations on a long-term basis and have the intent and ability to consummate a long-term refinancing by exercising the renewal option in the respective agreement or entering into new financing arrangements.

Under the terms of the New European RPA, we have the ability to loan excess cash to the Purchasing Bank Affiliates in the form of the subordinated loan receivable.

Under the terms of the New European RPA, we have agreed to sell trade receivables meeting certain eligibility requirements that the Seller had purchased from our other indirect wholly-owned subsidiaries under a factoring agreement.

In October 2007, Greif Singapore Pte. Ltd., an indirect wholly-owned subsidiary of Greif, Inc., entered into the Singapore Receivable Purchase Agreement (the "Singapore RPA") with a major international bank. The maximum amount of aggregate receivables that may be financed under the Singapore RPA is 15.0 million Singapore Dollars ($10.9 million as of July 31, 2019).

Under the terms of the Singapore RPA, we have agreed to sell trade receivables in exchange for an initial purchase price of approximately 90 percent of the eligible receivables. The remaining deferred purchase price is settled upon collection of these receivables.

Prior to November 1, 2018, we removed from accounts receivable the amount of proceeds received from the initial purchase price since they met the applicable criteria of ASC 860, "Transfers and Servicing," and we continued to recognize the deferred purchase price in other current assets or other current liabilities on our interim condensed consolidated balance sheets, as appropriate. The receivables were sold on a non-recourse basis with the total funds in the servicing collection accounts pledged to the banks between settlement dates. The cash initially received, along with the deferred purchase price, related to the sale or ultimate collection of the underlying receivables and was not subject to significant other risks given their short term nature. Therefore, we reflected all cash flows under the accounts receivable sales programs as operating cash flows on our interim condensed consolidated statements of cash flows.

We perform collection and administrative functions on the receivables related to the Prior European RPA, the New European RFA and the Singapore RPA, similar to the procedures we use for collecting all of our receivables. The servicing liability for these receivables is not material to our interim condensed consolidated financial statements.

See Note 4 to the interim condensed consolidated financial statements included in Item 1 of Part I of this Form 10-Q for additional information regarding these various RPAs and RFA.

Interest Rate Derivatives

We have various borrowing facilities which charge interest based on the one month U.S. dollar LIBOR rate plus an interest spread.

In 2019, we entered into six interest rate swaps related to the debt incurred with the acquisition of Caraustar. See "Borrowing Arrangements - 2019 Credit Agreement". These six interest rate swaps have a total notional amount of $1,300.0 million. We receive variable rate interest payments based upon one month U.S. dollar LIBOR, and in return we are obligated to pay interest at a weighted-average interest rate of 2.49%.

In 2017, we entered into an interest rate swap with a notional amount of $300.0 million and received variable rate interest payments based upon one month U.S. dollar LIBOR, and in return we are obligated to pay interest at a fixed rate of 1.19% plus an interest spread.

These derivatives are designated as cash flow hedges for accounting purposes. Accordingly, the gain or loss on these derivative instruments are reported as a component of other comprehensive income and reclassified into earnings in the same line item associated with the forecasted transactions and in the same period during which the hedged transaction affects earnings.

See Note 10 and Note 15 to the interim condensed consolidated financial statements included in Item 1 of Part I of this Form 10-Q for additional disclosures regarding the interest rate derivatives.

Foreign Exchange Hedges

We conduct business in international currencies and are subject to risks associated with changing foreign exchange rates. Our objective is to reduce volatility associated with foreign exchange rate changes to allow management to focus its attention on business operations. Accordingly, we enter into various contracts that change in value as foreign exchange rates change to protect the value of certain existing foreign currency assets and liabilities, commitments and anticipated foreign currency cash flows.

As of July 31, 2019, we had outstanding foreign currency forward contracts in the notional amount of $121.4 million ($194.4 million as of October 31, 2018).

See Note 10 to the interim condensed consolidated financial statements included in Item 1 of Part I of this Form 10-Q for additional disclosures regarding the foreign exchange hedges.

Cross Currency Swap

We have operations and investments in various international locations and are subject to risks associated with changing foreign exchange rates. On March 6, 2018 we entered into a cross currency interest rate swap agreement that synthetically swaps $100.0

million of fixed rate debt to Euro denominated fixed rate debt at a rate of 2.35%. The agreement is designated as a net investment hedge for accounting purposes and will mature on March 6, 2023. Accordingly, the gain or loss on this derivative instrument is included in the foreign currency translation component of other comprehensive income until the net investment is sold, diluted, or liquidated. Interest payments received for the cross currency swap are excluded from the net investment hedge effectiveness assessment and are recorded in interest expense, net on the interim condensed consolidated statements of income.

See Note 10 and Note 15 to the interim condensed consolidated financial statements included in Item 1 of Part I of this Form 10-Q for additional disclosures regarding the cross currency swap.

ITEM 3. QUANTITATIVE AND QUALITATIVE DISCLOSURE ABOUT MARKET RISK

The Company completed the Caraustar Acquisition on February 11, 2019. As a result of the Caraustar Acquisition, there have been signification changes in the quantitative disclosures over the financial instruments from the disclosures contained in the 2018 Form 10-K.

Financial Instruments

As of July 31, 2019 (Dollars in millions)

	Expected Maturity Date							
	2019	**2020**	**2021**	**2022**	**2023**	**After 2023**	**Total**	**Fair Value**
2019 Credit Agreement:								
Scheduled amortizations	$ 21	$ 84	$ 131	$ 148	$ 147	$ 45	$ 576	$ 576
Scheduled maturity	—	—	—	$ —	—	$ 1,330	$ 1,330	$ 1,330
Average interest rate (1)	4.08%	4.08%	4.08%	4.08%	4.08%	4.08%	4.08%	
Senior Notes due 2021:								
Scheduled maturity	—	—	$ 222	—	—	—	$ 222	$ 254
Average interest rate	7.38%	7.38%	7.38%	—	—	—	7.38%	
Senior Notes due 2027:								
Scheduled maturity	—	—	—	—	—	$ 500	$ 500	$ 524
Average interest rate	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	6.50%	
Receivables Facilities:								
Scheduled maturity	$ 261	—	—	—	—	—	$ 261	$ 261

(1) Variable rate specified is based on LIBOR or an alternative base rate plus a calculated margin as of July 31, 2019. The rates presented are not intended to project our expectations for the future.

Financial Instruments

As of October 31, 2018 (Dollars in millions)

	Expected Maturity Date							
	2019	2020	2021	2022	2023	After 2023	Total	Fair Value
2017 Credit Agreement:								
Scheduled amortizations	$ 19	$ 30	$ 23	$ —	$ —	$ —	$ 72	$ 72
Scheduled maturity	—	—	—	$ 209	—	—	$ 209	$ 209
Average interest rate [1]	3.37%	3.37%	3.37%	3.37%	3.37%	—	3.37%	
Senior Notes due 2019:								
Scheduled maturity	$ 249	—	—	—	—	—	$ 249	$ 257
Average interest rate	7.75%	—	—	—	—	—	7.75%	
Senior Notes due 2021:								
Scheduled maturity	—	—	227	—	—	—	$ 227	$ 263
Average interest rate	7.38%	7.38%	7.38%	—	—	—	7.38%	
Receivables Facility:								
Scheduled maturity	$ 150	—	—	—	—	—	$ 150	$ 150

(1) Variable rate specified is based on LIBOR or an alternative base rate plus a calculated margin as of October 31, 2018. The rates presented are not intended to project our expectations for the future.

There have been no other significant changes in the quantitative and qualitative disclosures about our market risk from the disclosures contained in the 2018 Form 10-K.

ITEM 4. CONTROLS AND PROCEDURES

Changes in Internal Control Over Financial Reporting

The Company completed two acquisitions through three quarters of 2019, which included the Caraustar Acquisition, completed on February 11, 2019, and the Tholu Acquisition, completed on June 11, 2019. The scope of the Company's assessment of the effectiveness of internal controls over financial reporting for the fiscal year ending October 31, 2019, will not include the Caraustar Acquisition or the Tholu Acquisition. This exclusion is in accordance with the Securities and Exchange Commission's general guidance that an assessment of a recently acquired business may be omitted from the Company's scope in the year of acquisition.

There have been no other changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Disclosure Controls and Procedures

With the participation of our principal executive officer and principal financial officer, our management has evaluated the effectiveness of our disclosure controls and procedures (as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934, as amended (the “Exchange Act”), as of the end of the period covered by this report. Based upon that evaluation, our principal executive officer and principal financial officer have concluded that, as of the end of the period covered by this report:

- Information required to be disclosed by us in the reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the rules and forms of the Securities and Exchange Commission;
- Information required to be disclosed by us in the reports that we file or submit under the Exchange Act is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure; and
- Our disclosure controls and procedures are effective.

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PART II. OTHER INFORMATION

ITEM 1A. RISK FACTORS

There have been no material changes in our risk factors from those disclosed in the 2018 Form 10-K under Part I, Item 1A — Risk Factors.

ITEM 2. UNREGISTERED SALES OF EQUITY SECURITIES AND USE OF PROCEEDS

None.

ITEM 6. EXHIBITS

(a.) Exhibits

Exhibit No.	Description of Exhibit
31.1	Certification of Chief Executive Officer Pursuant to Rule 13a — 14(a) of the Securities Exchange Act of 1934.
31.2	Certification of Chief Financial Officer Pursuant to Rule 13a — 14(a) of the Securities Exchange Act of 1934.
32.1	Certification of Chief Executive Officer required by Rule 13a —14(b) of the Securities Exchange Act of 1934 and Section 1350 of Chapter 63 of Title 18 of the United States Code.
32.2	Certification of Chief Financial Officer required by Rule 13a — 14(b) of the Securities Exchange Act of 1934 and Section 1350 of Chapter 63 of Title 18 of the United States Code.
101	The following financial statements from the Company's Quarterly Report on Form 10-Q for the quarter ended July 31, 2019, formatted in Inline XBRL (Extensible Business Reporting Language): (i) Condensed Consolidated Statements of Income and Comprehensive Income (Loss), (ii) Condensed Consolidated Balance Sheets, (iii) Condensed Consolidated Statements of Cash Flow and (iv) Notes to Condensed Consolidated Financial Statements.

SIGNATURES

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

	GREIF, INC.
	(Registrant)
Date: August 29, 2019	/s/ Lawrence A. Hilsheimer
	Lawrence A. Hilsheimer,
	Executive Vice President and Chief Financial Officer

Exhibit 31.1

CERTIFICATION

I, Peter G. Watson, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Greif, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 29, 2019

/s/ Peter G. Watson

Peter G. Watson,
President and Chief Executive Officer
(Principal Executive Officer)

Exhibit 31.2

CERTIFICATION

I, Lawrence A. Hilsheimer, certify that:

1. I have reviewed this quarterly report on Form 10-Q of Greif, Inc.;

2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;

3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;

4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:

a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;

b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;

c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and

d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and

5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):

a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and

b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: August 29, 2019

/s/ Lawrence A. Hilsheimer

Lawrence A. Hilsheimer,
Executive Vice President and Chief Financial Officer
(Principal Financial Officer)

Exhibit 32.1

Certification Required by Rule 13a — 14(b) of the Securities Exchange Act of 1934 and Section 1350 of Chapter 63 of Title 18 of the United States Code

In connection with the Quarterly Report of Greif, Inc. (the "Company") on Form 10-Q for the quarterly period ended July 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Peter G. Watson, the President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 29, 2019

/s/ Peter G. Watson

Peter G. Watson,
President and Chief Executive Officer

A signed original of this written statement required by Section 906 has been provided to Greif, Inc. and will be retained by Greif, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.

Exhibit 32.2

Certification Required by Rule 13a — 14(b) of the Securities Exchange Act of 1934 and Section 1350 of Chapter 63 of Title 18 of the United States Code

In connection with the Quarterly Report of Greif, Inc. (the "Company") on Form 10-Q for the quarterly period ended July 31, 2019, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Lawrence A. Hilsheimer, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that to my knowledge:

(1) The Report fully complies with the requirements of section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: August 29, 2019

/s/ Lawrence A. Hilsheimer

Lawrence A. Hilsheimer,

Executive Vice President and Chief Financial Officer

A signed original of this written statement required by Section 906 has been provided to Greif, Inc. and will be retained by Greif, Inc. and furnished to the Securities and Exchange Commission or its staff upon request.