
**UNITED STATES
SECURITIES AND EXCHANGE COMMISSION
WASHINGTON, D.C. 20549**

FORM 10-K

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

For the fiscal year ended October 31, 2018

or

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

For the transition period from _____ to _____

Commission file number: 001-00566



GREIF, INC.

(Exact name of Registrant as specified in its charter)

State of Delaware
(State or other jurisdiction of
incorporation or organization)
425 Winter Road, Delaware, Ohio
(Address of principal executive offices)

31-4388903
(I.R.S. Employer
Identification No.)
43015
(Zip Code)

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

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

<u>Title of Each Class</u>	<u>Name of Each Exchange on Which Registered</u>
Class A Common Stock	New York Stock Exchange
Class B Common Stock	New York Stock Exchange

Securities registered pursuant to Section 12(g) of the Act: None

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

Indicate by check mark if the Registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Exchange Act. Yes No

Indicate by check mark whether the Registrant (1) has filed all reports to be filed by Section 13 or 15(d) of the Securities Exchange Act of 1934 during the preceding 12 months (or for such shorter period that the Registrant was required to file such reports) and (2) has been subject to such filing requirements for the past 90 days. Yes No

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

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

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

Large accelerated filer	<input checked="" type="checkbox"/>	Accelerated filer	<input type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/>	Smaller reporting company	<input type="checkbox"/>
Emerging growth company	<input type="checkbox"/>		

(Do not check if a smaller reporting company)

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

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

The aggregate market value of voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold as of the last business day of the Registrant's most recently completed second fiscal quarter was as follows:

Non-voting common equity (Class A Common Stock) – \$1,464,933,751
Voting common equity (Class B Common Stock) – \$337,380,525

The number of shares outstanding of each of the Registrant's classes of common stock, as of December 17, 2018, was as follows:

Class A Common Stock – 25,941,279
Class B Common Stock – 22,007,725

Listed hereunder are the documents, portions of which are incorporated by reference, and the parts of this Form 10-K into which such portions are incorporated:

1. The Registrant's Definitive Proxy Statement for use in connection with the Annual Meeting of Stockholders to be held on February 26, 2019 (the "2019 Proxy Statement"), portions of which are incorporated by reference into Parts II and III of this Form 10-K. The 2019 Proxy Statement will be filed within 120 days of October 31, 2018.

IMPORTANT INFORMATION REGARDING FORWARD-LOOKING STATEMENTS

All statements, other than statements of historical facts, included in this Annual Report on Form 10-K of Greif, Inc. and its subsidiaries (this “Form 10-K”) or incorporated herein, including, without limitation, statements regarding our future financial position, business strategy, budgets, projected costs, goals and plans and objectives of management for future operations and initiatives, are forward-looking statements within the meaning of Section 21E of the Securities Exchange Act of 1934, as amended (the “Exchange Act”). 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-K are based on information currently available to our management. Forward-looking statements speak only as of the date the statements were made. 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 actual events or results to differ materially from those expressed in or implied by the statements. For a discussion of the most significant risks and uncertainties that could cause our actual results to differ materially from those projected, see “Risk Factors” in Item 1A of this Form 10-K. The risks described in this Form 10-K 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. All forward-looking statements made in this Form 10-K 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.

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PART I

ITEM 1. BUSINESS

(a) General Development of Business

We are a leading global producer of industrial packaging products and services with operations in over 40 countries. We offer 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. We produce containerboard and corrugated products for niche markets in North America. We are also a leading global producer of flexible intermediate bulk containers. We sell timber to third parties from our timberland in the southeastern United States that we manage to maximize long-term value. In addition, we sell, from time to time, timberland and special use land, which consists of surplus land, higher and better use (“HBU”) land, and development land. Our customers range from Fortune 500 companies to medium and small-sized companies in a cross section of industries.

We were founded in 1877 in Cleveland, Ohio, as “Vanderwyst and Greif,” a cooperage shop co-founded by one of four Greif brothers. One year after our founding, the other three Greif brothers were invited to join the business, renamed Greif Bros. Company, making wooden barrels, casks and kegs to transport post-Civil War goods nationally and internationally. We later purchased nearly 300,000 acres of timberland to provide raw materials for our cooperage plants. We still own significant timber properties located in the southeastern United States. In 1926, we incorporated as a Delaware corporation and made a public offering as The Greif Bros. Cooperage Corporation. In 1951, we moved our headquarters from Cleveland, Ohio to Delaware, Ohio, which is in the Columbus metro-area, where our corporate headquarters are currently located. Since the latter half of the 1900s, we have transitioned from our keg and barrel heading mills, stave mills and cooperage facilities to a global producer of industrial packaging products. Following our acquisition of Van Leer Packaging in 2001, a global steel and plastic drum manufacturer, we changed our name to Greif, Inc.

Our fiscal year begins on November 1 and ends on October 31 of the following year. Any references in this Form 10-K to the years 2018, 2017 or 2016, or to any quarter of those years, relate to the fiscal year ended in that year.

As used in this Form 10-K, the terms “Greif,” the “Company,” “we,” “us,” and “our” refer to Greif, Inc. and its subsidiaries.

See subsection (g) of this Item 1, Recent Events - Proposed Acquisition of Caraustar, for information concerning our proposed acquisition of Caraustar Industries, Inc. (“Caraustar”), a leading manufacturer of high-quality recycled materials and paper products, which was announced on December 20, 2018. Unless expressly identified herein, information in this Form 10-K does not reflect our proposed acquisition of Caraustar or its business operations, products, services or financial results.

(b) Financial Information about Segments

We operate in eight business segments, which are aggregated into four reportable business segments: Rigid Industrial Packaging & Services; Paper Packaging & Services; Flexible Products & Services; and Land Management. Information related to each of these segments is included in Note 17 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K.

(c) Narrative Description of Business

Products and Services

In the Rigid Industrial Packaging & Services segment, we are a leading global producer of rigid industrial packaging products, including 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 rigid industrial packaging products to customers in industries such as chemicals, paints and pigments, food and beverage, petroleum, industrial coatings, agricultural, pharmaceutical and mineral products, among others.

In the Paper Packaging & Services segment, we sell containerboard, corrugated sheets, corrugated containers and other corrugated products to customers in North America in industries such as packaging, automotive, food and building products. Our corrugated container products are used to ship such diverse products as home appliances, small machinery, grocery products, automotive components, books and furniture, as well as numerous other applications.

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In the Flexible Products & Services segment, 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 customers and market segments similar to those of our Rigid Industrial Packaging & Services segment. Additionally, our flexible products significantly expand our presence in the agricultural and food industries, among others.

In the Land Management segment, we are 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 land, which consists of surplus land, HBU land and development land. As of October 31, 2018, we owned approximately 243,000 acres of timber property in the southeastern United States.

Customers

Due to the variety of our products, we have many customers buying different types of our products and due to the scope of our sales, no one customer is considered principal in our total operations.

Backlog

We supply a cross-section of industries, such as chemicals, paints and pigments, food and beverage, petroleum, industrial coatings, agricultural, pharmaceutical, mineral, packaging, automotive and building products, and must make spot deliveries on a day-to-day basis as our products are required by our customers. We do not operate on a backlog to any significant extent and maintain only limited levels of finished goods. Many customers place their orders weekly for delivery during the week.

Competition

The markets in which we sell our products are highly competitive with many participants. Although no single company dominates, we face significant competitors in each of our businesses. Our competitors include large vertically integrated companies as well as numerous smaller companies. The industries in which we compete are particularly sensitive to price fluctuations caused by shifts in industry capacity and other cyclical industry conditions. Other competitive factors include design, quality and service, with varying emphasis depending on product line.

In both the rigid industrial packaging industry and the flexible products industry, we compete by offering a comprehensive line of products on a global basis. In the paper packaging industry, we compete by concentrating on providing value-added, higher-margin corrugated products to niche markets. In addition, over the past several years we have closed higher cost facilities and otherwise restructured our operations, which we believe has significantly improved our cost competitiveness.

Compliance with Governmental Regulations Concerning Environmental Matters

Our operations are subject to extensive federal, state, local and international laws, regulations, rules and ordinances relating to pollution, the protection of the environment, the generation, storage, handling, transportation, treatment, disposal and remediation of hazardous substances and waste materials and numerous other environmental laws and regulations. In the ordinary course of business, we are subject to periodic environmental inspections and monitoring by various governmental agencies. In addition, certain of our production facilities require environmental permits that are subject to revocation, modification and renewal. As of the date of filing this Form 10-K, and based on current information, we believe that the probable costs of the remediation of company-owned property will not have a material adverse effect on our financial condition or results of operations. We believe that we have adequately reserved for our liability for these matters as of October 31, 2018.

We do not believe that compliance with federal, state, local and international provisions, which have been enacted or adopted regulating the discharge of materials into the environment, or otherwise relating to the protection of the environment, has had or will have a material adverse effect upon our capital expenditures, earnings or competitive position. We do not anticipate any material capital expenditures related to environmental control in 2019. However, since 2017, three reconditioning facilities in the Milwaukee, Wisconsin area that are owned by Container Life Cycle Management LLC (“CLCM”), our U.S. reconditioning joint venture company, have been subject to investigations and proceedings conducted by federal, state and local governmental agencies concerning, among other matters, potential violations of environmental laws and regulations. We have cooperated with the governmental agencies in these investigations and proceedings. As of the filing date of this Form 10-K, no citations have been issued or fines assessed with respect to any violations of environmental laws and regulations. As a result of these investigations and proceedings, we will review all options for future actions at these facilities, including changes to existing reconditioning operations, installation of control technology, other capital expenditures, and facility relocation or closure. While not expected to

be material, the cost of any of these actions could be sizeable. See Item 3 of this Form 10-K for information concerning these investigations and proceedings.

Refer also to Note 13 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information concerning environmental expenses and cash expenditures for the periods ended October 31, 2018, 2017 and 2016, and our reserves for environmental liabilities as of October 31, 2018 and 2017.

Raw Materials

Steel, resin and containerboard, as well as used industrial packaging for reconditioning, are the principal raw materials for the Rigid Industrial Packaging & Services segment, resin is the primary raw material for the Flexible Products & Services segment, and pulpwood, old corrugated containers for recycling and containerboard are the principal raw materials for the Paper Packaging & Services segment. We satisfy most of our needs for these raw materials through purchases on the open market or under short-term and long-term supply agreements. All of these raw materials are purchased in highly competitive, price-sensitive markets, which have historically exhibited price, demand and supply cyclicality. From time to time, some of these raw materials have been in short supply at certain of our manufacturing facilities. In those situations, we ship the raw materials in short supply from one or more of our other facilities with sufficient supply to the facility or facilities experiencing the shortage. To date, raw material shortages have not had a material adverse effect on our financial condition or results of operations.

Research and Development

While research and development projects are important to our continued growth, the amount expended in any year is not material in relation to our results of operations.

Other

Our businesses are not materially dependent upon patents, trademarks, licenses or franchises.

No material portion of our businesses is subject to renegotiation of profits or termination of contracts or subcontracts at the election of a governmental agency or authority.

The businesses of our segments are not seasonal to any material extent, although the businesses of some of our customers who are in the agricultural industries and purchase our rigid industrial packaging products and flexible products may be seasonal in nature.

Employees

As of October 31, 2018, we had approximately 13,000 full time employees. A significant number of our full time employees are covered under collective bargaining agreements. We believe that our employee relations are generally good.

(d) Financial Information about Geographic Areas

Our operations are located in North and South America, Europe, the Middle East, Africa and the Asia Pacific regions. Information related to our geographic areas of operation is included in Note 17 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K. Refer also to Quantitative and Qualitative Disclosures about Market Risk included in Item 7A of this Form 10-K.

(e) Available Information

We maintain a website at www.greif.com. We file reports with the United States Securities and Exchange Commission (“SEC”) and make available, free of charge, on or through our website, our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, proxy and information statements and amendments to these reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we have electronically filed such material with, or furnished it to, the SEC.

Any of the materials we file with the SEC may also be read and/or copied at the SEC’s Public Reference Room at 100 F Street, NE, Washington, DC 20549. Information on the operation of the SEC’s Public Reference Room may be obtained by calling the SEC at 1-800-SEC-0330. The SEC maintains a website that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC at www.sec.gov.

(f) Other Matters

Our common equity securities are listed on the New York Stock Exchange (“NYSE”) under the symbols GEF and GEF.B. Our Chief Executive Officer has timely certified to the NYSE that, at the date of the certification, he was unaware of any violation by our Company of the NYSE’s corporate governance listing standards. In addition, our Chief Executive Officer and Chief Financial Officer have provided certain certifications in this Form 10-K regarding the quality of our public disclosures. Refer to Exhibits 31.1 and 31.2 to this Form 10-K.

(g) Recent Events - Proposed Acquisition of Caraustar

On December 20, 2018, two of our subsidiaries entered into a definitive Agreement and Plan of Merger (the “Merger Agreement”) with the parent of Caraustar pursuant to which we are to acquire Caraustar for a purchase price of \$1.8 billion, subject to certain adjustments. The acquisition is subject to the satisfaction or waiver of certain conditions, including, among other things, the expiration or early termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and approval of the stockholders of Caraustar’s parent. The majority stockholder of Caraustar’s parent has executed and delivered to us a written consent evidencing its approval of the Merger Agreement. The Merger Agreement may be terminated, and the merger may be abandoned at any time prior to the closing, as follows: (i) by mutual written agreement of us and Caraustar’s parent; (ii) by either us or Caraustar’s parent if the closing has not occurred on or before May 20, 2019 (subject to automatic extensions up to September 20, 2019, subject to the terms and conditions of the Merger Agreement); (iii) by us in connection with certain breaches by Caraustar’s parent of its representations, warranties or covenants, subject to a cure period; and (iv) by Caraustar’s parent in connection with certain breaches by us of our representations, warranties or covenants, subject to a cure period. We expect the acquisition to close during the first quarter of calendar year 2019, subject to customary closing conditions.

Caraustar is a leading manufacturer of high-quality recycled materials and paper products. Caraustar’s four business lines include recycling services, mill group (coated and uncoated paperboard and specialty paperboard products), industrial products group (tubes and cores, construction products, protective packaging, adhesives) and consumer packaging (folding cartons, set-up boxes, packaging services). Caraustar serves the four principal recycled boxboard product end-use segments: tubes and cores; folding cartons; gypsum facing paper; and specialty paperboard products.

See Item 7 of this Form 10-K, Liquidity and Capital Resources - Financing Commitment for Proposed Acquisition of Caraustar, for information concerning our financing commitment related to our proposed acquisition of Caraustar. However, the receipt of the financing describe herein or any other financing is not a condition to the closing of the proposed acquisition.

Our proposed acquisition of Caraustar is subject to certain risks and uncertainties, including the following: the ability to successfully complete the acquisition of Caraustar on a timely basis, including receipt of required regulatory approvals; the occurrence of any event, change or other circumstance that could give rise to the termination of the Merger Agreement; the outcome of any legal proceedings that may be instituted against the parties and others related to the acquisition of Caraustar; the satisfaction of certain conditions to the completion of the acquisition of Caraustar; the conditions of the credit markets and our ability to issue debt to fund the acquisition on acceptable terms; if the acquisition of Caraustar is completed, the ability to retain the acquired businesses’ customers and employees, the ability to successfully integrate the acquired businesses into our operations, and the ability to achieve the expected synergies as well as accretion in margins, earnings or cash flow; competitive pressures in our various lines of business; the risk of non-renewal or a default under one or more key customer or supplier arrangements or changes to the terms of or level of purchases under those arrangements; uncertainties with respect to U.S. tax or trade laws; the effects of any investigation or action by any regulatory authority; and changes in foreign currency rates and the cost of commodities. See Item 1A of this Form 10-K for a discussion of other significant risks and uncertainties that could cause our actual results to differ materially from those projected.

ITEM 1A. RISK FACTORS

Statements contained in this Form 10-K may be “forward-looking” within the meaning of Section 21E of the Exchange Act. Such forward-looking statements are subject to certain risks and uncertainties that could cause our operating results to differ materially from those projected. The following factors, among others, in some cases have affected, and in the future could affect, our actual financial or operational performance, or both.

Historically, our Business has been Sensitive to Changes in General Economic or Business Conditions.

Our customers generally consist of other manufacturers and suppliers who purchase industrial packaging products and containerboard and related corrugated products for their own containment and shipping purposes. Because we supply a cross section of industries, such as chemicals, paints and pigments, food and beverage, petroleum, industrial coatings, agricultural, pharmaceutical, mineral products, packaging, automotive, and building products industries, and have operations in many countries, demand for our products and services has historically corresponded to changes in general economic and business conditions of the industries and countries in which we operate. The overall demand and prices for our products and services could decline as a result of a large number of factors outside our control, including economic recessions, changes in industrial production processes or consumer preference, changes in laws and regulations, inflation, tariffs, changes in published pricing indices, fluctuations in interest and currency exchange rates and changes in the fiscal or monetary policies of governments in the regions in which we operate. Accordingly, our financial performance is substantially dependent upon the general economic and business conditions existing in these industries and countries, and any prolonged or substantial economic downturn in the markets in which we operate could have a material adverse effect on our business, results of operations and financial condition.

We may not Successfully Implement our Business Strategies, Including Achieving our Growth Objectives.

We may not be able to fully implement our business strategies or realize, in whole or in part within the expected time frames, the anticipated benefits of our growth and other initiatives. Our various business strategies and initiatives are subject to significant business, economic and competitive uncertainties and contingencies, many of which are beyond our control.

In addition, we may incur certain costs to achieve efficiency improvements and growth in our business and we may not meet anticipated implementation timetables or stay within budgeted costs. As these growth initiatives are undertaken, we may not fully achieve our expected cost savings and efficiency improvements or growth rates, or these initiatives could adversely impact our customer retention or our operations. Also, our business strategies may change from time to time in light of our ability to implement our new business initiatives, competitive pressures, economic uncertainties or developments, or other factors. A variety of risks could cause us not to realize some or all of the expected benefits of these initiatives. These risks include, among others, delays in the anticipated timing of activities related to such initiatives, strategies and operating plans; increased difficulty and costs in implementing these efforts; and the inurrence of other unexpected costs associated with operating the business. As a result, there can be no assurance that we will realize these benefits. If, for any reason, the benefits we realize are less than our estimates or the implementation of these growth initiatives and business strategies adversely affect our

operations or cost more or take longer to effectuate than we expect, or if our assumptions prove inaccurate, our results of operations may be materially adversely affected.

Our Operations Subject us to Currency Exchange and Political Risks that Could Adversely Affect our Results of Operations.

We have operations in over 40 countries. Management of global operations is extremely complex, and operations outside the United States are subject to additional risks that may not exist, or be as significant, in the United States. As a result of our global operations, we are subject to certain risks that could disrupt our operations or force us to incur unanticipated costs.

We also have indebtedness, agreements to purchase raw materials and agreements to sell finished products that are denominated in Euros, Turkish Lira, Russian Rubles and other currencies. Our operating performance is affected by fluctuations in currency exchange rates by:

- translations into United States dollars for financial reporting purposes of the assets and liabilities of our non-U.S. operations conducted in local currencies; and
- gains or losses from transactions conducted in currencies other than the operation's functional currency.

We are subject to various other risks associated with operating in countries outside the U.S., such as the following:

- political, social, economic and labor instability;
- war, invasion, civil disturbance or acts of terrorism;
- taking of property by nationalization or expropriation without fair compensation;

- changes in government policies and regulations;
- loss or non-renewal of treaties or similar agreements with foreign tax authorities;
- difficulties in enforcement of contractual obligations;
- imposition of limitations on conversions of currencies into United States dollars or remittance of dividends and other payments by international subsidiaries;
- imposition or increase of withholding and other taxes on income remittances and other payments by international subsidiaries;
- hyperinflation, currency devaluation or defaults in certain countries;
- impositions or increase of investment and other restrictions or requirements by non-United States governments;
- national and regional labor strikes, whether legal or illegal and other labor or social actions; and
- restrictive governmental trade policies, customs, tariffs, import/export and other trade compliance regulations.

The Current and Future Challenging Global Economy and Disruption and Volatility of the Financial and Credit Markets may Adversely Affect our Business.

Current global economic conditions are challenging to our global business operations. Such conditions have had, and may continue to have, a negative impact on our financial results. Future economic downturns, either in the United States, Europe or in other regions in which we do business could negatively affect our business and results of operations. The volatility of the current economic climate, especially in relation to ongoing uncertainties related to geopolitical events around the world, makes it difficult for us to predict the complete impact of the forgoing matters on our business and results of operations. Due to these current and future economic conditions, our customers may face financial difficulties, the unavailability of or reduction in commercial credit, or both, that may result in decreased sales by and revenues to our company. Certain of our customers may cease operations or seek bankruptcy protection, which would reduce our cash flows and adversely impact our results of operations. Our customers that are financially viable and not experiencing economic distress may nevertheless elect to reduce the volume of orders for our products or close facilities in an effort to remain financially stable or as a result of the unavailability of commercial credit which would negatively affect our results of operations. We may experience difficulties in servicing, renewing or repaying our outstanding debt due to continued volatility in the global economy. We may also have difficulty accessing the global credit markets if there is a tightening of commercial credit availability, which would result in decreased ability to fund capital-intensive strategic projects.

Further, we may experience challenges in forecasting revenues and operating results due to these global economic conditions. The difficulty in forecasting revenues and operating results may result in volatility in the market price of our common stock.

In addition, the lenders under our senior secured credit agreement and other borrowing facilities described in Item 7 of this Form 10-K under “Liquidity and Capital Resources – Borrowing Arrangements” and the counterparties with whom we maintain interest rate swap agreements, currency forward contracts and derivatives and other hedge agreements may be unable to perform their lending or payment obligations in whole or in part, or may cease operations or seek bankruptcy protection, which would negatively affect our cash flows and our results of operations.

A downgrade in our credit rating could also impact our ability to effectively finance our operations and could lead to increased borrowing costs and limits on our access to capital.

The equipment that we use in our manufacturing operations is expensive and requires continued maintenance. We require significant capital investment to maintain our equipment. If our existing sources of capital prove insufficient, there can be no assurance that we will be able to obtain capital to finance these expenditures on favorable terms, or at all. Any inability by us to maintain our equipment as needed or any inability to obtain capital for expenditures on equipment maintenance on favorable terms could have an adverse effect on our business, financial position and results of operations.

The Continuing Consolidation of our Customer Base and Suppliers May Intensify Pricing Pressure.

Over the last few years, many of our large industrial packaging, containerboard and corrugated products customers have acquired, or been acquired by, companies with similar or complementary product lines. In addition, many of our suppliers of raw materials such as steel, resin and paper, have undergone a similar process of consolidation. This consolidation has increased the concentration of our largest customers, resulting in increased pricing pressures from our customers. The consolidation of our largest suppliers has resulted in limited sources of supply and increased cost pressures from our suppliers. Any future consolidation of our customer base or our suppliers could negatively impact our business, results of operations and financial condition. Furthermore, if one or more of our major customers reduces, delays or cancels substantial orders, if one or more of our major suppliers is unable to timely

produce and deliver our orders our business, results of operations, financial condition and cash flows may be materially and adversely affected, particularly for the period in which the reduction, delay or cancellation occurs and also possibly for subsequent periods.

We Operate in Highly Competitive Industries.

Each of our business segments operates in highly competitive industries. The most important competitive factors we face are price, quality and service. To the extent that one or more of our competitors become more successful with respect to any of these key competitive factors, we could lose customers and our sales could decline. In addition, due to the tendency of certain customers to diversify their suppliers, we could be unable to increase or maintain sales volumes with particular customers. Certain of our competitors are substantially larger and have significantly greater financial resources.

In addition, some rigid industrial packaging products are made from raw materials that are subject to pronounced price fluctuations, such as steel, which is used in the manufacture of steel drums and containers, and oil, which in turn affects the price of resin for plastic drums and containers. Particularly in well-developed markets in Europe and in the United States, any substantial increases in the supply of rigid industrial packaging resulting from capacity increases, the stockpiling of raw materials or other types of opportunistic behavior by our competitors in a period of high raw materials prices, or price wars, could adversely affect our margins and the profitability of our business. Although price is a significant basis of competition in our industry, we also compete on the basis of product reliability, the ability to deliver products on a global scale and our reputation for quality and customer service. If we fail to maintain our current standards for product quality, the scope of our distribution capabilities or our customer relationships, our business, results of operations and financial condition could be adversely affected.

Negative media reports about us or our businesses, whether accurate or inaccurate, could damage our reputation and relationships with our customers and suppliers, cause customers and suppliers to terminate their relationship with us, or impair our ability to effectively compete, which could adversely affect our business, results of operations or financial condition.

Our Business is Sensitive to Changes in Industry Demands.

Industry demand for containerboard in the United States and certain of our industrial packaging products in our United States, European and other international markets has varied in recent years causing competitive pricing pressures for those products. We compete in industries that are capital intensive, which generally leads to continued production as long as prices are sufficient to cover marginal costs. As a result, changes in industry demands, including any resulting industry over-capacity, may cause substantial price competition and, in turn, negatively impact our business, results of operations and financial condition.

Raw Material and Energy Price Fluctuations and Shortages may Adversely Impact our Manufacturing Operations and Costs.

The principal raw materials used in the manufacture of our products are steel, resin, pulpwood, old corrugated containers for recycling, used industrial packaging for reconditioning, and containerboard, which we purchase or otherwise acquire in highly competitive, price sensitive markets. These raw materials have historically exhibited price and demand cyclicalities. In addition, we manufacture certain component parts for our rigid industrial packaging products and those of some of our competitors. Some of these materials and component parts have been, and in the future may be, in short supply. For example, the availability of these raw materials and component parts and/or our ability to purchase and transport these raw materials and produce and transport these component parts may be unexpectedly disrupted by adverse weather conditions, natural disasters, man-made disasters, a substantial economic downturn in the industries that provide any of those raw materials, or competition for use of raw materials and component parts in other regions or countries. However, we have not recently experienced any significant difficulty in obtaining our principal raw materials or component parts. We have long-term supply contracts in place for obtaining a portion of our principal raw materials. The cost of producing our products is also sensitive to the price of energy (including its impact on transport costs). Energy prices, in particular oil and natural gas, have fluctuated in recent years, with a corresponding effect on our production costs. Potential legislation, regulatory action and international treaties related to climate change, especially those related to the regulation of greenhouse gases, may result in significant increases in raw material and energy costs. There can be no assurance that we will be able to recoup any past or future increases in the cost of energy and raw materials.

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.

In March 2018, the U.S. announced new tariffs on imported steel and aluminum products. Other international trade actions and initiatives also have been announced, notably the imposition by the U.S. of additional tariffs on products of Chinese origin, and China's imposition of additional tariffs on U.S.-origin goods. If we are unable to mitigate the impact of these additional duties, our business and profits may be materially and adversely affected. Further changes in U.S. trade policy, or additional sanctions, could result in retaliatory actions by other countries that could materially and negatively impact the volume of economic activity

in the U.S., which, in turn, could reduce our revenues, and increase our operating costs. In addition, many of our customers use our packaging to transport their products internationally. The impact of duties and retaliatory actions on their businesses could result in a negative impact on our business, results of operations and financial condition.

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.

In June 2016, a majority of voters in the United Kingdom elected to withdraw from the European Union (the "EU") in a national referendum. In March 2017, the United Kingdom formally notified the EU of its intention to withdraw pursuant to Article 50 of the Lisbon Treaty. The referendum was advisory, and the terms of any withdrawal are subject to a negotiation period that could last until March 2019. The referendum has created significant uncertainty about the future relationship between the United Kingdom and the EU, and has given rise to calls for the governments of other EU member states to consider withdrawal.

These developments, or the perception that any of them could occur, may have a material adverse effect on global economic conditions and the stability of global financial markets, and could significantly reduce global market liquidity and restrict the ability of key market participants to operate in certain financial markets. Asset valuations, currency exchange rates and credit ratings may be especially subject to increased market volatility. Lack of clarity about future United Kingdom laws and regulations as the United Kingdom determines which EU laws to replace or replicate in the event of a withdrawal, could depress economic activity, restrict our access to capital or adversely affect our contracts or relationships with customers in the United Kingdom or elsewhere in the European economic area. If the United Kingdom and the EU are unable to negotiate acceptable withdrawal terms or if other EU member states pursue withdrawal, barrier-free access between the United Kingdom and other EU member states or among the European economic area overall could be diminished or eliminated. Any of these factors could have a material adverse effect on our business, results of operations and financial condition.

Geopolitical Conditions, Including Direct or Indirect Acts of War or Terrorism, Could Have A Material Adverse Effect on our Operations and Financial Results.

Our operations could be disrupted by geopolitical conditions such as international boycotts and sanctions, acts of war, terrorist activity or other similar events. Such events could make it difficult or impossible to manufacture or deliver products to our customers, receive production materials from our suppliers, or perform critical functions, which could adversely affect our business globally or in certain regions. While we maintain similar manufacturing capacities at different locations and coordinate multi-source supplier programs on many of our materials which would better enable us to respond to these types of events, we cannot be sure that our plans will fully protect us from all such disruptions.

We May Encounter Difficulties Arising from Acquisitions.

We have invested a substantial amount of capital in acquisitions, joint ventures and strategic investments and we expect that we will continue to do so in the foreseeable future. We are continually evaluating acquisitions and strategic investments that are significant to our business both in the United States and internationally. Acquisitions, joint ventures and strategic investments involve numerous risks, including the failure to identify suitable acquisition candidates, complete acquisitions on acceptable terms and conditions, retain key customers, employees and contracts, the inability to integrate businesses without material disruption, unanticipated costs incurred in connection with integrating businesses, the incurrence of liabilities greater than anticipated or operating results that are less than anticipated, the inability to realize the projected value, and the inability to realize projected synergies. In addition, acquisitions, joint ventures and strategic investments and associated integration activities require time and attention of management and other key personnel, and other companies in our industries have similar acquisition and investment strategies. There can be no assurance that any acquisitions, joint ventures and strategic investments will be successfully integrated into our operations, that competition for acquisitions will not intensify or that we will be able to complete such acquisitions, joint ventures and strategic investments on acceptable terms and conditions. The costs of unsuccessful acquisition, joint venture and strategic investment efforts may adversely affect our results of operations, financial condition or prospects.

In Connection With Acquisitions or Divestitures, We may become Subject to Liabilities.

In connection with any acquisitions or divestitures, we may become subject to liabilities or legal claims, including but not limited to third party liability and other tort claims; claims for breach of contract; employment-related claims; environmental, health and safety liabilities, conditions or damage; permitting, regulatory or other compliance with law issues; or tax liabilities. If we become subject to any of these liabilities or claims, and they are not adequately covered by insurance or an enforceable indemnity or similar agreement from a creditworthy counterparty, we may be responsible for significant out-of-pocket expenditures. These liabilities, if they materialize, could have a material adverse effect on our business, financial condition and results of operations.

We may Incur Additional Restructuring Costs and there is no Guarantee that our Efforts to Reduce Costs Will Be Successful.

We have restructured portions of our operations from time to time in recent years, particularly following acquisitions of businesses and periods of economic downturn due to local, regional or global economic conditions. We will continue to implement continuous improvement initiatives necessary or desirable to improve our business portfolio, address underperforming assets and generate additional cash. These initiatives may include selling, general and administrative reductions throughout our Company and have and will likely continue to result in the rationalization of manufacturing facilities.

The rationalization of our manufacturing facilities may result in temporary constraints upon our ability to produce the quantity of products necessary to fill orders and thereby complete sales in a timely manner. In addition, system upgrades at our manufacturing facilities that impact ordering, production scheduling and other related manufacturing processes are complex, and could impact or delay production targets. A prolonged delay in our ability to fill orders on a timely basis could affect customer demand for our products and increase the size of our product inventories, causing future reductions in our manufacturing schedules and adversely affecting our results of operations. Moreover, our continuous development and production of new products will often involve the retooling of existing manufacturing facilities. This retooling may limit our production capacity at certain times in the future, which could adversely affect our results of operations and financial condition. In addition, the expansion and reconfiguration of existing manufacturing facilities could increase the risk of production delays, as well as require significant investments of capital.

While we expect these initiatives to result in significant profit opportunities and savings throughout our organization, our estimated profits and savings are based on several assumptions that may prove to be inaccurate, and as a result, there can be no assurance that we will realize these profits and cost savings or that, if realized, these profits and cost savings will be sustained. Failure to achieve or delays in achieving projected levels of efficiencies and cost savings from such measures, or unanticipated inefficiencies resulting from manufacturing and administrative reorganization actions in progress or contemplated, could adversely affect our results of operations and, financial condition and harm our reputation.

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.

The multinational nature of our business subjects us to taxation in the United States and numerous foreign jurisdictions. Due to economic and political conditions, tax rates in various jurisdictions may be subject to significant change. Our future effective tax rates could be affected by changes in the mix of earnings in countries with differing statutory tax rates, changes in the valuation of deferred tax assets and liabilities, or changes in tax laws or their interpretation.

The Tax Cuts and Jobs Act of 2017 (the "Tax Reform Act") was enacted into law in December 2017. The Tax Reform Act, among other things, reduced the U.S. federal corporate tax rate from 35 percent to 21 percent and required companies to pay a one-time tax to repatriate, for U.S. purposes, earnings of certain foreign subsidiaries that were previously deferred for tax purposes. In addition, beginning in our fiscal year 2019, the Tax Reform Act limits certain deductions and creates new taxes on certain foreign sourced earnings. While we generally expect the impact of the Tax Reform Act to be positive, it is possible that the limitation of certain deductions and the creation of new taxes could be more detrimental to us than anticipated.

Tax laws are complex and subject to varying interpretations. At this time, we believe we are properly reflecting the provision for taxes on income using all current enacted global tax laws in every jurisdiction in which we operate. However, there can be no assurance that our tax positions will not be challenged by relevant tax authorities or that we would be successful in any such challenge.

Full Realization of our Deferred Tax Assets may be Affected By a Number Of Factors.

We have deferred tax assets, including foreign net operating loss carryforwards along with U.S. and foreign capital loss carryforwards, employee and retiree benefit items, and other accruals not yet deductible for tax purposes. We have established valuation allowances to reduce those deferred tax assets to an amount that is more likely than not to be realized. Our ability to use these deferred tax assets depends in part upon our having future taxable income during the periods in which these temporary differences reverse or our ability to carry back any losses created by the deduction of these temporary differences. We expect to realize these assets over an extended period. However, if we were unable to generate sufficient future taxable income in the U.S. and certain foreign jurisdictions, or if there were a significant change in the time period within which the underlying temporary differences became taxable or deductible, we could be required to increase our valuation allowances against our deferred tax assets, which could have a material adverse effect on our financial condition and results of operations.

Several Operations are Conducted by Joint Ventures That We Cannot Operate Solely for our Benefit.

Several operations, particularly in developing countries, are conducted through joint ventures, such as a significant joint venture in our Flexible Products & Services segment. In countries that require us to conduct business through a joint venture with a local joint venture partner, the loss of a joint venture partner or a joint venture partner's loss of its ability to conduct business in such

country may impact our ability to conduct business in that country. Sanctions that apply to a partner of a joint venture partner or to a joint venture's directors or officers could also impact our ability to conduct business through that joint venture.

In joint ventures, we share ownership and, in some instances, management of a company with one or more parties who may or may not have the same goals, strategies, priorities or resources as we do. In general, joint ventures are intended to be operated for the benefit of all co-owners, rather than for our exclusive benefit. Operating a business as a joint venture often requires additional organizational formalities as well as time-consuming procedures for sharing information, accounting and making decisions. In certain cases, our joint venture partners must agree in order for the applicable joint venture to take certain actions, including acquisitions, the sale of assets, budget approvals, borrowing money and granting liens on joint venture property. Our inability to take unilateral action that we believe is in our best interests may have an adverse effect on the financial performance of the joint venture and the return on our investment. In joint ventures, we believe our relationship with our co-owners is an important factor to the success of the joint venture, and if a co-owner changes, our relationship may be adversely affected. In addition, the benefits from a successful joint venture are shared among the co-owners, so that we do not receive all the benefits from our successful joint ventures. Finally, we may be required on a legal or practical basis or both, to accept liability for obligations of a joint venture beyond our economic interest, including in cases where our co-owner becomes bankrupt or is otherwise unable to meet its commitments. For additional information with respect to the joint venture relating to our Flexible Products & Services segment, refer to Item 7, Management's Discussion and Analysis of Financial Condition and Results of Operation – Variable Interest Entities.

Certain of the Agreements that Govern our Joint Ventures Provide our Partners With Put or Call Options.

The agreements that govern certain of our current joint ventures under certain circumstances provide the joint venture partner with the right to sell their participation in the joint venture to us or the right to acquire our participation in the joint venture. Some of the joint venture agreements provide that the joint venture partner can sell its participation for a certain purchase price calculated on the basis of a fixed multiple. Such put and call rights may result in financial risks for us. In addition, such rights could negatively impact our operations if as a result of their exercise we lose access to members of our management teams that are familiar with local markets or distribution and manufacturing channels.

Our Ability to Attract, Develop and Retain Talented and Qualified Employees, Managers and Executives Is Critical to our Success.

Our ability to attract, develop and retain talented and qualified employees, including executives and other key managers, is important to our business. This is becoming more difficult in the current highly competitive hiring and retention environment. The retirement of or unforeseen loss of key officers and employees without appropriate succession planning or the ability to develop or hire replacements could hinder our strategic planning and execution and make it difficult to manage our business and meet our objectives resulting in a material adverse effect on our business, results of operations and financial condition.

Our Business may be Adversely Impacted by Work Stoppages and Other Labor Relations Matters.

We are subject to risk of work stoppages and other labor relations matters because a significant number of our employees are represented by unions. We have experienced work stoppages and strikes in the past, and there may be work stoppages and strikes in the future. Any prolonged work stoppage or strike at any one of our principal manufacturing facilities could have a negative impact on our business, results of operations and financial condition. In addition, upon the expiration of existing collective bargaining agreements, we may not reach new agreements without union action and any such new agreements may not be on terms satisfactory to us.

We may not Successfully Identify Illegal Immigrants in our Workforce.

Our business is subject to laws regarding employment of illegal immigrants. Although we have taken steps that we believe are sufficient and appropriate to ensure compliance with immigration laws, we cannot provide assurance that we have identified, or will identify in the future, all illegal immigrants who work for us. Our failure to identify illegal immigrants who work for us may result in fines or other penalties being imposed upon us, which could have an adverse effect on our business, financial condition and results of operations.

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.

We sponsor various pension and similar benefit plans worldwide.

Our U.S. and non-U.S. pension and postretirement plans were underfunded by an aggregate of \$67.6 million and \$10.7 million, respectively, as of October 31, 2018. We are legally required to make cash contributions to our pension plans in the future, and those cash contributions could be material.

In fiscal 2019, we expect, but are not obligated, to make cash contributions and direct benefit payments of approximately \$14.3 million and \$1.3 million to our U.S. and non-U.S. pension and postretirement plans, respectively, which we believe will be sufficient to meet the minimum funding requirements under applicable laws. We expect, however, our future funding obligations for our pension and postretirement plans depend upon the levels of benefits provided for by these plans, the future performance of assets set aside for these plans, the rates of interest used to determine funding levels, the impact of potential business dispositions, actuarial data and experience, and any changes in government laws and regulations. Accordingly, our future funding requirements for our pension and postretirement plans could be higher than expected, which could have a material adverse effect on our financial condition and liquidity.

In addition, our pension plans hold a significant amount of equity securities. If the market values of these securities decline, our pension expense and funding requirements will increase, which could have a material adverse effect on our financial condition and liquidity.

Any decrease in interest rates and asset returns, if and to the extent not offset by contributions, could increase our obligations under our pension plans. If the performance of assets held in these pension plans does not meet our expectations, our cash contributions for these plans could be higher than we expect, which could have a material adverse effect on our financial condition and liquidity.

We may be Subject to Losses that Might not be Covered in Whole or in Part by Existing Insurance Reserves or Insurance Coverage.

We are self-insured for certain of the claims made under our employee medical and dental insurance programs and for certain of our workers' compensation claims. We establish reserves for estimated costs related to pending claims, administrative fees and claims incurred but not reported. Because establishing reserves is an inherently uncertain process involving estimates, currently established reserves may not be adequate to cover the actual liability for claims made under our employee medical and dental insurance programs and for certain of our workers' compensation claims. If we conclude that our estimates are incorrect and our reserves are inadequate for these claims, we will need to increase our reserves, which could adversely affect our financial condition and results of operations.

We have comprehensive liability, fire and extended coverage insurance on our facilities, with policy specifications and insured limits customarily carried for similar properties. However, there are certain types of losses, such as losses resulting from wars, acts of terrorism, wind storm, flood, earthquake or other natural disasters, or pollution, that may be uninsurable or subject to restrictive policy conditions. In these instances, should a loss occur in excess of insured limits, we could lose capital invested in that property, as well as the anticipated future revenues derived from the manufacturing activities conducted at that property, while remaining obligated for any financial obligations related to the property. Any such loss would adversely impact our business, financial condition and results of operations.

We purchase insurance policies covering general liability and product liability with substantial policy limits. However, there can be no assurance that any liability claim would be adequately covered by our applicable insurance policies or it would not be excluded from coverage based on the terms and conditions of the policy. This could also apply to any applicable contractual indemnity.

We also purchase environmental liability policies where legally required and may elect to purchase coverage in other circumstances in order to transfer all or a portion of environmental liability risk through insurance. However, there can be no assurance that any environmental liability claim would be adequately covered by our applicable insurance policies or that it would not be excluded from coverage based on the terms and conditions of the policy.

Our Business Depends on the Uninterrupted Operations of Our Facilities, Systems and Business Functions, including our Information Technology (IT) and Other Business Systems.

Our business is dependent upon our ability to execute, in an efficient and uninterrupted fashion, necessary business functions, such as accessing key business data, financial information, order processing, invoicing and the operation of IT dependent manufacturing equipment. In addition, a significant portion of the communication between our employees, customers and suppliers around the world depends on our IT systems. A shut-down of or inability to access one or more of our facilities, a power outage, a pandemic, or a failure of one or more of our IT, telecommunications or other systems could significantly impair our ability to perform such functions on a timely basis.

We are in the process of implementing a standard IT platform across our business and have successfully completed implementation in approximately three-fourths of our locations. The transition from many former systems, many of which were acquired in connection with business acquisitions, to a single system will reduce complexity and inefficiencies in monitoring business results and consolidating financial data. The transition could result in adverse business effects. This project has been ongoing for several years requiring significant human and financial resources and is expected to be substantially complete by fiscal 2020, with work at our Flexible Products & Services operations being completed later in 2020. There can be no assurance that this project will be successful, and even if successful, there can be no assurance that other difficulties and inefficiencies will not exist in our systems.

We have established a business continuity plan in an effort to ensure the continuation of core business operations in the event that normal operations could not be performed due to a catastrophic event. While we continue to test and assess our business continuity plan to ensure it meets the needs of our core business operations and addresses multiple business interruption events, there is no assurance that core business operations could be performed upon the occurrence of such an event.

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.

In the conduct of our business, we collect, use, transmit, store and report data on information systems and interact with customers, vendors and employees. Increased global IT security threats and more sophisticated and targeted computer crime pose a risk to the security of our systems and networks and the confidentiality, availability and integrity of our data. Despite our security measures, our IT systems and infrastructure may be vulnerable to computer viruses, cyber-attacks, security breaches caused by employee error or malfeasance or other disruptions. Any such threat could compromise our networks and the information stored there could be accessed, publicly disclosed, lost or stolen. A security breach of our computer systems could interrupt or damage our operations or harm our reputation. In addition, we could be subject to legal claims or proceedings, liability under laws that protect the privacy of personal information and regulatory penalties if confidential information relating to customers, suppliers, employees or other parties is misappropriated from our computer system.

In May 2018, the EU enacted the General Data Protection Regulation, which provides for significantly increased responsibilities for companies that process EU personal data as well as significant penalties for noncompliance. As a result of these new regulations, we expect to see increased regulatory and customer attention surrounding data privacy. Furthermore, outside of the EU, we continue to see increased regulation of data privacy and security, including the adoption of more stringent subject matter specific state laws and national laws regulating the collection and use of data, as well as security and data breach obligations. The uncertainty and changes in the requirements of multiple jurisdictions may increase the cost of compliance, reduce demand for our services, restrict our ability to offer services in certain locations, impact our customers' ability to deploy our solutions in certain jurisdictions, or subject us to sanctions by national data protection regulators, all of which could harm our business, financial condition, and results of operations. Failure to provide adequate privacy protections and maintain compliance with the new data privacy laws, like the General Data Protection Regulation, could jeopardize business transactions across borders and result in significant penalties. These laws could create liability for us or increase our cost of doing business.

Similar security threats exist with respect to the IT systems of our lenders, suppliers, consultants, advisors and other third parties with whom we conduct business. A security breach of those computer systems could result in the loss, theft or disclosure of confidential information and could also interrupt or damage our operations, harm our reputation and subject us to legal claims.

The regulatory framework for privacy issues is evolving worldwide, and various government and consumer agencies and public advocacy groups have called for new regulation and changes in industry practices. It is possible that new laws and regulations will be adopted in the United States and internationally, or existing laws and regulations may be interpreted in new ways that would affect our business. Complying with any new regulatory requirements could force us to incur substantial costs or require us to change our business practices in a manner that could reduce our revenue or compromise our ability to effectively pursue our growth strategy.

To date, we have seen no material impact on our business or operations from these threats. However, we cannot assure that our security efforts will prevent unauthorized access or loss of functionality to our or our third-party providers' systems.

Legislation/Regulation Related to Environmental and Health and Safety Matters and Corporate Social Responsibility could Negatively Impact our Operations and Financial Performance.

We must comply with extensive laws, rules and regulations in the United States and in each of the countries where we conduct business regarding environmental matters, such as air, soil and water quality and waste disposal. We must also comply with extensive laws, rules and regulations regarding safety, health and corporate responsibility matters. There can be no assurance that compliance with existing and new laws, rules and regulations will not require significant expenditures.

In addition, laws, rules and regulations, as well as the interpretation and administration of such laws and regulations by governmental agencies, can change and restrict or prohibit the manner in which we conduct our current operations, require additional permits to engage in some or all of our current operations, or increase the cost of some or all our operations. For example, certain of the remedies being sought by the U.S. EPA in the proceedings relating to the Container Life Cycle Management LLC ("CLCM") facilities in the Milwaukee, Wisconsin area seek to implement changes in the way certain laws and regulations are interpreted and administered with respect to our reconditioning business. Such changes could adversely affect our business, results of operations and financial condition.

We are also subject to transportation safety regulations promulgated by the U.S. Department of Transportation ("DOT") and agencies in other jurisdictions. Both the DOT regulations and standards issued by the United Nations and adopted by various jurisdictions outside the United States set forth requirements related to the transportation of both hazardous and nonhazardous materials in some of our packaging products and subject our company to random inspections and testing to ensure compliance. Failure to comply could result in fines to us and could affect our business, results of operations and financial condition.

We are subject to laws, rules and regulations relating to some of the raw materials, such as resins and epoxy-based coatings, used in our rigid container business. These materials may contain Bisphenol-A (BPA), a chemical monomer that can be toxic in sufficient quantities, and is used in several food contact applications. Regulatory agencies in several jurisdictions worldwide have found these materials to be safe for food contact at current levels, but a significant change in regulatory rulings concerning BPA could have an adverse effect on our business.

At the EU-level, many laws and regulations are designed to protect human health and the environment. For example, Directive 2004/35/EC concerns obligations to remedy damages to the environment, which could require us to remediate contamination identified at sites we own or use. Other EU directives limit pollution from industrial activities, reduce emissions to air, water and soil, protect water resources, reduce waste, protect employee health and safety and regulate the registration, evaluation, authorization and restriction of chemicals. See "Business-Regulation." Failure to comply with these laws, or a change in the applicable legal framework, could affect our business, results of operations and financial condition.

Our customers in the food industry are subject to increasing laws, rules and regulations relating to food safety. As a result, customers may demand that changes be made to our products or facilities, as well as other aspects of our production processes, that may require the investment of capital. The failure to comply with these requests could adversely affect our relationships with some customers and result in negative effects on our business, results of operations and financial condition.

We are subject to the annual disclosure and reporting requirements regarding the use of "conflict minerals" from the Democratic Republic of the Congo and adjoining countries pursuant to Section 1502 of The Dodd-Frank Wall Street Reform and Consumer Protection Act. These requirements could affect the sourcing, availability and cost of minerals used in the manufacture of certain of our products. We have incurred and will continue to incur costs associated with complying with these supply chain due diligence procedures. In addition, because our supply chain is complex, we may face reputation challenges with our customers and other stakeholders if we are unable to sufficiently verify the origins of all minerals used in our products through the due diligence procedures that we implement.

Although there may be adverse financial impact (including compliance costs, potential permitting delays and increased cost of energy, raw materials and transportation) associated with any legislation, regulation or other action, the extent and magnitude of that impact cannot be reliably or accurately estimated due to the fact that some requirements have only recently been adopted and the present uncertainty regarding other additional measures and how they will be implemented. In addition, environmental, health and safety laws and regulations applicable to our business and the business of our customers, and the interpretation or enforcement of these laws and regulations, are constantly evolving and it is impossible to predict accurately the effect that changes in these laws and regulations, or their interpretation or enforcement, may have upon our business, results of operations or financial condition. Should environmental laws and regulations, or their interpretation or enforcement, become more stringent, our costs could increase, which may have a material adverse effect on our business, results of operations and financial condition.

Product Liability Claims and Other Legal Proceedings could Adversely Affect our Operations and Financial Performance.

We produce products and provide services related to other parties' products, including sensitive products such as food ingredients, pharmaceutical ingredients and hazardous substances. Incidents involving these product types can involve risk of recall, contamination, spillage, leakage, fires, and explosions, which can threaten individual health and cause the breakdown or failure of equipment or processes and the performance of facilities below expected levels of capacity. If any of our customers have such accidents involving our products, they may bring product liability claims against us. While we have built extensive operational processes to ensure that the design and manufacture of our products meet rigorous quality standards, there can be no assurance that we or our customers will not experience operational process failures that could result in potential product, safety, regulatory or environmental claims and associated litigation. We are also subject to a variety of legal proceedings and legal compliance risks

in our areas of operation around the globe. Any such claims, whether with or without merit, could be time consuming and expensive to defend and could divert management's attention and resources. In accordance with customary practice, we maintain insurance against some, but not all, of these potential claims. In the future, we may not be able to maintain insurance at commercially acceptable premium levels at all. In addition, the levels of insurance we maintain may not be adequate to fully cover any and all losses or liabilities. If any significant judgment or claim is not fully insured or indemnified against, it could have a material adverse impact on our business, financial condition and results of operations.

We and the industries in which we operate are at times being reviewed or investigated by regulators and other governmental agencies, which could lead to enforcement actions, fines and penalties or the assertion of private litigation claims and damages. Simply responding to actual or threatened litigation or government investigations of our compliance with regulatory standards may require significant expenditures of time and other resources. While we believe that we have adopted appropriate risk management and compliance programs, the global and diverse nature of our operations means that legal and compliance risks will continue to exist and legal proceedings and other contingencies, the outcome of which cannot be predicted with certainty, will arise from time to time that could adversely affect our business, results of operations and financial condition.

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.

We cannot provide assurance that our internal controls will always protect us from reckless or criminal acts committed by our employees, agents or business partners that would violate U.S. and/or non-U.S. laws, including anti-bribery, competition, trade sanctions and regulation, and other laws. Any such improper actions could subject us to civil or criminal investigations in the U.S. and in other jurisdictions, could lead to substantial civil or criminal monetary and non-monetary penalties against us or our subsidiaries, and could damage our reputation. Even the allegation or appearance of our employees, agents or business partners acting improperly or illegally could damage our reputation and result in significant expenditures in investigating and responding to such actions.

Changing Climate, Climate Change Regulations and Greenhouse Gas Effects may Adversely Affect our Operations and Financial Performance.

There is continuing concern from members of the scientific community and the general public that emissions of greenhouse gases ("GHG") and other human activities have or will cause significant changes in weather patterns and increase the frequency or severity of weather events, wildfires and flooding. Climate change creates physical and financial risk. Physical risks from climate change include an increase in sea level and changes in weather conditions, such as an increase in precipitation, droughts and extreme weather events. These types of events may adversely impact us, our suppliers, our customers and their ability to purchase our products and our ability to manufacture and transport our products on a timely basis and could result in a material adverse effect on our business, results of operations and financial condition.

We believe it is likely that the scientific and political attention to issues concerning the extent and causes of climate change will continue, with the potential for further legislation and regulations that could affect our results of operations and financial condition. Foreign, federal, state and local regulatory and legislative bodies have proposed various legislative and regulatory measures relating to climate change, regulating GHG emissions and energy policies. If such legislation or regulations are enacted, we could incur increased energy, environmental and other costs and capital expenditures to comply with the limitations. Failure to comply with these regulations could result in fines to our company and could affect our business, results of operations and financial condition.

We, along with other companies in many business sectors, including our customers, are considering and implementing ways to reduce GHG emissions. As a result, our customers may request that changes be made to our products or facilities, as well as other aspects of our production processes, that increase costs and may require the investment of capital. The failure to comply with these requests could adversely affect our relationships with some customers, which in turn could adversely affect our business, results of operations and financial condition.

We could face increased costs related to defending and resolving legal claims and other litigation related to climate change and the alleged impact of our operations on climate change.

The Frequency and Volume of our Timber and Timberland Sales will Impact our Financial Performance.

We have a significant inventory of standing timber and timberland and approximately 17,900 acres of special use properties in the United States as of October 31, 2018. The frequency, demand for and volume of sales of timber, timberland and special use properties will have an effect on our financial condition and results of operations. In addition, volatility in the real estate market for special use properties could negatively affect our results of operations.

Changes in U.S. Generally Accepted Accounting Principles (U.S. GAAP) and SEC Rules and Regulations could Materially Impact our Reported Results.

U.S. GAAP and SEC accounting and reporting changes have become more frequent and significant in the past several years. These changes could have significant effects on our reported results when compared to prior periods and other companies and may even require us to retrospectively adjust prior periods from time to time. Additionally, material changes to the presentation of transactions in the consolidated financial statements could impact key ratios that analysts and credit rating agencies use to rate our company, increase our cost of borrowing and ultimately our ability to access the credit markets in an efficient manner.

The Financial Accounting Standard Board ("FASB") has issued an Accounting Standards Update ("ASU") that provides new requirements for revenue recognition effective for us on November 1, 2018. We anticipate that the impact of this standard will be limited to expanded disclosures, with no material impact on our financial position, results of operations, comprehensive income or cash flows. The FASB has also issued an ASU that provides new requirements for classification of certain cash receipts and cash payments on the statement of cash flows. 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. The update is effective for us on November 1, 2018, and will materially impact our cash flows from operating activities and cash flows from investing activities within the statement of cash flows. However, we do not anticipate the adoption will have a material impact on our financial position, results of operations, comprehensive income, cash flows or disclosures, other than the impact mentioned above. The FASB has also issued an ASU that provides new requirements for accounting for and disclosure of lease assets and lease liabilities on the balance sheet and disclosure of key information about lease arrangements effective for us on November 1, 2019 and we expect to elect certain available transitional practical expedients. We are in the process of determining the potential impact of adopting this guidance on our financial position, results of operations, comprehensive income, cash flows and disclosures, but expect to recognize a significant liability and corresponding asset associated with in-scope operating leases.

If We Fail to Maintain an Effective System of Internal Control, the Company may not be able to Accurately Report Financial Results or Prevent Fraud.

Effective internal controls are necessary to provide reliable financial reports and to assist in the effective prevention of fraud. We must annually evaluate our internal control procedures to satisfy the requirements of Section 404 of the Sarbanes-Oxley Act of 2002, which requires management and auditors to assess the effectiveness of internal controls. As described in Item 9A of this Form 10-K, management has concluded that our internal controls over financial reporting were effective as of October 31, 2018. In the past, we have reported material weaknesses in the adequacy of our internal controls, and there is no assurance that, in the future, material weaknesses will not be identified that would cause management to change its current conclusion as to the effectiveness of our internal controls. If we fail to maintain effective internal controls, we could report material weaknesses in the future, indicating that there is a reasonable possibility that our financial statements do not accurately reflect our financial condition.

We have a Significant Amount of Goodwill and Long-lived Assets which, if Impaired in the Future, would Adversely Impact our Results of Operations.

Our goodwill could be impaired if the fair value of any particular reporting unit is less than the carrying value of that reporting unit. Impairment of our goodwill would reduce our net income in the period of any such write down. We are required to evaluate goodwill reflected on its balance sheet at least annually, or when circumstances indicate a potential impairment. If it determines that the goodwill is impaired, we would be required to write off a portion or all of the goodwill. At October 31, 2018, the carrying value of our goodwill was \$776.0 million.

We may be required to record future impairments of our long-lived assets as we continue to restructure our business. Decisions to sell or close plants could reduce the estimated useful life of an asset group or indicate that the fair value of the asset group is less than the carrying value. We may also experience declines in particular businesses due to competition or other outside forces indicating our long-lived assets are not recoverable. Any resulting impairments will impact net income in the period in which the triggering event occurs and could be significant, which could have a material adverse effect on our financial condition and results of operations.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

The following are our principal operating locations and the products manufactured at such facilities or the use of such facilities. We consider our operating properties to be in satisfactory condition and adequate to meet our present needs. However, we expect to make further additions, improvements and consolidations of our properties to support our business.

Location	Products or Use	Owned	Leased
RIGID INDUSTRIAL PACKAGING & SERVICES			
Algeria	Steel drums	—	1
Argentina	Steel and plastic drums, pails, intermediate bulk containers, and water bottles	2	1
Australia	Closures	—	2
Austria	Steel drums, intermediate bulk containers, and reconditioned containers and services	1	—
Belgium	Steel and plastic drums and shared services	2	1
Brazil	Steel and plastic drums and intermediate bulk containers	5	3
Canada	Steel and plastic drums	2	—
Chile	Steel drums, water bottles, and warehouse	1	1
China	Steel and plastic drums, intermediate bulk containers, closures, and packaging services	8	2
Colombia	Steel drums, intermediate bulk containers, and water bottles	1	1
Costa Rica	Steel drums	—	1
Czech Republic	Steel drums	1	—
Denmark	Fibre drums	—	1
Egypt	Steel drums	—	1
France	Steel and plastic drums, closures, reconditioned containers, intermediate bulk containers and warehouse	4	1
Germany	Steel and plastic drums, closures, reconditioned containers and services and intermediate bulk containers	5	1
Greece	Steel drums	1	—
Guatemala	Steel drums	1	—
Hungary	Steel drums and shared services	1	1
Israel	Steel, plastic and fibre drums and intermediate bulk containers	—	1
Italy	Steel and plastic drums, closures, intermediate bulk containers and distribution center	1	3
Kenya	Steel drums	—	1
Malaysia	Steel and plastic drums	1	1
Mexico	Fibre, steel and plastic drums, closures and warehouse	1	3
Morocco	Steel and plastic drums	1	—
Netherlands	Steel drums, closures, paints and linings, research center, general offices, distribution center, reconditioned containers and services and intermediate bulk containers	4	1
Nigeria	Steel drums	1	—
Norway	Office	—	1
Philippines	Steel drums and water bottles	—	1
Poland	Steel drums and water bottles	1	—
Portugal	Steel drums	1	—
Russia	Steel drums, water bottles, intermediate bulk containers and general office	7	3

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Saudi Arabia	Steel drums	—	2
Singapore	Steel and plastic drums	—	1
South Africa	Steel and plastic drums	2	1
Spain	Steel drums and closures	2	2
Sweden	Steel and plastic drums and intermediate bulk containers	1	1
Turkey	Steel drums	1	—
Ukraine	Distribution center and water bottles	—	1
United Kingdom	Steel drums, reconditioned containers, and intermediate bulk containers	2	—
United States	Fibre, steel and plastic drums, intermediate bulk containers, reconditioned containers, closures, and packaging services	19	25
Venezuela	Idle	2	—
Vietnam	Steel drums	1	—

Location	Products or Use	Owned	Leased
FLEXIBLE PRODUCTS & SERVICES:			
Belgium	Manufacturing plant	—	1
Brazil	General office	—	1
Chile	General office	—	1
China	Manufacturing plant	—	1
France	Manufacturing plant	1	—
Germany	General offices and warehouse	—	2
India	General office	—	1
Ireland	Distribution center	—	1
Mexico	Manufacturing plant	—	1
Netherlands	General offices and warehouse	—	2
Portugal	Manufacturing plant	—	1
Romania	Manufacturing plants	—	2
Saudi Arabia	Idle	1	—
Turkey	Manufacturing plants	—	3
Ukraine	Manufacturing plant	1	—
United Kingdom	Manufacturing plant	—	1
United States	General offices	—	2
Vietnam	Manufacturing plant	—	1

Location	Products or Use	Owned	Leased
PAPER PACKAGING & SERVICES:			
United States	Corrugated sheets, containers and other products, containerboard, general offices and distribution centers	15	3

Location	Products or Use	Owned	Leased
LAND MANAGEMENT:			
United States	General offices	3	2

Location	Products or Use	Owned	Leased
CORPORATE:			
Luxembourg	General office	—	1
Netherlands	General office	—	1
United States	Principal and general offices	4	—

We also own a substantial amount of timber properties. Our timber properties consisted of approximately 243,000 acres in the southeastern United States as of October 31, 2018.

ITEM 3. LEGAL PROCEEDINGS

We are not a party to any pending legal proceedings that are material to our business or financial condition.

From time to time, we have been a party to legal proceedings arising at the country, state or local level involving environmental sites to which we have shipped, directly or indirectly, small amounts of toxic waste, such as paint solvents. As of the filing date of this Form 10-K, we have been classified only as a “de minimis” participant in such proceedings. Except as described in the following paragraphs, we are not a party to any legal proceedings involving a governmental authority and arising under any federal, state or local provisions that have been enacted or adopted regulating the discharge of materials into the environment or primarily for the purpose of protecting the environment and involving potential monetary sanctions in excess of \$100,000.

On July 19, 2017, the Wisconsin Department of Natural Resources (“WDNR”) issued Notices of Violation to us and CLCM with respect to CLCM’s three reconditioning facilities in the Milwaukee, Wisconsin area regarding violations of Wisconsin laws related to hazardous waste, air management and industrial storm water. On November 27, 2017, the United States Environmental Protection Agency (“U.S. EPA”) issued a Notice of Violation to us and CLCM with respect to CLCM’s reconditioning facilities in the Milwaukee, Wisconsin area regarding violations of the federal Resource Conservation and Recovery Act (“RCRA”), primarily related to the unlawful storage and treatment of hazardous wastes without RCRA licenses and violations of RCRA’s requirements related to hazardous waste determinations and hazardous waste activity notifications, and Wisconsin laws related to hazardous waste. On November 27, 2017, the U.S. EPA issued Notices and Findings of Violations to CLCM with respect to two of CLCM’s reconditioning facilities in the Milwaukee, Wisconsin area regarding violations of the federal Clean Air Act, primarily related to air management, and Wisconsin laws related to air management. 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. We have cooperated with the governmental agencies in these investigations and proceedings. As of the filing date of this Form 10-K, no citations have been issued or fines assessed with respect to any of these proceedings. With respect to one or more of these proceedings, monetary sanctions may be imposed by the U.S. EPA or the WNDNR and those monetary sanctions may exceed \$100,000 individually or in the aggregate.

On September 17, 2014, the State of Illinois (the “State”) filed suit against Olympic Oil Ltd. (“Olympic”), which at that time was owned by our subsidiary Delta Petroleum Company, Inc. (“Delta”), in the Circuit Court, Chancery Division, of Cook County, Illinois. The lawsuit involved alleged releases of petroleum products and ethylene glycol from Olympic’s facility in Stickney, Illinois. In 2015, Delta sold its ownership interest in Olympic, but agreed to indemnify Olympic for investigation and remediation costs and any civil penalties related to these alleged releases. In 2017, Delta and Greif, Inc. were added as defendants to the lawsuit. This matter went to trial in October 2018, and the court entered a judgment on November 16, 2018, denying the State’s request for an injunction for further investigation or remediation of the facility, but finding Olympic and Delta liable for certain statutory violations, assessing penalties of \$227,000 and allowing the State’s request for reimbursement of court costs. Greif, Inc. was found not liable by the court.

ITEM 4. MINE SAFETY DISCLOSURES

None.

PART II

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

Shares of our Class A and Class B Common Stock are listed on the New York Stock Exchange under the symbols GEF and GEF.B, respectively.

Financial information regarding our two classes of common stock, as well as the number of holders of each class and the high, low and closing sales prices for each class for each quarterly period for the two most recent years, is included in Note 19 of the Notes to Consolidated Financial Statements in Item 8 of this Form 10-K.

We pay quarterly dividends of varying amounts computed on the basis described in Note 14 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K. The annual dividends paid for the last two years are as follows:

2018 Dividends per Share – Class A \$1.70; Class B \$2.54

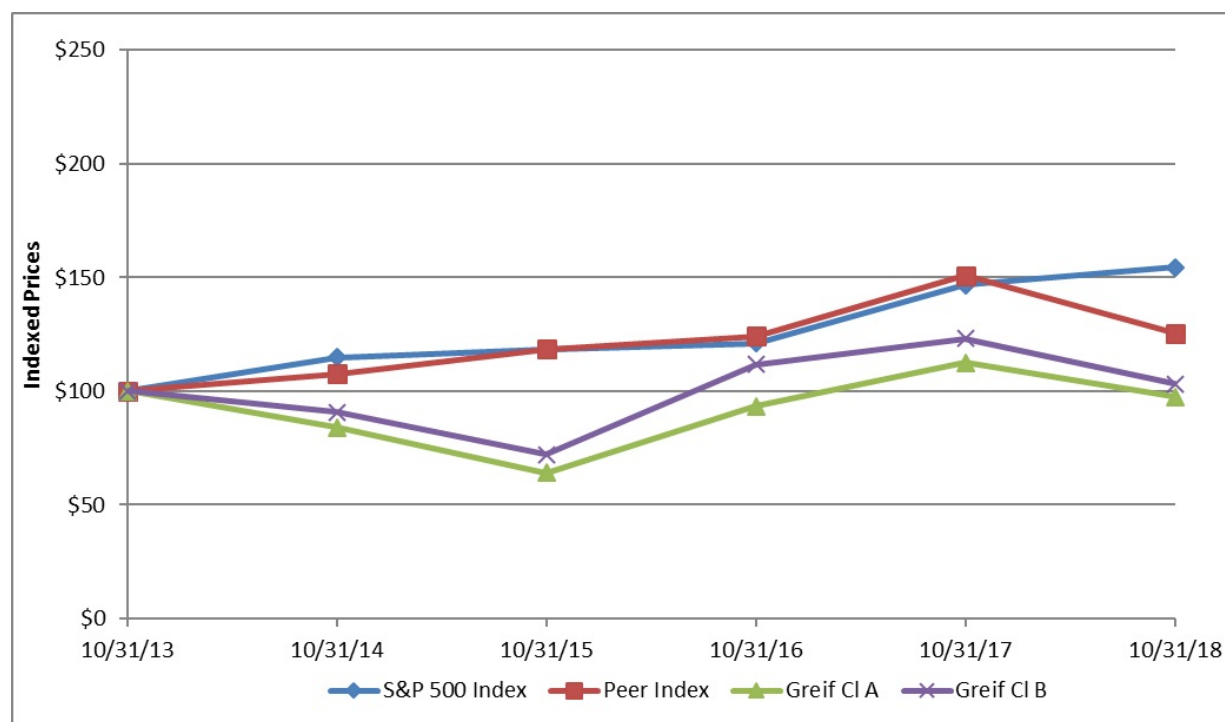
2017 Dividends per Share – Class A \$1.68; Class B \$2.51

The terms of our current credit agreement limit our ability to make “restricted payments,” which include dividends and purchases, redemptions and acquisitions of our equity interests. The payment of dividends and other restricted payments are subject to the condition that certain defaults not exist under the terms of our current credit agreement and, in the event that certain defaults exist, are limited in amount by a formula based, in part, on our consolidated net income. Refer to “Liquidity and Capital Resources – Borrowing Arrangements” in Item 7 of this Form 10-K.

In July 2017, the Board of Directors' Stock Repurchase Committee authorized and we executed the repurchase of 2,000 shares of Class B Common Stock as a part of the Board authorized common stock repurchase program. No stock has been repurchased during fiscal year 2018.

Performance Graph

The following graph compares the performance of shares of our Class A and B Common Stock to that of the Standard and Poor’s 500 Index and our industry group (Peer Index) assuming \$100 invested on October 31, 2013 and reinvestment of dividends for each subsequent year. The graph does not purport to represent our value.



The Peer Index comprises the containers and packaging index as shown by Dow Jones.

Equity compensation plan information required by Items 201(d) of Regulation S-K will be found under the caption “Equity Compensation Plan Information” in the 2019 Proxy Statement, which information is incorporated herein by reference.

ITEM 6. SELECTED FINANCIAL DATA

The five-year selected financial data is as follows:

<i>(in millions, except per share amounts)</i>	Year Ended October 31,				
	2018	2017	2016	2015	2014
Net sales	\$ 3,873.8	\$ 3,638.2	\$ 3,323.6	\$ 3,616.7	\$ 4,239.1
Net income attributable to Greif, Inc.	\$ 209.4	\$ 118.6	\$ 74.9	\$ 71.9	\$ 91.5
Total assets	\$ 3,194.8	\$ 3,232.3	\$ 3,153.0	\$ 3,315.7	\$ 3,667.4
Long-term debt, including current portion of long-term debt	\$ 907.6	\$ 952.8	\$ 974.6	\$ 1,146.9	\$ 1,105.0
Basic earnings per share:					
Class A Common Stock	\$ 3.56	\$ 2.02	\$ 1.28	\$ 1.23	\$ 1.56
Class B Common Stock	\$ 5.33	\$ 3.02	\$ 1.90	\$ 1.83	\$ 2.33
Diluted earnings per share:					
Class A Common Stock	\$ 3.55	\$ 2.02	\$ 1.28	\$ 1.23	\$ 1.56
Class B Common Stock	\$ 5.33	\$ 3.02	\$ 1.90	\$ 1.83	\$ 2.33
Dividends per share:					
Class A Common Stock	\$ 1.70	\$ 1.68	\$ 1.68	\$ 1.68	\$ 1.68
Class B Common Stock	\$ 2.54	\$ 2.51	\$ 2.51	\$ 2.51	\$ 2.51

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

The terms “Greif,” the “Company,” “we,” “us” and “our” as used in this discussion refer to Greif, Inc. and its subsidiaries.

RESULTS OF OPERATIONS

The discussion and analysis of our financial condition and results of operations are based upon our consolidated financial statements, which have been prepared in accordance with accounting principles generally accepted in the United States (“GAAP”). The preparation of these 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 at the date of our consolidated financial statements.

Historical revenues and earnings may or may not be representative of future operating results due to various economic and other factors.

The non-GAAP financial measure of EBITDA is used throughout the following discussion of our results of operations. EBITDA is defined as net income, plus interest expense, net, plus income tax expense, plus depreciation, depletion and amortization. Since we do not calculate net income by segment, EBITDA by segment is reconciled to operating profit by segment. We use 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. Additionally, EBITDA is a metric considered by debt holders and certain investors as an indicator of our ability to generate cash flow. EBITDA, as a non-GAAP financial measure, should not be considered an alternative or substitute for, and should not be considered superior to, any of our GAAP financial measures. Accordingly, users of this financial information should not place undue reliance on EBITDA.

The following table sets forth the net sales, operating profit (loss) and EBITDA for each of our business segments for 2018, 2017 and 2016:

Year Ended October 31, (in millions)	2018	2017	2016
Net sales			
Rigid Industrial Packaging & Services	\$ 2,623.6	\$ 2,522.7	\$ 2,324.2
Paper Packaging & Services	898.5	800.9	687.1
Flexible Products & Services	324.2	286.4	288.1
Land Management	27.5	28.2	24.2
Total net sales	<u>\$ 3,873.8</u>	<u>\$ 3,638.2</u>	<u>\$ 3,323.6</u>
Operating profit (loss):			
Rigid Industrial Packaging & Services	\$ 183.2	\$ 190.1	\$ 143.9
Paper Packaging & Services	158.3	93.5	89.1
Flexible Products & Services	19.4	5.8	(15.5)
Land Management	9.6	10.1	8.1
Total operating profit	<u>\$ 370.5</u>	<u>\$ 299.5</u>	<u>\$ 225.6</u>
EBITDA:			
Rigid Industrial Packaging & Services	\$ 249.0	\$ 241.9	\$ 223.8
Paper Packaging & Services	191.8	115.3	120.7
Flexible Products & Services	25.7	11.1	(11.3)
Land Management	14.2	14.6	11.9
Total EBITDA	<u>\$ 480.7</u>	<u>\$ 382.9</u>	<u>\$ 345.1</u>

The following table sets forth EBITDA, reconciled to net income and operating profit, for our consolidated results for 2018, 2017 and 2016:

Year Ended October 31, (in millions)	2018	2017	2016
Net income	\$ 229.5	\$ 135.1	\$ 75.5
Plus: Interest expense, net	51.0	60.1	75.4
Plus: Income tax expense	73.3	67.2	66.5
Plus: Depreciation, depletion and amortization expense	126.9	120.5	127.7
EBITDA	<u>\$ 480.7</u>	<u>\$ 382.9</u>	<u>\$ 345.1</u>
Net income	\$ 229.5	\$ 135.1	\$ 75.5
Plus: Interest expense, net	51.0	60.1	75.4
Plus: Income tax expense	73.3	67.2	66.5
Plus: Non-cash pension settlement charge	1.3	27.1	—
Plus: Other expense, net	18.4	12.0	9.0
Plus: Equity earnings of unconsolidated affiliates, net of tax	(3.0)	(2.0)	(0.8)
Operating profit	<u>370.5</u>	<u>299.5</u>	<u>225.6</u>
Less: Non-cash pension settlement charge	1.3	27.1	—
Less: Other expense, net	18.4	12.0	9.0
Less: Equity earnings of unconsolidated affiliates, net of tax	(3.0)	(2.0)	(0.8)
Plus: Depreciation, depletion and amortization expense	126.9	120.5	127.7
EBITDA	<u>\$ 480.7</u>	<u>\$ 382.9</u>	<u>\$ 345.1</u>

The following table sets forth EBITDA for each of our business segments, reconciled to the operating profit for each segment, for 2018, 2017 and 2016:

Year Ended October 31, (in millions)	2018	2017	2016
Rigid Industrial Packaging & Services			
Operating profit	\$ 183.2	\$ 190.1	\$ 143.9
Less: Non-cash pension settlement charge	1.3	16.7	—
Less: Other expense, net	17.1	10.5	5.5
Less: Equity earnings of unconsolidated affiliates, net of tax	(3.0)	(2.0)	(0.8)
Plus: Depreciation and amortization expense	81.2	77.0	84.6
EBITDA	\$ 249.0	\$ 241.9	\$ 223.8
Paper Packaging & Services			
Operating profit	\$ 158.3	\$ 93.5	\$ 89.1
Less: Non-cash pension settlement charge	—	10.2	—
Less: Other expense (income), net	0.7	(0.1)	—
Plus: Depreciation and amortization expense	34.2	31.9	31.6
EBITDA	\$ 191.8	\$ 115.3	\$ 120.7
Flexible Products & Services			
Operating profit (loss)	\$ 19.4	\$ 5.8	\$ (15.5)
Less: Non-cash pension settlement charge	—	0.1	—
Less: Other expense, net	0.6	1.6	3.5
Plus: Depreciation and amortization expense	6.9	7.0	7.7
EBITDA	\$ 25.7	\$ 11.1	\$ (11.3)
Land Management			
Operating profit	\$ 9.6	\$ 10.1	\$ 8.1
Less: Non-cash pension settlement charge	—	0.1	—
Plus: Depreciation, depletion and amortization expense	4.6	4.6	3.8
EBITDA	14.2	14.6	11.9
Consolidated EBITDA	\$ 480.7	\$ 382.9	\$ 345.1

Year 2018 Compared to Year 2017

Net Sales

Net sales were \$3,873.8 million for 2018 compared with \$3,638.2 million for 2017. The 6.5 percent increase was due primarily to strategic pricing decisions and contractual price changes in our Rigid Industrial Packaging & Services segment, increases in selling prices due to increases in published containerboard pricing and an increase in sales volumes in our Paper Packaging & Services segment, and strategic pricing decisions and product mix in our Flexible Products & Services segment, partially offset by volume declines due to customer operational interruptions, weather and strategic pricing decisions in our Rigid Industrial Packaging & Services segment.

Gross Profit

Gross profit was \$788.9 million for 2018 compared with \$714.7 million for 2017. The respective reasons for the improvement or decline in gross profit, as the case may be, for each segment are described below in the "Segment Review." Gross profit margin was 20.4 percent for 2018 compared to 19.6 percent for 2017.

Selling, General and Administrative Expenses

Selling, general and administrative ("SG&A") expenses increased 4.6 percent to \$397.9 million for 2018 from \$380.4 million for 2017. This increase was primarily due to increased health and medical expenses, increased non-income taxes and increased salary expenses. SG&A expenses were 10.3 percent of net sales for 2018 compared with 10.5 percent of net sales for 2017.

Restructuring Charges

Restructuring charges were \$18.6 million for 2018 compared with \$12.7 million for 2017. Refer to Note 6 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information.

Impairment Charges

There were no goodwill impairment charges for 2018 compared with \$13.0 million for 2017. The 2017 charges were related to the impairment of goodwill within the Rigid Industrial Packaging & Services segment.

Non-cash asset impairment charges were \$8.3 million for 2018 compared with \$7.8 million for 2017. In 2018, these charges were primarily related to plant closures and impairments of goodwill allocated to assets held for sale. Refer to Note 9 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information.

Gain on Disposal of Properties, Plants and Equipment, net

The gain on disposal of properties, plants, and equipment, net was \$5.6 million and \$0.4 million for 2018 and 2017, respectively. See Note 4 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information.

(Gain) Loss on Disposal of Businesses, net

The gain on disposal of business, net was \$0.8 million for 2018 and the loss on disposal of business, net was \$1.7 million for 2017. See Note 2 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information.

Operating Profit

Operating profit was \$370.5 million for 2018 compared with \$299.5 million for 2017. The \$71.0 million increase consisted of a \$64.8 million increase in the Paper Packaging & Services segment and a \$13.6 million increase in the Flexible Products & Services segment, partially offset by a \$0.5 million decrease in the Land Management segment and a \$6.9 million decrease in the Rigid Industrial Packaging & Services segment. When compared to 2017, the primary factors that contributed to the \$71.0 million increase in operating profit were increased gross profit of \$74.2 million, increased gains on disposal of properties, plants and equipment and businesses, net of \$7.7 million and decreased impairment charges of \$12.5 million, offset by increased restructuring charges of \$5.9 million and increased SG&A expenses of \$17.5 million.

EBITDA

EBITDA was \$480.7 million and \$382.9 million for 2018 and 2017, respectively. The \$97.8 million increase in EBITDA was primarily due to the same factors that impacted operating profit, as described above, in addition to a reduction of \$25.8 million in pension settlement charges. Depreciation, depletion and amortization expense was \$126.9 million for 2018 compared with \$120.5 million for 2017.

Trends

In 2019, we anticipate the global macroeconomic conditions to remain choppy depending on the regions and end use segments. While we expect positive demand patterns to continue in North America, we anticipate continued softness in Western Europe, parts of South America and, on a relative basis, China, which will impact our Rigid Industrial Packaging & Services business segment. We also anticipate that our Paper Packaging & Services business segment will benefit from a full year of containerboard price increases announced in 2018 and expansion projects that we have announced. Currency exchange rates are anticipated to continue to be volatile and provide headwinds for our Rigid Industrial Packaging & Services business segment, although raw material prices for steel, resin and old corrugated containers are expected to remain relatively stable in 2019, which will benefit our manufacturing business segments. The foregoing discussion of 2019 trends in our businesses does not consider the impact of our proposed acquisition of Caraustar. See Item 1(g) of this Form 10-K, Recent Events - Proposed Acquisition of Caraustar, for information concerning this proposed acquisition.

Segment Review

Rigid Industrial 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 increased 4.0 percent to \$2,623.6 million in 2018 from \$2,522.7 million in 2017. The \$100.9 million increase in net sales was primarily the result of an increase in selling prices due to strategic pricing decisions, contractual price changes and a \$18.9 million impact of foreign currency translation, partially offset by volume declines due to customer operational interruptions, weather and strategic pricing decisions.

Gross profit was \$490.8 million for 2018 compared with \$502.2 million for 2017. The \$11.4 million decrease in gross profit was primarily due to increased raw material costs, increased manufacturing expenses and the timing of contractual price changes. Gross profit margin decreased to 18.7 percent in 2018 from 19.9 percent in 2017.

Operating profit was \$183.2 million for 2018 compared with \$190.1 million for 2017. The \$6.9 million decrease was primarily attributable to the same factors impacting gross profit as well as increases in restructuring charges of \$6.1 million and increases in SG&A expenses of \$8.9 million, partially offset by an increase in gain on disposal of properties, plants, equipment and businesses, net of \$7.3 million and decreased impairment charges of \$12.2 million. The \$8.9 million increase in SG&A related to increased allocated corporate costs and increased non-income taxes.

EBITDA was \$249.0 million for 2018 compared with \$241.9 million for 2017. The \$7.1 million increase was due to the same factors that impacted the segment's operating profit, as described above, in addition to a reduction of \$15.4 million in pension settlement charges. Depreciation, depletion and amortization expense was \$81.2 million for 2018 compared with \$77.0 million for 2017.

Paper Packaging & Services

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; and
- Benefits from executing the Greif Business System.

Net sales increased 12.2 percent to \$898.5 million for 2018 compared with \$800.9 million for 2017, primarily due to increased published containerboard prices and increased sales volumes.

Gross profit was \$222.5 million for 2018 compared with \$150.9 million for 2017. Gross profit margin was 24.8 percent and 18.8 percent for 2018 and 2017, respectively. The increase in gross profit and gross profit margin was due primarily to higher containerboard sales prices and lower old corrugated container input costs, partially offset by increased transportation costs.

Operating profit was \$158.3 million for 2018 compared with \$93.5 million for 2017. The increase was primarily due to the same factors that impacted gross profit, partially offset by an increase in SG&A expenses of \$6.7 million due to an increase in allocated corporate costs and an increase in salaries and benefits expenses as a result of business performance.

EBITDA was \$191.8 million for 2018 compared with \$115.3 million for 2017. The increase was due primarily to the same factors that impacted the segment's operating profit, as described above, in addition to a reduction of \$10.2 million in pension settlement charges. Depreciation, depletion and amortization expense was \$34.2 million and \$31.9 million for 2018 and 2017, respectively.

Flexible Products & Services

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

Net sales increased 13.2 percent to \$324.2 million for 2018 compared with \$286.4 million for 2017. The increase was due primarily to product mix, strategic pricing decisions, volume increases, and a \$12.3 million impact of foreign currency translation.

Gross profit was \$65.2 million for 2018 compared with \$51.1 million for 2017. The increase was primarily attributable to the same factors that impacted net sales and improved transportation and manufacturing efficiencies, which also contributed to the increase in gross profit margin to 20.1 percent for 2018 from 17.8 percent for 2017.

Operating profit was \$19.4 million for 2018 compared with \$5.8 million for 2017. The increase was primarily related to the same factors impacting gross profit, partially offset by an increase in SG&A expenses of \$1.7 million primarily due to an increase in allocated corporate costs and an increase in salaries and benefits expenses as a result of business performance.

EBITDA was \$25.7 million for 2018 compared with \$11.1 million for 2017. The increase was due to the same factors that impacted the segment's operating profit, as described above. Depreciation, depletion and amortization expense was \$6.9 million for 2018 compared with \$7.0 million for 2017, respectively.

Land Management

As of October 31, 2018, our Land Management segment consisted of 243,000 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 properties, we continue to review our current portfolio and explore the development of certain of these properties. 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 sale of timberland property in "timberland gains," the sale of HBU and surplus property in "gain on disposal of properties, plants and equipment, net" and the sale of timber and development property under "net sales" and "cost of products sold" in our consolidated statements of income. All HBU and development property, together with surplus property, is used to productively grow and sell timber until the property is sold.

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 lakes or rivers, 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 October 31, 2018, we estimated that there were 17,900 acres in the United States of special use property, which we expect will be available for sale in the next five to seven years.

Net sales decreased to \$27.5 million for 2018 compared with \$28.2 million for 2017.

Operating profit decreased to \$9.6 million for 2018 from \$10.1 million for 2017.

EBITDA was \$14.2 million and \$14.6 million for 2018 and 2017, respectively. Depreciation, depletion and amortization expense was \$4.6 million for 2018 and 2017.

Other Income Statement Changes

Interest Expense, net

Interest expense, net was \$51.0 million and \$60.1 million for 2018 and 2017, respectively. The decrease was primarily due to the repayment of our Senior Notes due February 2017 with funds borrowed under our new senior secured credit agreement (the "2017 Credit Agreement"), lower long term debt balances, and lower interest rates resulting from the impact of our derivative financial instruments.

Other Expense, net

Other expense, net was \$18.4 million and \$12.0 million for 2018 and 2017, respectively. The increase was primarily due to other components of net benefit cost, \$5.9 million, which are required to be present outside of income from operations, as a result of our adoption of ASU 2017-07. Refer to Note 1 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information.

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, non-cash pension settlement charges, restructuring charges, and (gains) losses on sales of businesses.

	Summary	
	Year ended October 31,	
	2018	2017
Non-U.S. % of Consolidated Net Sales	51.4%	51.1%
U.S. % of Consolidated Net Sales	48.6%	48.9%
	<u>100.0%</u>	<u>100.0%</u>
Non-U.S. % of Consolidated I.B.I.T.	34.1%	42.6%
U.S. % of Consolidated I.B.I.T.	65.9%	57.4%
	<u>100.0%</u>	<u>100.0%</u>
Non-U.S. % of Consolidated I.B.I.T. before Special Items	36.9%	43.5%
U.S. % of Consolidated I.B.I.T. before Special Items	63.1%	56.5%
	<u>100.0%</u>	<u>100.0%</u>
Non-U.S. I.B.I.T. Reconciliation		
	Year ended October 31,	
	2018	2017
	\$	\$
Non-U.S. I.B.I.T.	102.3	85.2
Non-cash asset impairment charges	4.6	2.2
Goodwill impairment charges	—	13.0
Non-cash pension settlement charge	1.3	1.2
Restructuring charges	13.5	10.8
(Gain) loss on sale of businesses	(0.8)	1.7
Total Non-U.S. Special Items	<u>18.6</u>	<u>28.9</u>
Non-U.S. I.B.I.T. before Special Items	<u>\$ 120.9</u>	<u>\$ 114.1</u>
U.S. I.B.I.T. Reconciliation		
	Year ended October 31,	
	2018	2017
	\$	\$
U.S. I.B.I.T.	197.5	115.1
Non-cash asset impairment charges	3.7	5.6
Non-cash pension settlement charge	—	25.9
Restructuring charges	5.1	1.9
Total U.S. Special Items	<u>8.8</u>	<u>33.4</u>
U.S. I.B.I.T. before Special Items	<u>\$ 206.3</u>	<u>\$ 148.5</u>

* Income Before Income Tax expense = I.B.I.T.

Income Tax Expense

We had operations in over 40 countries during 2018. Operations outside the United States are subject to additional risks that may not exist, or be as significant, within the United States. Because of our global operations in numerous countries we are required to address different and complex tax systems and issues which are constantly changing.

Preparation of our financial statements requires the use of estimates and assumptions that affect the reported amounts of our assets and liabilities; and revenues and expenses as of the balance sheet date. The numerous tax jurisdictions in which we operate, along

with the variety and complexity of the various tax laws, creates a level of uncertainty, and requires judgment when addressing the impact of complex tax issues. Our effective tax rate and the amount of tax expense are dependent upon various factors, including the following: the tax laws of the jurisdictions in which income is earned; the ability to realize deferred tax assets at certain international subsidiaries; negotiation and dispute resolution with taxing authorities in the U.S. and international jurisdictions; and changes in tax laws.

The provision for income taxes is computed using the asset and liability method under this method, deferred tax assets and liabilities are recognized currently based on the anticipated future tax consequences of changes in the temporary differences between the book and tax bases of assets and liabilities. This method includes an estimate of the future realization of tax benefits associated with tax losses. Deferred tax assets and liabilities are measured using the currently enacted tax rates that apply to taxable income in effect for the years in which those assets are expected to be realized or settled.

Income tax expense for 2018 was \$73.3 million on \$299.8 million of pretax income and for 2017 was \$67.2 million on \$200.3 million of pretax income. For 2018, the reduction of the statutory federal corporate income tax rate due to the enactment of the Tax Cuts and Jobs Act of 2017 (the "Tax Reform Act"), as well as the mix of income and losses among various jurisdictions, resulted in a net tax increase of \$18.7 million on pre-tax income of \$99.5 million. Additionally, there was an \$11.0 million year-over-year increase in tax expense related to changes in the measurement of uncertain tax positions, offset by decreases related to audit settlements and the expiration of the statute of limitations. Further, there was a year-over-year \$1.9 million increase in withholding tax expense. These year-over-year tax increases were offset by year-over-year decreases of \$5.1 million related to unremitted foreign earnings and \$1.2 million for other small tax expense items, along with, most significantly, a \$19.2 million decrease in the 2018 tax expense related to the net provisional tax benefit related to the Tax Reform Act. The net provisional tax benefit included tax benefits of \$72.0 million resulting from the revaluation of deferred tax assets and liabilities, which were partially offset by \$52.8 million of transition tax expense.

During 2018, there was a \$24.8 million net increase in valuation allowances. This increase was a result of a \$30.2 million increase to valuation allowances related to net operating losses and other deferred tax assets, as well as an increase of \$0.6 million in new valuation allowances. These increases were partially offset by a \$6.0 million decrease in valuation allowances due to currency translation.

The SEC staff issued Staff Accounting Bulletin No. 118 ("SAB 118") to address the application of GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Reform Act. SAB 118 also provides for a measurement period that should not extend beyond one year from the Tax Reform Act enactment date. As of October 31, 2018, our accounting for the Tax Reform Act was provisional. However, in accordance with SAB 118, we have recorded a reasonable estimate for the following items: a tax benefit related to the revaluation of deferred tax assets and liabilities of \$72.0 million; and a provisional tax expense as a result of the accrual for the transition tax liability of \$52.8 million. As a result, the net provisional tax benefit recorded in our consolidated financial statements for the year ended October 31, 2018 was \$19.2 million. Adjustments to the provisional estimates will be recorded and disclosed prospectively during the measurement period and may differ from these provisional amounts, due to, among other matters, additional analyses, changes in interpretations and assumptions we have made, additional regulatory guidance that may be issued, and actions we may take as a result of the Tax Reform Act.

We analyze potential income tax liabilities related to uncertain tax positions in the United States and international jurisdictions. The analysis of potential income tax liabilities results in estimates of income tax liabilities recognized for uncertain tax positions following the guidance of ASC 740, "Income Taxes." The estimation of potential tax liabilities related to uncertain tax positions involves significant judgment in evaluating the impact of uncertainties in the application of ASC 740 and complex tax laws. We periodically analyze both potential income tax liabilities and existing liabilities for uncertain tax positions resulting in both new reserves and adjustments to existing reserves in light of changing facts and circumstances. This includes the release of existing liabilities for uncertain tax positions based on the expiration of statutes of limitation. During 2018, recognition of uncertain tax positions increased primarily due to increases in unrecognized tax benefits related to prior years and the current year, offset by decreases related to lapse in statute of limitations; whereas in 2017, the uncertain tax positions decreased primarily due to audit and statute of limitations releases attributable to non-US jurisdictions.

The ultimate resolution of potential income tax liabilities may result in a payment that is materially different from our current estimates. If our estimates recognized under ASC 740 prove to be different than what is ultimately resolved, such resolution could have a material impact on our financial condition and results of operations. While predicting the final outcome or the timing of the resolution of any particular tax matter is subject to various risks and uncertainties, we believe that our tax accounts related to uncertain tax positions are appropriately stated.

Refer to Note 11 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for further information.

Equity Earnings of Unconsolidated Affiliates, net of Tax

We recorded \$3.0 million and \$2.0 million of equity earnings of unconsolidated affiliates, net of tax, for 2018 and 2017, respectively.

Net Income Attributable to Noncontrolling Interests

Net income attributable to noncontrolling interests represents the portion of earnings from the operations of our non-wholly owned, consolidated subsidiaries that belongs to the noncontrolling interests in those subsidiaries. Net income attributable to noncontrolling interests was \$20.1 million and \$16.5 million for 2018 and 2017, respectively. The increase in net income attributable to noncontrolling interests was due primarily to increased earnings of the Flexible Packaging JV.

Net Income Attributable to Greif, Inc.

Based on the factors noted above, net income attributable to Greif, Inc. increased \$90.8 million to \$209.4 million in 2018 from \$118.6 million in 2017.

Year 2017 Compared to Year 2016

Net Sales

Net sales were \$3,638.2 million for 2017 compared with \$3,323.6 million for 2016. The 9.5 percent increase in net sales was primarily due to strategic pricing decisions and increases in index prices in our Rigid Industrial Packaging & Services segment and an increase in volumes in our mills and corrugator facilities in our Paper Packaging & Services segment, partially offset by the impact of our 2016 divestitures in our Rigid Industrial Packaging & Services segment.

Gross Profit

Gross profit was \$714.7 million for 2017 compared with \$684.9 million for 2016. The respective reasons for the improvement or decline in gross profit for each segment are described below in the "Segment Review." Gross profit margin was 19.6 percent for 2017 compared to 20.6 percent for 2016.

Selling, General and Administrative Expenses

SG&A expenses increased 0.9 percent to \$380.4 million for 2017 from \$376.8 million for 2016. This increase was primarily due to increases in incentive compensation due to improved business performance and increases in professional fees partially offset by decreased non-income tax expense and the impact of foreign currency translation of \$2.9 million. SG&A expenses were 10.5 percent of net sales for 2017 compared with 11.3 percent of net sales for 2016.

Restructuring Charges

Restructuring charges were \$12.7 million for 2017 compared with \$26.9 million for 2016. Charges for both periods were primarily related to employee separation costs, relocation fees and professional fees incurred for services specifically associated with employee separation and relocation. Restructuring activities and associated costs during 2017 are anticipated to deliver annual run-rate savings of approximately \$9.9 million with payback periods ranging from one to three years among the plans. We anticipate completion of the current restructuring programs by early 2018. Refer to Note 6 to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information.

Impairment Charges

Goodwill impairment charges were \$13.0 million for 2017. These charges were related to the impairment of goodwill within the Rigid Industrial Packaging & Services segment. There were no goodwill impairment charges for 2016.

Non-cash asset impairment charges were \$7.8 million for 2017 compared with \$51.4 million for 2016. In 2017, these charges were primarily related to plant closures and impairments of goodwill allocated to assets held for sale. Refer to Note 9 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information.

Gain on Disposal of Properties, Plants and Equipment, net

The gain on disposal of properties, plants, and equipment, net was \$0.4 million and \$10.3 million for 2017 and 2016, respectively. See Note 4 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information.

Loss on Disposal of Businesses, net

The loss on disposal of businesses was \$1.7 million and \$14.5 million for 2017 and 2016, respectively. See Note 2 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information.

Operating Profit

Operating profit was \$299.5 million for 2017 compared with \$225.6 million for 2016. The \$73.9 million increase consisted of increases of \$46.2 million in the Rigid Industrial Packaging & Services segment, \$4.4 million in the Paper Packaging & Services segment, \$21.3 million in the Flexible Products & Services segment, and \$2.0 million in the Land Management segment. The primary factors that contributed to the \$73.9 million increase, when compared to 2016, were increased sales, lower non-cash asset impairment charges of \$30.6 million, lower restructuring charges of \$14.2 million, and lower losses on the sale of businesses of \$12.8 million, partially offset by lower gains on sales of property, plant, and equipment of \$9.9 million.

EBITDA

EBITDA was \$382.9 million and \$345.1 million for 2017 and 2016, respectively. The increase in EBITDA was primarily due to the same factors impacting operating profit described above. Depreciation, depletion and amortization expense was \$120.5 million for 2017 compared with \$127.7 million for 2016. The decrease in depreciation, depletion and amortization expense was primarily due to impact of 2016 divestitures.

Segment Review

Rigid Industrial Packaging & Services

Net sales increased 8.5 percent to \$2,522.7 million in 2017 from \$2,324.2 million in 2016. The \$198.5 million increase in net sales was primarily the result of an increase in selling prices due to strategic pricing and increases in index prices of raw materials partially offset by the impact of the 2016 divestitures in this segment.

Gross profit was \$502.2 million for 2017 compared with \$489.4 million for 2016. The \$12.8 million increase in gross profit was primarily due to the positive impact of strategic volume and pricing actions, partially offset by increases in raw material prices. Gross profit margin decreased to 19.9 percent from 21.1 percent in 2016.

Operating profit was \$190.1 million for 2017 compared with \$143.9 million for 2016. The \$46.2 million increase was primarily attributable to the same factors impacting gross profit, a decrease in non-cash asset impairment charges of \$22.8 million, a decrease in restructuring charges of \$7.8 million and a decrease in loss on sales of properties, plants and equipment and businesses, net of \$3.2 million.

EBITDA was \$241.9 million for 2017 compared with \$223.8 million for 2016. The \$18.1 million increase was due to the same factors that impacted the segment's operating profit, as described above. Depreciation, depletion and amortization expense was \$77.0 million for 2017 compared with \$84.6 million for 2016. The reduction in depreciation, depletion and amortization expense was primarily due to impact of 2016 divestitures.

Paper Packaging & Services

Net sales increased 16.6 percent to \$800.9 million for 2017 compared with \$687.1 million for 2016, primarily related to increased net volumes of 5.9 percent in our mills and corrugator facilities and a \$22.7 million increase in specialty product sales. Selling prices increased 12.0 percent, primarily due to an increase in published containerboard index prices during 2017.

Gross profit was \$150.9 million for 2017 compared with \$144.5 million for 2016. The increase in gross profit was primarily due to the same factors impacting net sales, as described above. Gross profit margin was 18.8 percent and 21.0 percent for 2017 and 2016, respectively. This decrease was due to an increase in input costs, primarily old corrugated container costs, during 2017 compared to 2016.

Operating profit was \$93.5 million for 2017 compared with \$89.1 million for 2016. The increase was primarily due to the selling price and volume increases as described above, partially offset by increased input costs and increased SG&A expenses.

EBITDA was \$115.3 million for 2017 compared with \$120.7 million for 2016. The decrease in EBITDA was primarily due to the same factors impacting net sales and gross profit, as described above. Depreciation, depletion and amortization expense was \$31.9 million and \$31.6 million for 2017 and 2016, respectively.

Flexible Products & Services

Net sales decreased 0.6 percent to \$286.4 million for 2017 compared with \$288.1 million for 2016. This decrease was primarily due to the impact of non-material divestitures in 2016 of \$6.5 million and the impact of foreign currency translation of \$6.5 million, offset by strategic pricing decisions.

Gross profit was \$51.1 million for 2017 compared with \$42.0 million for 2016. This increase was primarily attributable to reduced labor and fixed production costs and the impact of strategic volume and pricing decisions. Gross profit margin increased to 17.8 percent for 2017 from 14.6 percent for 2016.

Operating profit was \$5.8 million for 2017 compared with an operating loss of \$15.5 million for 2016. This improvement in operating profit was primarily due to the same factors impacting the segment's gross profit, as well as a decrease in non-cash asset impairment charges of \$6.3 million and a decrease in restructuring charges of \$5.1 million.

EBITDA was \$11.1 million for 2017 compared with negative \$11.3 million for 2016. This improvement was due to the same factors that impacted the segment's operating profit, as described above. Depreciation, depletion and amortization expense was \$7.0 million for 2017 compared with \$7.7 million for 2016.

Land Management

As of October 31, 2017, we estimated that there were 20,000 acres in the United States of special use property, which we expect will be available for sale in the next five to seven years.

Net sales were \$28.2 million and \$24.2 million for 2017 and 2016, respectively. The increase in net sales was primarily due to an increase in timber sales.

Operating profit increased to \$10.1 million for 2017 from \$8.1 million for 2016. This increase was due to the same factor that impacted the segment's net sales, as described above.

EBITDA was \$14.6 million and \$11.9 million for 2017 and 2016, respectively. This increase was due to the same factors that impacted the segment's operating profit. Depreciation, depletion and amortization expense was \$4.6 million for 2017 compared with \$3.8 million for 2016.

Other Income Statement Changes

Interest Expense, net

Interest expense, net was \$60.1 million and \$75.4 million for 2017 and 2016, respectively. This decrease was primarily due to the repayment of Senior Notes due February 2017 with funds borrowed at a lower interest rate under our 2017 Credit Agreement, along with lower year-over-year debt balances.

Other Expense, net

Other expense, net was \$12.0 million and \$9.0 million for 2017 and 2016, respectively.

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, non-cash pension settlement charges, restructuring charges, and (gains) losses on sales of businesses.

	Year ended October 31,	
	2017	2016
	Summary	
Non-U.S. % of Consolidated Net Sales	51.1%	51.5%
U.S. % of Consolidated Net Sales	48.9%	48.5%
	<u>100.0%</u>	<u>100.0%</u>
Non-U.S. % of Consolidated I.B.I.T.	42.6%	35.3%
U.S. % of Consolidated I.B.I.T.	57.4%	64.7%
	<u>100.0%</u>	<u>100.0%</u>
Non-U.S. % of Consolidated I.B.I.T. before Special Items	43.5%	50.0%
U.S. % of Consolidated I.B.I.T. before Special Items	56.5%	50.0%
	<u>100.0%</u>	<u>100.0%</u>
Non-U.S. I.B.I.T. Reconciliation		
	Year ended October 31,	
	2017	2016
Non-U.S. I.B.I.T.	\$ 85.2	\$ 49.9
Non-cash asset impairment charges	2.2	29.9
Goodwill impairment charges	13.0	—
Non-cash pension settlement charge	1.2	—
Restructuring charges	10.8	20.5
Loss on sale of businesses	1.7	16.6
Total Non-U.S. Special Items	<u>28.9</u>	<u>67.0</u>
Non-U.S. I.B.I.T. before Special Items	<u>\$ 114.1</u>	<u>\$ 116.9</u>
U.S. I.B.I.T. Reconciliation		
	Year ended October 31,	
	2017	2016
U.S. I.B.I.T.	\$ 115.1	\$ 91.3
Non-cash asset impairment charges	5.6	21.5
Timberland gains	25.9	—
Restructuring charges	1.9	6.4
(Gain) Loss on sale of businesses	—	(2.1)
Total U.S. Special Items	<u>33.4</u>	<u>25.8</u>
U.S. I.B.I.T. before Special Items	<u>\$ 148.5</u>	<u>\$ 117.1</u>

* Income Before Income Tax expense = I.B.I.T.

Income Tax Expense

We had operations in over 40 countries during 2017. Operations outside of the United States are subject to additional risks that may not exist, or be as significant, within the United States. Our global operations in these countries results in the need to address complex and varying tax systems on a constantly changing basis.

Preparation of our financial statements requires the use of estimates and assumptions that affect the reported amounts of our assets and liabilities and revenues and expenses as of the balance sheet date. The multitude of tax jurisdictions, with varying laws, creates a level of uncertainty, and significant judgment is required when addressing the complex tax systems. Our effective tax rate and the amount of taxes we pay are dependent upon various factors, including the following: the laws and regulations of the tax jurisdictions in which income is earned; the recognition of permanent book/tax basis differences realized through the non-deductible write-off of goodwill allocated to divestitures and impairment of other intangibles; the ability to realize deferred tax assets at certain international subsidiaries; negotiation and dispute resolution with taxing authorities in the U.S. and international jurisdictions; and changes in tax laws, regulations, administrative rulings and common law.

The provision for income taxes is computed using the asset and liability method, under which deferred tax assets and liabilities are recognized currently for the expected future tax consequences of temporary differences between the financial reporting and the tax bases of assets and liabilities. This method includes an estimate of the future realization of tax losses. Deferred tax assets and liabilities are measured using the currently enacted tax rates that apply to taxable income in effect for the years in which those tax assets are expected to be realized or settled.

In year 2017, tax expense was \$67.2 million on \$200.3 million of pretax income, as compared to the fiscal year 2016, where tax expense was \$66.5 million on \$141.2 million of pretax income. Tax expense in 2017 increased by \$13.8 million due to the mix of income and losses among various jurisdictions, including changes in losses and income from jurisdictions for which a valuation allowance has been provided, as well as the timing of recognition of the related tax expense under Accounting Standards Codification ("ASC") 740-270. There was also an increase in tax expense of \$7.0 million for unremitted foreign earnings under ASC 740-30 (formally APB23). However, these tax increases were largely offset by decreases in tax expense of \$10.4 million related to changes in the measurement of uncertain tax positions netted against releases resulting from audit settlements and expiration of the statute of limitations in several jurisdictions; withholding tax expense decreased by \$2.9 million; and other taxes decreased by \$6.8 million. The net difference in tax expense was an increase of \$0.7 million.

During 2017, the valuation allowance account increased by \$40.3 million, which consisted of the following: \$1.3 million of decreases due to currency translation; \$1.2 million of net increases in new valuation allowances; and \$40.4 million of net incremental increases against net operating losses and other net deferred tax assets.

During 2016, the valuation allowance account increased by \$2.6 million, which consisted of the following: \$0.8 million of increases due to currency translation; \$2.2 million of net increases in new valuation allowances; and \$0.4 million of net incremental decreases against net operating losses and other net deferred tax assets. The impact of the decrease in valuation allowances was not material to our 2016 effective tax rate.

We analyze potential income tax liabilities related to uncertain tax positions in the United States and international jurisdictions. The analysis of potential income tax liabilities results in estimates of income tax liabilities recognized for uncertain tax positions following the guidance of ASC 740, "Income Taxes." The estimation of potential tax liabilities related to uncertain tax positions involves significant judgment in evaluating the impact of uncertainties in the application of ASC 740 and other complex tax laws. We periodically analyze both potential income tax liabilities and existing liabilities for uncertain tax positions resulting in both new reserves and adjustments to existing reserves in light of changing facts and circumstances. This includes the release of existing liabilities for uncertain tax positions based on the expiration of statutes of limitation. During 2017, recognition of uncertain tax positions decreased primarily due to audit and statute of limitations releases attributable to non-US jurisdictions; whereas in 2016, the uncertain tax positions increased primarily due to new positions largely attributable to non-U.S. jurisdictions.

The ultimate resolution of potential income tax liabilities may result in a payment that is materially different from our current estimates. If our estimates recognized under ASC 740 prove to be different than what is ultimately resolved, such resolution could have a material impact on our financial condition and results of operations. While predicting the final outcome or the timing of the resolution of any particular tax matter is subject to various risks and uncertainties, we believe that our tax accounts related to uncertain tax positions are appropriately stated.

Prior to the first quarter of 2017, we asserted under ASC 740-30, formerly Accounting Principles Board opinion 23 ("APB 23"), that unremitted earnings of our subsidiaries directly or indirectly owned by Greif International Holding BV ("GIH") were permanently reinvested. As a result of our debt re-financing concluded in November 2016, we reassessed our unremitted earnings position in the first quarter of 2017. We concluded that the unremitted earnings of subsidiaries owned directly or indirectly by GIH may be used to fully fund the repayment of up to €187.0 million (\$203.9 million as of April 30, 2017) of third-party debt of GIH's non-U.S. parent company, Greif Luxembourg Holding Sarl. During 2017, €187.0 million (\$203.9 million as of April 30, 2017) of the debt was repaid, utilizing, in part, \$104.0 million of pre-2017 earnings distributed during 2017. As a result, deferred tax liabilities of \$2.0 million related to withholding taxes was recorded through the fourth quarter of 2017 (initially measured at \$3.6 million) with respect to the \$104.0 million of pre-2017 unremitted earnings, which represents the total tax liability less current year dividends and releases for all of the pre-2017 unremitted earnings expected to be remitted.

Beginning in 2017, deferred tax liabilities have been recorded on current year earnings not required to be immediately reinvested by the respective subsidiaries of our foreign holding companies (including holding companies such as GIH, Greif Luxembourg Holding Sarl, and Greif UK International Holding Ltd).

Other than the foregoing change in assertion with respect to current year earnings, we have not recognized U.S. deferred income taxes on a cumulative total of \$646.4 million of undistributed earnings from certain of our non-U.S. subsidiaries. Our intention is to reinvest these earnings indefinitely outside the U.S. or to repatriate the earnings only when it is tax-efficient to do so. Therefore, no U.S. tax provision has been accrued related to the repatriation of these earnings. Furthermore, given the uncertainty as to whether we will decide in the future to repatriate earnings and the wide variation in results depending on the various alternatives we could deploy should we decide to do so, it is difficult to make a reliable estimate as to the amount of any additional taxes which may be payable on such undistributed earnings.

Refer to Note 11 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for further information.

Equity Earnings of Unconsolidated Affiliates, net of Tax

We recorded \$2.0 million and \$0.8 million of equity earnings of unconsolidated affiliates, net of tax, for 2017 and 2016, respectively.

Net Income Attributable to Noncontrolling Interests

Net income attributable to noncontrolling interests represents the portion of earnings from the operations of our non-wholly owned, consolidated subsidiaries that belongs to the noncontrolling interests in those subsidiaries. Net income attributable to noncontrolling interests was \$16.5 million and \$0.6 million for 2017 and 2016, respectively. The increase in net income attributable to noncontrolling interests was due primarily to increased earnings of the Flexible Packaging JV.

Net Income Attributable to Greif, Inc.

Based on the factors noted above, net income attributable to Greif, Inc. increased \$43.7 million to \$118.6 million in 2017 from \$74.9 million in 2016.

OTHER COMPREHENSIVE INCOME 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, liabilities and operations of our international subsidiaries, are presented in the consolidated statements of changes in equity in accumulated other comprehensive loss. Other comprehensive loss resulting from foreign currency translation for 2018 was \$45.5 million. Other comprehensive income resulting from foreign currency translation for 2017 was \$37.6 million.

Minimum pension liability, net

Change in minimum pension liability, net of tax for 2018 and 2017 was \$16.3 million and \$14.2 million, respectively. The other comprehensive income in 2018, resulting from the change in minimum pension liability, net was primarily the result of an \$80.0 million contribution to our United States defined benefit plan which resulted in an \$11.0 million decrease to our minimum pension liability. The remainder of the change in minimum pension liability, net was primarily due to increases in discount rates offset by negative asset returns.

BALANCE SHEET CHANGES

Working capital changes

The \$9.7 million increase in accounts receivable to \$456.7 million as of October 31, 2018 from \$447.0 million as of October 31, 2017 was primarily due to increased net sales and timing of collections.

The \$10.0 million increase in inventories to \$289.5 million as of October 31, 2018 from \$279.5 million as of October 31, 2017 was primarily due to increased raw material prices.

The \$4.6 million increase in accounts payable to \$403.8 million as of October 31, 2018 from \$399.2 million as of October 31, 2017 was primarily due to increased raw material prices and the timing of payments.

Other balance sheet changes

The \$17.4 million decrease in other intangible assets to \$80.6 million as of October 31, 2018 from \$98.0 million as of October 31, 2017 was primarily due to amortization expense of \$15.2 million recognized during 2018.

The \$3.5 million increase in properties, plants and equipment, net to \$1,191.9 million as of October 31, 2018 from \$1,188.4 million as of October 31, 2017 was primarily due to increased capital expenditures, partially offset by depreciation.

The \$53.7 million decrease in long-term debt to \$884.1 million as of October 31, 2018 from \$937.8 million as of October 31, 2017 was attributable to repayments.

The \$43.5 million increase in foreign currency translation loss to \$292.8 million as of October 31, 2018 from a loss of \$249.3 million as of October 31, 2017 was primarily due to changes in several key foreign currencies compared with the U.S. dollar.

The \$9.8 million increase in noncontrolling interest to \$46.4 million as of October 31, 2018 from \$36.6 million as of October 31, 2017 was primarily due to increased earnings of consolidated joint ventures and foreign currency translation.

LIQUIDITY AND CAPITAL RESOURCES

Our primary sources of liquidity are operating cash flows and borrowings under our senior secured credit facility and the senior notes we have issued and, to a lesser extent, proceeds from our trade accounts receivable credit facility and proceeds from the sale of our non-United States accounts receivable. 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 facility, proceeds from our U.S. trade accounts receivable credit facility and proceeds from the sale of our non-United States accounts receivable 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 were 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 2018, 2017 and 2016, we invested \$139.1 million (excluding \$8.9 million for purchases of and investments in timber properties), \$100.1 million (excluding \$9.5 million for purchases of and investments in timber properties), and \$101.1 million (excluding \$7.1 million for purchases of and investments in timber properties), respectively, in capital expenditures.

We anticipate future capital expenditures, excluding the potential purchases of and investments in timber properties, ranging from \$130.0 million to \$150.0 million during the year ending October 31, 2019. We anticipate that these expenditures will replace and improve existing equipment and fund new facilities.

Sale of Non-United States Accounts Receivable

In 2012, Cooperage Receivables Finance B.V. (the “Main SPV”) and Greif Coordination Center BVBA, our indirect wholly owned subsidiary, entered into the Nieuw Amsterdam Receivables Purchase Agreement (the “European RPA”) with affiliates of a major international bank (the “Purchasing Bank Affiliates”). In April 2017, the Main SPV and our indirect wholly owned subsidiary amended and extended the term of the existing European RPA. Under the European RPA, as amended, the maximum amount of receivables that may be sold and outstanding under the European RPA at any time is €100 million (\$113.7 million as of October 31, 2018). Under the terms of the European RPA, we have the ability to loan excess cash back to the Purchasing Bank Affiliates in the form of a subordinated loan receivable.

Under the terms of the European RPA, we have agreed to sell trade receivables meeting certain eligibility requirements that our indirect wholly owned subsidiary purchases from other of our indirect wholly-owned subsidiaries under a factoring agreement. The structure of the transactions provide for a legal true sale, on a revolving basis, of the receivables transferred from our various subsidiaries to the respective banks and their affiliates. The purchaser funds 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 is settled upon collection of the receivables. At the balance sheet reporting dates, we remove from accounts receivable the amount of proceeds received from the initial purchase price since they meet the applicable criteria of ASC 860, “Transfers and Servicing,” and we continue to recognize the deferred purchase price in other current assets or other current liabilities, as appropriate. The receivables are sold on a non-recourse basis with the total funds in the servicing collection accounts pledged to the banks between settlement dates.

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In October 2007, Greif Singapore Pte. Ltd., our indirect wholly-owned subsidiary, 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 (\$10.8 million as of October 31, 2018). 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 the receivables.

Refer to Note 3 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information regarding these various RPAs.

Acquisitions and Divestitures

During 2018, we completed no divestitures and no acquisitions of businesses. We liquidated two non-strategic non-U.S. businesses in the Flexible Products & Services segment. The gain on disposal of businesses was \$0.8 million for the year ended October 31, 2018. Proceeds from divestitures that were completed in 2017 and collected during the year ended October 31, 2018 were \$0.5 million. Proceeds from divestitures that were completed in 2015 and collected during the year ended October 31, 2018 were \$0.9 million. We have \$2.9 million of notes receivable recorded from the sale of businesses, in remaining terms of up to six months.

Refer to Note 2 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for disclosures regarding our acquisitions and divestitures.

Borrowing Arrangements

Long-term debt is summarized as follows:

<i>(in millions)</i>	October 31, 2018	October 31, 2017
2017 Credit Agreement - Term Loan	\$ 277.5	\$ 288.8
Senior Notes due 2019	249.1	248.0
Senior Notes due 2021	226.5	230.9
Receivables Facility	150.0	150.0
2017 Credit Agreement - Revolving Credit Facility	3.8	35.0
Other debt	0.7	6.5
	<u>907.6</u>	<u>959.2</u>
Less current portion	18.8	15.0
Less deferred financing costs	4.7	6.4
Long-term debt, net	<u>\$ 884.1</u>	<u>\$ 937.8</u>

2017 Credit Agreement

Since November 2016, we and certain of our international subsidiaries have been borrowers under a senior secured credit agreement (the “2017 Credit Agreement”) with a syndicate of financial institutions. The 2017 Credit Agreement replaced in its entirety our prior \$1.0 billion senior secured credit agreement (“Prior Credit Agreement”). The total available borrowing under the 2017 Credit Agreement was \$783.3 million as of October 31, 2018, which has been reduced by \$12.9 million for outstanding letters of credit, all of which was then available without violating covenants.

The 2017 Credit Agreement provides for an \$800.0 million revolving multicurrency credit facility expiring November 3, 2021, and a \$300.0 million term loan, with quarterly principal installments that commenced on April 30, 2017, through maturity on November 3, 2021, both with an option to add an aggregate of \$550.0 million to the facilities with the agreement of the lenders. We used the proceeds of the term loan on February 1, 2017, to repay the principal of our \$300.0 million 6.75% Senior Notes that matured on that date. The revolving credit facility is available to fund ongoing working capital and capital expenditure needs, for general corporate purposes, and to finance acquisitions. Interest is based on either a Eurodollar rate or a base rate that resets periodically plus a calculated margin amount. On November 3, 2016, a total of approximately \$208.0 million was used to pay the obligations outstanding under the Prior Credit Agreement in full and certain costs and expenses incurred in connection with the 2017 Credit Agreement. The unamortized financing costs associated with the 2017 Credit Agreement totaled \$4.2 million as of October 31, 2018, and are recorded as a direct deduction from the long-term debt liability.

The 2017 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 net income plus depreciation, depletion, and amortization, interest expense (including capitalized interest), and income taxes, 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 ("adjusted EBITDA") to be greater than 4.00 to 1.00 (or 3.75 to 1.00, during any collateral release period). The interest coverage ratio generally requires that at the end of any fiscal quarter we will not permit the ratio of (a) adjusted EBITDA, to (b) the 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. As of October 31, 2018, we were in compliance with these covenants.

The terms of the 2017 Credit Agreement limit our ability to make "restricted payments", which include dividends and purchases, redemptions and acquisitions of our equity interests. The repayment of this facility is secured by a security interest in our personal property and personal property of certain of our United States subsidiaries, including equipment and inventory and certain intangible assets, as well as a pledge of the capital stock of substantially all of our United States subsidiaries and will be 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 Corporation, we may request the release of such collateral. The payment of outstanding principal under the 2017 Credit Agreement and accrued interest thereon may be accelerated and become immediately due and payable upon our default in payment or other performance obligations or failure to comply with the financial and other covenants in the 2017 Credit Agreement, subject to applicable notice requirements and cure periods as provided in the 2017 Credit Agreement.

As of October 31, 2018, \$281.3 million was outstanding under the 2017 Credit Agreement. The current portion of the 2017 Credit Agreement was \$18.8 million and the long-term portion was \$262.5 million. The weighted average interest rate on the 2017 Credit Agreement was 3.07% for the year ended October 31, 2018. The actual interest rate on the 2017 Credit Agreement was 3.37% as of October 31, 2018.

Refer to Note 8 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information regarding the Prior Credit Agreement and the 2017 Credit Agreement.

See "- Financing Commitment for Proposed Acquisition of Caraustar" for information concerning our financing commitment for our proposed acquisition of Caraustar and the impact of such financing on the 2017 Credit Agreement.

Senior Notes

On July 28, 2009, we issued \$250.0 million of 7.75% Senior Notes due August 1, 2019. Proceeds from the issuance of these Senior Notes were principally used for general corporate purposes, including the repayment of amounts outstanding under our revolving multicurrency credit facility under our then-existing credit agreement, without any permanent reduction of the commitments thereunder. These Senior Notes are general unsecured obligations of Greif, Inc. only, provide for semi-annual payments of interest at a fixed rate of 7.75% and do not require any principal payments prior to maturity on August 1, 2019. These Senior Notes are not guaranteed by any of our subsidiaries and thereby are effectively subordinated to all of our subsidiaries' existing and future indebtedness. The Indenture pursuant to which these Senior Notes were issued contains covenants, which, among other things, limit our ability to create liens on our assets to secure debt and to enter into sale and leaseback transactions. These covenants are subject to a number of limitations and exceptions as set forth in the Indenture. As of October 31, 2018, we were in compliance with these covenants. The financing costs associated with the Senior Notes due 2019 totaled \$0.4 million as of October 31, 2018, and are recorded as a direct deduction from the long-term liability. The \$249.1 million outstanding balance as of October 31, 2018 is reported in long-term debt in our consolidated balance sheets because we intend to refinance this obligation on a long-term basis using financing available under our 2017 Credit Agreement or entering into a new financing arrangement. In addition, we are planning to issue \$700.0 million of new senior unsecured notes in connection with our proposed acquisition of Caraustar, and, if issued, a portion of the proceeds from these new senior notes are to be used to redeem these Senior Notes. See "- Financing Commitment for Proposed Acquisition of Caraustar" for further information.

Our Luxembourg subsidiary has issued €200.0 million of 7.375% Senior Notes due July 15, 2021. These Senior Notes are fully and unconditionally guaranteed on a senior basis by Greif, Inc. A portion of the proceeds from the issuance of these Senior Notes was used to repay non-U.S. borrowings under our then outstanding senior secured credit facility, without any permanent reduction of the commitments thereunder, with the remaining proceeds available for general corporate purposes, including the financing of acquisitions. These Senior Notes are general unsecured obligations of the Luxembourg subsidiary and Greif, Inc. and provide for semi-annual payments of interest at a fixed rate of 7.375%, and do not require any principal payments prior to maturity on July 15, 2021. The Indenture pursuant to which these Senior Notes were issued contains covenants, which, among other matters, limit our ability to create liens on our assets to secure debt and to enter into sale and leaseback transactions. These covenants are subject to

a number of limitations and exceptions as set forth in the Indenture. As of October 31, 2018, we were in compliance with these covenants.

Refer to Note 8 and Note 9 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information regarding the Senior Notes discussed above.

Financing Commitment for Proposed Acquisition of Caraustar

We plan to issue long-term debt to finance our proposed acquisition of Caraustar. In connection with entering into the Merger Agreement described in Item 1(g) of this Form 10-K, we entered into a commitment letter (the "Commitment Letter") with a syndicate of financial institutions (the "Commitment Parties") pursuant to which, subject to the terms and conditions of the Commitment Letter, the Commitment Parties have committed to provide (a)(i) a new \$1,200.0 million senior secured term loan facility if certain backstopped amendments to the 2017 Credit Agreement are obtained, including to provide for the utilization of \$199.0 million of the revolving loan facility thereunder for part of the purchase price of the acquisition and certain other amendments as more fully set forth in the Commitment Letter or (ii) in the event the backstopped amendments to the 2017 Credit Agreement are not obtained, a new senior secured credit facility (collectively, the "Credit Facilities") and (b) a \$700.0 million senior unsecured bridge facility (the "Bridge Facility" and, together with the Credit Facilities, the "Facilities"), to be available in the event that our planned issuance of \$700.0 million of senior unsecured notes (the "New Senior Notes") has not been completed prior to closing of the proposed acquisition. The proceeds of the Facilities and the New Senior Notes are to be used to pay the purchase price of the acquisition of Caraustar, the redemption of our existing \$250.0 million of 7.75% Senior Notes due August 1, 2019, the payment of a make whole premium in connection with the redemption of these Senior Notes, and the payment of fees and expenses incurred in connection with the acquisition of Caraustar and the Facilities. The commitment to provide the Facilities is subject to the consummation of the acquisition and certain other customary conditions as more fully set forth in the Commitment Letter. We will pay customary fees and expenses in connection with obtaining the Facilities. We anticipate that the definitive agreements for the Facilities will contain, among other terms, affirmative covenants, negative covenants, financial covenants and events of default, in each case to be negotiated by the parties consistent with the Commitment Letter.

United States Trade Accounts Receivable Credit Facility

On September 28, 2016, certain of our domestic subsidiaries entered into a receivables financing facility (the "Receivables Facility") with Cooperatieve Rabobank U.A., New York Branch ("Rabobank"), as the agent, managing agent, administrator and committed investor, and The Bank of Tokyo-Mitsubishi UFJ Ltd. as a managing agent, an administrator and a committed investor, by executing and delivering the Second Amended and Restated Transfer and Administration agreement (the "Second Amended TAA"). The Second Amended TAA was renewed on September 26, 2018 to extend the facility through September 26, 2019. The maximum amount available to be borrowed under the Receivables Facility is \$150.0 million, subject to the amount of eligible receivables. The financing costs associated with the Receivables Facility are \$0.1 million as of October 31, 2018, and are recorded as a direct deduction from the long-term debt liability.

We can terminate the Receivables Facility at any time upon five days prior written notice. The 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 Receivables Facility. The Receivables Facility also contains certain covenants and events of default, which are materially similar to the 2017 Credit Agreement covenants. As of October 31, 2018, we were in compliance with these covenants. Proceeds of the Receivables Facility are available for working capital and general corporate purposes. As of October 31, 2018, the outstanding balance under the Receivables Facility was \$150.0 million. We intend to refinance this 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 Second Amended TAA.

Refer to Note 8 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for information regarding the Receivables Facility.

Other

In addition to the amounts borrowed under the 2017 Credit Agreement and proceeds from the Senior Notes and the Receivables Facility, as of October 31, 2018, we had outstanding other debt of \$0.7 million in long-term debt and \$7.3 million in short-term borrowings. There are no financial covenants associated with other debt.

As of October 31, 2018, annual maturities, including the current portion of long-term debt, were \$417.9 million in 2019, \$30.0 million in 2020, \$249.3 million in 2021, \$210.1 million in 2022, zero in 2023 and \$0.3 million thereafter.

As of October 31, 2018 and 2017, we had deferred financing fees and debt issuance costs of \$4.7 million and \$6.4 million, respectively. Refer to Note 8 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information regarding the deferred financing fees.

Financial Instruments

Interest Rate Derivatives

During the first quarter of 2017 we entered into a forward interest rate swap with a notional amount of \$300.0 million. As of February 1, 2017, we began to receive variable rate interest payments based upon one month U.S. dollar LIBOR and in return pay a fixed spread, depending on our leverage ratio, over the borrowing cost as defined in the 2017 Credit Agreement. This effectively converted the borrowing rate on \$300.0 million of debt under the 2017 Credit Agreement from a variable rate to a fixed rate of 1.194% plus an interest spread. This derivative is designated as a cash flow hedge for accounting purposes. Accordingly, any gain or loss on this derivative instrument is reported as a component of other comprehensive income and reclassified into earnings in the same line item associated with the forecasted transaction and in the same period during which the hedged transaction affects earnings.

Gains reclassified to earnings under these contracts were \$1.8 million for the year ended October 31, 2018, and losses reclassified to earnings under these contracts were \$0.3 million for the year ended October 31, 2017. A derivative gain of \$4.6 million, based upon interest rates at October 31, 2018, is expected to be reclassified from accumulated other comprehensive income (loss) to earnings in the next twelve months.

Refer to Note 18 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information regarding the gain or loss included in other comprehensive income. The assumptions used in measuring fair value of the interest rate derivative are considered level 2 inputs, which are based upon LIBOR and interest paid based upon a designated fixed rate over the life of the swap agreements.

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 revenues and expenses.

As of October 31, 2018, we had outstanding foreign currency forward contracts in the notional amount of \$194.4 million (\$80.1 million as of October 31, 2017). At October 31, 2018, these derivative instruments were designated and qualified as fair value hedges. Adjustments to fair value for fair value hedges are recognized in earnings, offsetting the impact of the hedged item. The assumptions used in measuring fair value of foreign exchange hedges are considered level 2 inputs, which were based on observable market pricing for similar instruments, principally foreign exchange futures contracts. Realized losses recorded in other expense, net under fair value contracts were \$9.2 million, \$1.8 million and \$2.7 million for the twelve months ended October 31, 2018, 2017 and 2016, respectively.

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 2.352%. 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 consolidated statements of income. See Note 9 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information regarding the cross currency swap.

Contractual Obligations

As of October 31, 2018, we had the following contractual obligations:

(in millions)	Total	Payments Due by Period			
		Less than 1 year	1-3 years	3-5 years	After 5 years
Long-term debt, net of deferred financing costs	\$ 884.1	\$ 397.2	\$ 276.5	\$ 210.1	\$ 0.3
Short-term borrowings	7.3	7.3	—	—	—
Operating and capital lease obligations	286.1	50.7	80.3	58.8	96.3
Liabilities held by special purpose entities	43.3	2.2	41.1	—	—
Contingent liabilities and environmental reserves	6.8	2.0	1.1	0.9	2.8
Current portion of long-term debt	18.8	18.8	—	—	—
Mandatorily redeemable noncontrolling interests	8.6	—	3.4	5.1	—
Total	\$ 1,255.0	\$ 478.2	\$ 402.4	\$ 274.9	\$ 99.4

Environmental reserves are estimates based on current remediation plans; actual liabilities could significantly differ from the reserve estimates.

We have no near-term pension funding obligations. Because the amount of such obligations in future years is not reasonably estimable, they have been excluded from the contractual obligations table. We intend to make pension contributions of \$15.6 million during 2019, which consists of \$10.6 million of employer contributions and \$5.0 million of benefits paid directly by the employer. These contributions are not contractually obligated, and therefore are not included in the table above.

Our unrecognized tax benefits under ASC 740, "Income Taxes" have been excluded from the contractual obligations table because of the inherent uncertainty and the inability to reasonably estimate the timing of cash outflows.

Stock Repurchase Program and Other Share Acquisitions

Our Board of Directors has authorized the purchase of Class A Common Stock or Class B Common Stock or any combination of the foregoing up to 4,703,487 shares as of October 31, 2018. Refer to Note 14 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information regarding this program and the repurchase of shares of Class A and Class B Common Stock.

Effects of Inflation

Inflation did not have a material impact on our operations during 2018, 2017 or 2016.

Critical Accounting Policies

A summary of our significant accounting policies is included in Note 1 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K. We believe that the consistent application of these policies enables us to provide readers of the consolidated financial statements with useful and reliable information about our results of operations and financial condition. The following are the accounting policies that we believe are most important to the portrayal of our results of operations and financial condition and require our most difficult, subjective or complex judgments.

Other items that could have a significant impact on the financial statements include the risks and uncertainties listed in Part I, Item 1A – Risk Factors. Actual results could differ materially using different estimates and assumptions, or if conditions are significantly different in the future.

Assets and Liabilities Held for Sale. Assets and liabilities held for sale represent land, buildings and land improvements less accumulated depreciation as well as any other assets or liabilities that are held for sale in conjunction with the sale of a business. We record assets and liabilities held for sale in accordance with ASC 360 "Property, Plant, and Equipment," at the lower of carrying value or fair value less cost to sell. Fair value is based on the estimated proceeds from the sale of the facility utilizing recent purchase offers, market comparables and/or data obtained from our commercial real estate broker. Our estimate as to fair value is regularly reviewed and subject to changes in the commercial real estate markets and our continuing evaluation as to the facility's acceptable sale price. See Note 4 and Note 9 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information regarding assets and liabilities held for sale.

Goodwill and Indefinite-Lived Intangibles Impairment Testing. We account for goodwill in accordance with ASC 350, “Intangibles – Goodwill and Other.” Under ASC 350, purchased goodwill is not amortized, but instead is tested for impairment either annually or when events and circumstances indicate an impairment may have occurred. Our goodwill impairment assessment is performed by reporting unit. A reporting unit is the operating segment, or a business one level below that operating segment (the component level) if discrete financial information is prepared and regularly reviewed by segment management. However, components are aggregated as a single reporting unit if they have similar economic characteristics. In conducting the annual impairment tests, the estimated fair value of each of our reporting units is compared to its carrying amount including goodwill. If the estimated fair value exceeds the carrying amount, then no impairment exists. If the carrying amount exceeds the estimated fair value an impairment is indicated.

The Rigid Industrial Packaging & Services segment consists of five operating segments: Rigid Industrial Packaging & Services – North America; Rigid Industrial Packaging & Services – Latin America; Rigid Industrial Packaging & Services – Europe, Middle East and Africa; Rigid Industrial Packaging & Services – Asia Pacific; and Rigid Industrial Packaging & Services – Tri-Sure. Each of these operating segments consists of multiple components that have discrete financial information available that is reviewed by segment management on a regular basis. We have evaluated these components and concluded that they are economically similar and should be aggregated into five separate reporting units. For the purpose of aggregating our components, we review the long-term performance of gross profit margin and operating profit margin. Additionally, we review qualitative factors such as common customers, similar products, similar manufacturing processes, sharing of resources, level of integration, and interdependency of processes across components. We place greater weight on the qualitative factors outlined in ASC 280 “Segment Reporting” and consider the guidance in ASC 350 in determining whether two or more components of an operating segment are economically similar and can be aggregated into a single reporting unit. However, our assessment of the aggregation includes both qualitative and quantitative factors and is based on the facts and circumstances specific to the components.

The estimated fair value of the reporting units utilized in the impairment test is based on a discounted cash flow analysis or income approach and market multiple approach. Under this method, the principal valuation focus is on the reporting unit’s cash-generating capabilities. The discount rates used for impairment testing are based on our weighted average cost of capital. The use of alternative estimates, peer groups or changes in the industry, or adjusting the discount rate, earnings before interest, taxes, depreciation, depletion and amortization multiples or price earnings ratios used could affect the estimated fair value of the assets and potentially result in impairment. Any identified impairment would result in an adjustment to our results of operations.

We performed our annual goodwill impairment test in the fourth quarter of 2018 as of August 1. In performing the test, we first evaluate qualitative factors, such as macroeconomic conditions and our overall financial performance to determine whether it is more likely than not that the fair value of a reporting unit is less than its carrying amount, including goodwill. We then evaluate how significant each of the identified factors could be to the fair value or carrying amount of a reporting unit and weigh these factors in totality in forming a conclusion of whether or not it is more likely than not that the fair value of a reporting unit is less than its carrying amount (the Step 0 Test). If necessary, the next step in the goodwill impairment test involves comparing the fair value of each of the reporting units to the carrying value of those reporting units. If the carrying value of a reporting unit exceeds the fair value of the reporting unit, an impairment loss would be recognized (not to exceed the carrying amount of goodwill). Our Rigid Industrial Packaging & Services - Latin America, Flexible Products & Services and Land Management reporting units have no goodwill and therefore no impairment test was required. For our Rigid Industrial Packaging & Services - North America; Rigid Industrial Packaging & Services - Europe, Middle East and Africa; Rigid Industrial Packaging & Services - Tri-Sure; and Paper Packaging & Services reporting units, a Step 0 approach was used and we determined it was not more likely than not that the fair value of the reporting unit was less than its carrying amount. As of August 1, 2018, the estimated fair value of each of these reporting units was deemed to substantially exceed the carrying amount of assets and liabilities assigned to each reporting unit.

For the Rigid Industrial Packaging & Services - Asia Pacific reporting unit we proceeded directly to the quantitative impairment testing. The fair value of the reporting unit exceeded the carrying value by 20%, so no impairment was deemed to exist. Discount rates, growth rates and cash flow projections are the assumptions that are most sensitive and susceptible to change as they require significant management judgment. In addition, certain future events and circumstances, including deterioration of market conditions, higher cost of capital, a decline in actual and expected consumption and demand, could result in changes to these assumptions and judgments. A revision of these assumptions could cause the fair value of the reporting unit to fall below its respective carrying value. As for all of our reporting units, if in future years, the reporting unit’s actual results are not consistent with our estimates and assumptions used to calculate fair value, we may be required to recognize material impairments to goodwill.

During the fourth quarter of 2017, we performed an assessment of our operating segments and determined that as a result of changes in the way the chief operating decision maker receives and reviews financial information, a realignment of our operating segment and reporting unit structure was necessary. As of our annual goodwill impairment testing date of August 1, 2017, our

reporting units of the Rigid Industrial Packaging & Services segment were realigned to consist of Rigid Industrial Packaging & Services – North America; Rigid Industrial Packaging & Services – Latin America; Rigid Industrial Packaging & Services – Europe, Middle East and Africa; Rigid Industrial Packaging & Services – Asia Pacific; and Rigid Industrial Packaging & Services – Tri-Sure. As a result of the realignment, goodwill was reassigned to each of the Rigid Industrial Packaging & Services reporting units using a relative fair value approach. There were no changes to the reporting units of the Paper Packaging & Services; Flexible Products & Services; and Land Management segments. No reporting units were aggregated for purposes of conducting the annual impairment test.

Due to the realignment of our reporting units in the fourth quarter of 2017, we recorded an impairment charge of \$13.0 million, which represented goodwill associated with the Rigid Industrial Packaging & Services segment as the carrying amount of the Rigid Industrial Packaging & Services – Latin America reporting unit exceeded its fair value. Our annual impairment test in 2016 resulted in no goodwill impairment charges. Refer to Note 5 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for further information.

The following table summarizes the carrying amount of goodwill by reporting unit for the ended October 31, 2018 and 2017:

<i>(in millions)</i>	Goodwill Balance	
	October 31, 2018	October 31, 2017
Rigid Industrial Packaging & Services		
North America	\$ 252.8	\$ 252.9
Europe, Middle East and Africa	297.1	304.6
Asia Pacific	88.8	89.4
Tri-Sure	77.8	79.0
Paper Packaging & Services	59.5	59.5
Total	\$ 776.0	\$ 785.4

*The Rigid Industrial Packaging & Services: Latin America, Flexible Products & Services, and Land Management reporting units have no goodwill balance at either reporting period.

We test for impairment of indefinite-lived intangible assets during the fourth quarter of each fiscal year as of August 1, or more frequently if certain indicators are present or changes in circumstances suggest that impairment may exist.

Long-lived Asset Impairment Testing. Long-lived assets are grouped together at the lowest level, generally at the plant level, for which identifiable cash flows are largely independent of cash flows of other groups of long-lived assets. As events warrant, we evaluate the recoverability of long-lived assets, other than goodwill and other intangible assets, by assessing whether the carrying value can be recovered over their remaining useful lives through the expected future undiscounted operating cash flows of the underlying asset groups. Impairment indicators include, but are not limited to, a significant decrease in the market price of a long-lived asset; a significant adverse change in the manner in which the asset is being used or in its physical condition; a significant adverse change in legal factors or the business climate that could affect the value of a long-lived asset; an accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of a long-lived asset; current period operating or cash flow losses combined with a history of operating or cash flow losses associated with the use of the asset; or a current expectation that it is more likely than not that a long-lived asset will be sold or otherwise disposed of significantly before the end of its previously estimated useful life. Future decisions to change our manufacturing processes, exit certain businesses, reduce excess capacity, temporarily idle facilities and close facilities could result in material impairment charges. Any impairment loss that may be required is determined by comparing the carrying value of the assets to their estimated fair value.

See Note 9 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for additional information regarding the fair value of our long-lived assets.

Income Taxes. Preparation of our financial statements requires the use of estimates and assumptions that affect the reported amounts of our assets and liabilities and revenues and expenses. The multitude of tax jurisdictions in which we operate requires significant judgment when applying the complex tax regulations to estimate our global tax position. Our effective tax rate and the amount of taxes we pay are dependent upon various factors including the following: the laws and regulations, and varying tax rates of the country tax jurisdictions in which income is earned; the recognition of permanent book/tax basis differences realized through acquisitions, divestitures and asset impairments; the ability to realize long term deferred tax assets at certain international subsidiaries; negotiation and dispute resolution with taxing authorities in the U.S. and non-U.S. jurisdictions arising from federal, state and local country tax audits; and changes in tax laws, regulations, administrative rulings and common law.

Refer to Note 11 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for further information.

Pension and Postretirement Benefits. Pension and postretirement assumptions are significant inputs to the actuarial models that measure pension and postretirement benefit obligations and related effects on operations. Two assumptions – discount rate and expected return on assets – are important elements of plan expense and asset/liability measurement. We evaluate these critical assumptions at least annually on a plan and country-specific basis. At least annually, we evaluate other assumptions involving demographic factors, such as retirement age, mortality and turnover, and update them to reflect our experience and expectations for the future. Actual results in any given year will often differ from actuarial assumptions because of economic and other factors.

Accumulated and projected benefit obligations are measured as the present value of future cash payments. We discount those cash payments using the weighted average of market-observed yields for high quality fixed income securities with maturities that correspond to the payment of benefits. Lower discount rates increase present values and subsequent-year pension expense; higher discount rates decrease present values and subsequent-year pension expense.

Our weighted discount rates for consolidated pension plans at October 31, 2018, 2017 and 2016 were 3.48%, 3.01% and 3.08%, respectively, reflecting market interest rates.

To develop the expected long-term rate of return on assets assumption, we use a generally consistent approach worldwide. The approach considers various sources, primarily inputs from a range of advisors, inflation, bond yields, historical returns and future expectations for returns for each asset class, as well as the target asset allocation of each pension portfolio. This rate is gross of any investment or administrative expenses. Assets in our principal pension plans lost approximately 1.6% in 2018. Based on our analysis of future expectations of asset performance, past return results, and our current and expected asset allocations, we have assumed a 4.12% long-term expected return on those assets for cost recognition in 2019. This is a reduction from the 4.53%, 5.39% and 5.51% long-term expected return we had assumed in 2018, 2017 and 2016, respectively.

Changes in key assumptions for our consolidated pension and postretirement plans would have the following effects.

- Discount rate – A 25 basis point increase in discount rate would decrease pension and postretirement cost in the following year by \$1.5 million and would decrease the pension and postretirement benefit obligation at year-end by about \$23.3 million.
- Expected return on assets – A 50 basis point decrease in the expected return on assets would increase pension and postretirement cost in the following year by \$3.0 million.

Further discussion of our pension and postretirement benefit plans and related assumptions is contained in Note 12 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K.

Revenue Recognition. We recognize revenue when title passes to customers or services have been rendered, with appropriate provision for returns and allowances. Revenue is recognized in accordance with ASC 605, “Revenue Recognition.”

Timberland disposals, timber and special use property revenues are recognized when closings have occurred, required down payments have been received, title and possession have been transferred to the buyer, and all other criteria for sale and profit recognition have been satisfied.

We report the sale of timberland property in “timberland gains,” the sale of HBU and surplus property in “gain on disposal of properties, plants and equipment, net” and the sale of timber and development property under “net sales” and “cost of products sold” in our consolidated statements of income. All HBU and development property, together with surplus property, is used to productively grow and sell timber until the property is sold.

Variable Interest Entities. We evaluate whether an entity is a variable interest entity (“VIE”) and determine if the primary beneficiary status is appropriate on a quarterly basis. We consolidate VIE’s for which we are the primary beneficiary. If we are not the primary beneficiary and an ownership interest is held, the VIE is accounted for under the equity method of accounting. When assessing the determination of the primary beneficiary, we consider 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.

Flexible Packaging Joint Venture

In 2010, we formed a joint venture (referred to herein as the “Flexible Packaging JV”) 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 (“GRP”). The Flexible Packaging JV owns the operations in the Flexible Products & Services segment. The Flexible Packaging JV has been consolidated into our operations as of its formation date of September 29, 2010.

All entities contributed to the Flexible Packaging JV were existing businesses acquired by us and were reorganized under Greif Flexibles Asset Holding B.V. and Greif Flexibles Trading Holding B.V. (“Asset Co.” and “Trading Co.”), respectively. We have 51 percent ownership in Trading Co. and 49 percent ownership in Asset Co. and Global Textile. However, we and GRP have equal economic interests in the Flexible Packaging JV, notwithstanding the actual ownership interests in the various legal entities. All investments, loans and capital contributions are to be shared equally by us and GRP and each partner has committed to contribute capital of up to \$150.0 million and obtain third party financing for up to \$150.0 million as required.

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 from us. We are the primary beneficiary because we have (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 or the right to receive benefits from the VIE that could potentially be significant to the VIE.

Recent Accounting Standards

See Note 1 of the Notes to Consolidated Financial Statements included in Item 8 of this Form 10-K for a detailed description of recently issued and newly adopted accounting standards.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

We are subject to interest rate risk related to our financial instruments that include borrowings under the 2017 Credit Agreement, proceeds from our Senior Notes and Receivables Facility, and cross currency and interest rate swap agreements. We do not enter into financial instruments for trading or speculative purposes. The interest rate swap agreements have been entered into to manage our exposure to variability in interest rates.

We have an interest rate swap agreement with an aggregate notional amount of \$300.0 million as of October 31, 2018. The interest rate swap agreement is used to manage our fixed and floating rate debt mix. Under certain of these agreements, we receive interest monthly from the counterparties equal to LIBOR and pay interest at a fixed rate over the life of the contracts. A gain on interest rate swap contracts was recorded in the amount of \$1.8 million for the year ended October 31, 2018 and a loss on interest rate swap contracts was recorded in the amount of \$0.3 million for the year ended October 31, 2017.

We have 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 2.352%. 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 consolidated statements of income. A gain on the cross currency swap agreement was recorded in interest expense for the amount of \$1.6 million for the year ended October 31, 2018.

The tables below provide information about our derivative financial instruments and other financial instruments that are sensitive to changes in interest rates. For our 2017 Credit Agreement, Senior Notes and Receivables Facility, the tables present scheduled amortizations of principal and the weighted average interest rate by contractual maturity dates as of October 31, 2018 and 2017.

The fair values of our 2017 Credit Agreement, Senior Notes and Receivables Facility are based on rates available to us for debt of the same remaining maturity as of October 31, 2018 and 2017.

Financial Instruments

As of October 31, 2018 (Dollars in millions)

	Expected Maturity Date						Total	Fair Value
	2019	2020	2021	2022	2023	After 2023		
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.

Financial Instruments

As of October 31, 2017 (Dollars in millions)

	Expected Maturity Date						Total	Fair Value
	2018	2019	2020	2021	2022	After 2022		
2017 Credit Agreement:								
Scheduled amortizations	\$ 15	\$ 15	\$ 30	\$ 23	\$ —	\$ —	\$ 83	\$ 83
Scheduled maturity	—	—	—	—	\$ 241	—	\$ 241	\$ 241
Average interest rate ⁽¹⁾	2.70%	2.70%	2.70%	2.70%	2.70%	—	2.70%	
Senior Notes due 2019:								
Scheduled maturity	—	\$ 250	—	—	—	—	\$ 250	\$ 272
Average interest rate	7.75%	7.75%	—	—	—	—	7.75%	
Senior Notes due 2021:								
Scheduled maturity	—	—	—	\$ 232	—	—	\$ 232	\$ 281
Average interest rate	7.38%	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, 2017. The rates presented are not intended to project our expectations for the future.

Currency Risk

As a result of our international operations, our operating results are subject to fluctuations in currency exchange rates. The geographic presence of our operations mitigates this exposure to some degree. Additionally, our transaction exposure is somewhat limited because we produce and sell a majority of our products in local currency within most countries in which we operate.

As of October 31, 2018, we had outstanding foreign currency forward contracts in the notional amount of \$194.4 million (\$80.1 million as of October 31, 2017). The purpose of these contracts is to hedge our exposure to foreign currency transactions and short-term intercompany loan balances in our international businesses. The fair value of these contracts resulted in realized losses recorded in other expense, net of \$9.2 million, \$1.8 million and \$2.7 million for the years ended October 31, 2018, 2017 and 2016, respectively.

A sensitivity analysis (with respect only to these instruments) to changes in the foreign currencies hedged indicates that if the U.S. dollar strengthened by 10 percent, the fair value of these instruments would decrease by \$4.2 million to a net liability of \$2.4 million. Conversely, if the U.S. dollar weakened by 10 percent, the fair value of these instruments would increase by \$4.2 million to a net asset of \$6.0 million.

Commodity Price Risk

We purchase commodities such as steel, resin, containerboard, pulpwood and energy. We do not currently engage in material hedging of commodities, although in the past we have sometimes engaged in hedges in natural gas, because there has historically been a high correlation between the commodity cost and the ultimate selling price of our products. There were no commodity hedging contracts outstanding as of October 31, 2018 and 2017.

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**GREIF, INC. AND SUBSIDIARY COMPANIES****CONSOLIDATED STATEMENTS OF INCOME**

Year Ended October 31, (in millions, except per share amounts)	2018	2017	2016
Net sales	\$ 3,873.8	\$ 3,638.2	\$ 3,323.6
Costs of products sold	3,084.9	2,923.5	2,638.7
Gross profit	788.9	714.7	684.9
Selling, general and administrative expenses	397.9	380.4	376.8
Restructuring charges	18.6	12.7	26.9
Non-cash asset impairment charges	8.3	7.8	51.4
Goodwill impairment charges	—	13.0	—
Gain on disposal of properties, plants and equipment, net	(5.6)	(0.4)	(10.3)
(Gain) loss on disposal of businesses, net	(0.8)	1.7	14.5
Operating profit	370.5	299.5	225.6
Interest expense, net	51.0	60.1	75.4
Pension settlement charge	1.3	27.1	—
Other expense, net	18.4	12.0	9.0
Income before income tax expense and equity earnings of unconsolidated affiliates, net	299.8	200.3	141.2
Income tax expense	73.3	67.2	66.5
Equity earnings of unconsolidated affiliates, net of tax	(3.0)	(2.0)	(0.8)
Net income	229.5	135.1	75.5
Net income attributable to noncontrolling interests	(20.1)	(16.5)	(0.6)
Net income attributable to Greif, Inc.	\$ 209.4	\$ 118.6	\$ 74.9
Basic earnings per share attributable to Greif, Inc.:			
Class A Common Stock	\$ 3.56	\$ 2.02	\$ 1.28
Class B Common Stock	\$ 5.33	\$ 3.02	\$ 1.90
Diluted earnings per share attributed to Greif, Inc.:			
Class A Common Stock	\$ 3.55	\$ 2.02	\$ 1.28
Class B Common Stock	\$ 5.33	\$ 3.02	\$ 1.90

Refer to the accompanying Notes to Consolidated Financial Statements.

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

Year Ended October 31, (in millions)	2018	2017	2016
Net income	\$ 229.5	\$ 135.1	\$ 75.5
Other comprehensive income (loss), net of tax:			
Foreign currency translation	(45.5)	37.6	(17.6)
Derivative financial instruments, net of tax expense of \$3.3 million, tax expense of \$3.1 million and tax benefit of \$0.0 million, respectively	7.7	5.1	—
Minimum pension liabilities net of tax expense of \$4.1 million, tax expense of \$16.5 million and tax benefit of \$4.7 million, respectively	16.3	14.2	(7.4)
Other comprehensive income (loss), net of tax	(21.5)	56.9	(25.0)
Comprehensive income	208.0	192.0	50.5
Comprehensive income (loss) attributable to noncontrolling interests	18.1	33.2	(3.4)
Comprehensive income attributable to Greif, Inc.	\$ 189.9	\$ 158.8	\$ 53.9

Refer to the accompanying Notes to Consolidated Financial Statements.

GREIF, INC. AND SUBSIDIARY COMPANIES

CONSOLIDATED BALANCE SHEETS

<i>(in millions)</i>	October 31, 2018	October 31, 2017
ASSETS		
Current assets		
Cash and cash equivalents	\$ 94.2	\$ 142.3
Trade accounts receivable, less allowance of \$4.2 in 2018 and \$8.9 in 2017	456.7	447.0
Inventories:		
Raw materials	203.9	192.1
Work-in-process	10.0	11.5
Finished goods	75.6	75.9
Assets held for sale	4.4	2.2
Prepaid expenses	39.8	35.3
Other current assets	92.1	88.2
	<u>976.7</u>	<u>994.5</u>
Long-term assets		
Goodwill	776.0	785.4
Other intangible assets, net of amortization	80.6	98.0
Deferred tax assets	7.9	10.5
Assets held by special purpose entities	50.9	50.9
Pension assets	10.4	10.3
Other long-term assets	100.4	94.3
	<u>1,026.2</u>	<u>1,049.4</u>
Properties, plants and equipment		
Timber properties, net of depletion	274.2	276.2
Land	96.4	99.5
Buildings	431.4	428.3
Machinery and equipment	1,554.9	1,540.2
Capital projects in progress	117.2	80.2
	<u>2,474.1</u>	<u>2,424.4</u>
Accumulated depreciation	(1,282.2)	(1,236.0)
	<u>1,191.9</u>	<u>1,188.4</u>
Total assets	<u>\$ 3,194.8</u>	<u>\$ 3,232.3</u>

Refer to the accompanying Notes to Consolidated Financial Statements.

GREIF, INC. AND SUBSIDIARY COMPANIES

CONSOLIDATED BALANCE SHEETS

<i>(in millions)</i>	October 31, 2018	October 31, 2017
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current liabilities		
Accounts payable	\$ 403.8	\$ 399.2
Accrued payroll and employee benefits	114.4	111.8
Restructuring reserves	4.4	5.2
Current portion of long-term debt	18.8	15.0
Short-term borrowings	7.3	14.5
Other current liabilities	121.5	142.2
	670.2	687.9
Long-term liabilities		
Long-term debt	884.1	937.8
Deferred tax liabilities	179.8	217.8
Pension liabilities	78.0	159.5
Postretirement benefit obligations	10.7	12.6
Liabilities held by special purpose entities	43.3	43.3
Contingent liabilities and environmental reserves	6.8	7.1
Mandatorily redeemable noncontrolling interests	8.6	9.2
Long-term income tax payable	46.1	—
Other long-term liabilities	77.5	78.1
	1,334.9	1,465.4
Commitments and Contingencies (Note 13)		
Redeemable Noncontrolling Interests (Note 20)	35.5	31.5
Equity		
Common stock, without par value	150.5	144.2
Treasury stock, at cost	(135.4)	(135.6)
Retained earnings	1,469.8	1,360.5
Accumulated other comprehensive income (loss), net of tax:		
Foreign currency translation	(292.8)	(249.3)
Derivative financial instruments	13.4	5.1
Minimum pension liabilities	(97.7)	(114.0)
Total Greif, Inc. shareholders' equity	1,107.8	1,010.9
Noncontrolling interests	46.4	36.6
Total shareholders' equity	1,154.2	1,047.5
Total liabilities and shareholders' equity	\$ 3,194.8	\$ 3,232.3

Refer to the accompanying Notes to Consolidated Financial Statements.

GREIF, INC. AND SUBSIDIARY COMPANIES
CONSOLIDATED STATEMENTS OF CASH FLOWS

Year Ended October 31, (in millions)	2018	2017	2016
Cash flows from operating activities:			
Net income	\$ 229.5	\$ 135.1	\$ 75.5
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation, depletion and amortization	126.9	120.5	127.7
Non-cash asset impairment charges	8.3	20.8	51.4
Pension settlement charge	1.3	27.1	—
Gain on disposals of properties, plants and equipment, net	(5.6)	(0.4)	(10.3)
(Gain) loss on disposals of businesses, net	(0.8)	1.7	14.5
Unrealized foreign exchange (gain) loss	(0.7)	4.6	4.1
Deferred income tax (benefit) expense	(44.8)	2.3	1.5
Transition tax expense	52.8	—	—
Other, net	(2.8)	1.2	—
Increase (decrease) in cash from changes in certain assets and liabilities:			
Trade accounts receivable	(34.0)	(47.3)	(18.6)
Inventories	(24.8)	(7.0)	3.4
Deferred purchase price on sold receivables	2.1	5.1	5.2
Accounts payable	24.3	20.5	39.4
Restructuring reserves	(0.8)	(5.3)	(10.7)
Pension and postretirement benefit liabilities	(66.8)	(1.7)	(8.9)
Other, net	(11.1)	27.8	26.8
Net cash provided by operating activities	253.0	305.0	301.0
Cash flows from investing activities:			
Acquisitions of companies, net of cash acquired	—	—	(0.4)
Collection of subordinated note receivable	—	—	44.2
Purchases of properties, plants and equipment	(140.2)	(96.8)	(100.1)
Purchases of and investments in timber properties	(8.9)	(9.5)	(7.1)
Purchases of properties, plants and equipment with insurance proceeds	—	—	(4.4)
Proceeds from the sale of properties, plants, equipment and other assets	12.5	9.6	12.3
Proceeds from the sale of businesses	1.4	5.9	23.8
Proceeds on insurance recoveries	—	0.4	6.6
Net cash used in investing activities	(135.2)	(90.4)	(25.1)
Cash flows from financing activities:			
Proceeds from issuance of long-term debt	1,020.7	1,446.0	1,102.3
Payments on long-term debt	(1,065.4)	(1,627.9)	(1,119.2)
Proceeds from (payments on) short-term borrowings, net	(11.0)	(36.4)	4.7
Proceeds from trade accounts receivable credit facility	2.8	203.6	283.5
Payments on trade accounts receivable credit facility	(2.8)	(53.6)	(431.1)
Long-term debt and credit facility financing fees paid	—	(4.5)	—
Dividends paid to Greif, Inc. shareholders	(100.0)	(98.6)	(98.7)
Dividends paid to noncontrolling interests	(4.6)	(4.2)	(4.9)
Proceeds from the sale of membership units of a consolidated subsidiary	—	—	0.3
Acquisitions of treasury stock	—	—	(5.2)
Purchases of redeemable noncontrolling interest	—	—	(6.0)
Cash contribution from noncontrolling interest holder	2.0	—	1.5
Net cash used in financing activities	(158.3)	(175.6)	(272.8)
Effects of exchange rates on cash	(7.6)	(0.4)	(5.6)
Net increase (decrease) in cash and cash equivalents	(48.1)	38.6	(2.5)
Cash and cash equivalents at beginning of year	142.3	103.7	106.2
Cash and cash equivalents at end of year	\$ 94.2	\$ 142.3	\$ 103.7

Year Ended October 31, (in millions)	2018	2017	2016
Supplemental information:			
Non-cash transactions:			
Capital expenditures included in accounts payable	\$ 11.4	\$ 12.5	\$ 9.2
Schedule of interest and income taxes paid:			
Cash payments for interest expense	\$ 58.3	\$ 76.2	\$ 74.8
Cash payments for taxes	\$ 65.2	\$ 53.4	\$ 51.8

Refer to the accompanying Notes to Consolidated Financial Statements.

GREIF, INC. AND SUBSIDIARY COMPANIES
CONSOLIDATED STATEMENTS OF CHANGES IN SHAREHOLDERS' EQUITY

(Amounts in millions, except shares amounts in thousands and per share amounts)

	Capital Stock		Treasury Stock		Retained Earnings	Accumulated Other Comprehensive Income (Loss)	Greif, Inc. Equity	Noncontrolling interests	Total Equity
	Shares	Amount	Shares	Amount					
As of October 31, 2015	47,814	\$ 139.1	29,028	\$ (130.6)	\$ 1,384.5	\$ (377.4)	\$ 1,015.6	\$ 44.3	\$ 1,059.9
Net income					74.9		74.9	0.6	75.5
Other comprehensive income (loss):									
– Foreign currency translation						(13.6)	(13.6)	(4.0)	(17.6)
– Minimum pension liability adjustment, net of income tax benefit of \$4.7 million						(7.4)	(7.4)		(7.4)
Comprehensive income							53.9		50.5
Out of period mark to redemption value of redeemable noncontrolling interest					(19.8)		(19.8)		(19.8)
Current period mark to redemption value of redeemable noncontrolling interest					(2.1)		(2.1)		(2.1)
Reclassification of redeemable noncontrolling interests					1.2		1.2	(22.8)	(21.6)
Net loss allocated to redeemable noncontrolling interests								(4.8)	(4.8)
Other								(0.4)	(0.4)
Dividends paid to Greif, Inc., Shareholders (\$1.68 per Class A share and \$2.51 per Class B share)					(98.7)		(98.7)		(98.7)
Contributions from noncontrolling interest								1.5	1.5
Dividends paid to noncontrolling interest								(3.9)	(3.9)
Treasury shares acquired	(110)		110	(5.2)			(5.2)		(5.2)
Restricted stock executives and directors	47	1.3	(47)	0.1			1.4		1.4
Long-term incentive shares issued	41	1.0	(41)	0.1			1.1		1.1
As of October 31, 2016	47,792	\$ 141.4	29,050	\$ (135.6)	\$ 1,340.0	\$ (398.4)	\$ 947.4	\$ 10.5	\$ 957.9
Net income					118.6		118.6	16.5	135.1
Other comprehensive income (loss):									
– Foreign currency translation						20.9	20.9	16.7	37.6
– Derivative financial instruments, net of income tax expense of \$3.1 million						5.1	5.1		5.1
– Minimum pension liability adjustment, net of income tax expense of \$16.5 million						14.2	14.2		14.2
Comprehensive income							158.8		192.0
Current period mark to redemption value of redeemable noncontrolling interest					0.5		0.5		0.5
Net income allocated to redeemable noncontrolling interests								(1.4)	(1.4)
Deconsolidation of noncontrolling interest								(2.6)	(2.6)
Dividends paid to Greif, Inc., Shareholders (\$1.68 per Class A share and \$2.51 per Class B share)					(98.6)		(98.6)		(98.6)
Dividends paid to noncontrolling interest								(3.1)	(3.1)
Treasury shares acquired	(2)		2	0.1			0.1		0.1
Restricted stock executives and directors	24	1.3	(24)	—			1.3		1.3
Long-term incentive shares issued	29	1.5	(29)	(0.1)			1.4		1.4
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					209.4		209.4	20.1	229.5
Other comprehensive income (loss):									
– Foreign currency translation						(43.5)	(43.5)	(2.0)	(45.5)
– Derivative financial instruments, net of income tax expense of \$3.3 million					(0.6)	8.3	7.7		7.7
– Minimum pension liability adjustment, net of income tax expense of \$4.1 million						16.3	16.3		16.3
Comprehensive income							189.9		208.0
Current period mark to redemption value of redeemable noncontrolling interest					0.5		0.5		0.5
Net income allocated to redeemable noncontrolling interests								(3.7)	(3.7)
Dividends paid to Greif, Inc., Shareholders (\$1.70 per Class A share and \$2.54 per Class B share)					(100.0)		(100.0)		(100.0)
Dividends paid to noncontrolling interest								(4.6)	(4.6)

Restricted stock executives and 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 October 31, 2018	47,949	\$ 150.5	28,893	\$ (135.4)	\$ 1,469.8	\$ (377.1)	\$ 1,107.8	\$ 46.4	\$ 1,154.2

Refer to the accompanying Notes to Consolidated Financial Statements.

GREIF, INC. AND SUBSIDIARY COMPANIES

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

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

The Business

Greif, Inc. and its subsidiaries (collectively, “Greif,” “our,” or the “Company”), principally manufacture 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 provides services, such as container life cycle management, filling, logistics, warehousing and other packaging services. The Company produces containerboard and corrugated products for niche markets in North America and is also a leading global producer of flexible intermediate bulk containers. The Company has operations in over 40 countries. In addition, the Company owns timber properties in the southeastern United States, which are actively harvested and regenerated.

Due to the variety of its products, the Company has many customers buying different products and due to the scope of the Company’s sales, no one customer is considered principal in the total operations of the Company.

Because the Company supplies a cross section of industries, such as chemicals, paints and pigments, food and beverage, petroleum, industrial coatings, agricultural, pharmaceutical, mineral, packaging, automotive and building products, and must make spot deliveries on a day-to-day basis as its products are required by its customers. The Company does not operate on a backlog to any significant extent and maintains only limited levels of finished goods. Many customers place their orders weekly for delivery during the same week.

The Company’s raw materials are principally steel, resin, containerboard, old corrugated containers, pulpwood and used industrial packaging for reconditioning.

There were approximately 13,000 employees of the Company as of October 31, 2018.

Principles of Consolidation and Basis of Presentation

The consolidated financial statements include the accounts of Greif, Inc., all wholly-owned and majority-owned subsidiaries, joint ventures controlled by the Company or for which the Company is the primary beneficiary, including the joint venture relating to the Flexible Products & Services segment, and equity earnings of unconsolidated affiliates. All intercompany transactions and balances have been eliminated in consolidation. Investments in unconsolidated affiliates are accounted for using the equity method based on the Company’s ownership interest in the unconsolidated affiliate.

The Company’s consolidated financial statements are presented in accordance with accounting principles generally accepted in the United States (“GAAP”). Certain prior year amounts have been reclassified to conform to the current year presentation.

The Company’s fiscal year begins on November 1 and ends on October 31 of the following year. Any references to the year 2018, 2017 or 2016, or to any quarter of those years, relates to the fiscal year ended in that year.

Argentina Currency

The Company’s results with respect to its Argentinian subsidiary business have been reported under highly inflationary accounting beginning August 1, 2018. As of October 31, 2018, the Company’s Argentina subsidiary represented less than 2% of the Company’s consolidated net revenues and less than 1% of its consolidated total assets.

Use of Estimates

The preparation of consolidated financial statements in conformity with GAAP requires management to make certain estimates, judgments and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. The most significant estimates are related to the expected useful lives assigned to properties, plants and equipment, goodwill and other intangible assets, estimates of fair value, environmental liabilities, pension and postretirement benefits, including plan assets, income taxes, net assets held for sale and contingencies. Actual amounts could differ from those estimates.

Cash and Cash Equivalents

The Company considers highly liquid investments with an original maturity of three months or less to be cash equivalents. The carrying value of cash equivalents approximates fair value.

Allowance for Doubtful Accounts

Trade receivables represent amounts owed to the Company through its operating activities and are presented net of allowance for doubtful accounts. The allowance for doubtful accounts totaled \$4.2 million and \$8.9 million as of October 31, 2018 and 2017, respectively. The Company evaluates the collectability of its accounts receivable based on a combination of factors. In circumstances where the Company is aware of a specific customer's inability to meet its financial obligations to the Company, the Company records a specific allowance for bad debts against amounts due to reduce the net recognized receivable to the amount the Company reasonably believes will be collected. In addition, the Company recognizes allowances for bad debts based on the length of time receivables are past due with allowance percentages, based on its historical experiences, applied on a graduated scale relative to the age of the receivable amounts. If circumstances such as higher than expected bad debt experience or an unexpected material adverse change in a major customer's ability to meet its financial obligations to the Company were to occur, the recoverability of amounts due to the Company could change by a material amount. Amounts deemed uncollectible are written-off against an established allowance for doubtful accounts.

Concentration of Credit Risk and Major Customers

The Company maintains cash depository accounts with banks throughout the world and invests in high quality short-term liquid instruments. Such investments are made only in instruments issued by high quality institutions. These investments mature within three months and the Company has not incurred any related losses for the years ended October 31, 2018, 2017, and 2016.

Trade receivables can be potentially exposed to a concentration of credit risk with customers or in particular industries. Such credit risk is considered by management to be limited due to the Company's many customers, none of which are considered principal in the total operations of the Company, and its geographic scope of operations in a variety of industries throughout the world. The Company does not have an individual customer that exceeds 10 percent of total revenue. In addition, the Company performs ongoing credit evaluations of its customers' financial conditions and maintains reserves for credit losses. Such losses historically have been within management's expectations.

Inventory

The Company primarily uses the FIFO method of inventory valuation. Reserves for slow moving and obsolete inventories are provided based on historical experience, inventory aging and product demand. The Company continuously evaluates the adequacy of these reserves and makes adjustments to these reserves as required.

The Paper Packaging & Services segment trades certain inventories with third parties. These inventory trades are accounted for as non-monetary exchanges and any unfavorable imbalances, resulting from these trades, are recorded as a liability to the Company .

Net Assets Held for Sale

Net assets held for sale represent land, buildings and other assets and liabilities for locations that have met the criteria of "held for sale" accounting, as specified by Accounting Standards Codification ("ASC") 360, "Property, Plant, and Equipment." As of October 31, 2018, there were two asset groups within the Rigid Industrial Packaging & Services and one asset group within Paper Packaging & Services segment classified as assets and liabilities held for sale. The effect of suspending depreciation on the facilities held for sale is immaterial to the results of operations. The net assets held for sale are being marketed for sale and it is the Company's intention to complete the sales of these assets within the upcoming year.

Goodwill and Indefinite-Lived Intangibles

Goodwill is the excess of the purchase price of an acquired entity over the amounts assigned to tangible and intangible assets and liabilities assumed in the business combination. The Company accounts for purchased goodwill and indefinite-lived intangible assets in accordance with ASC 350, "Intangibles – Goodwill and Other." Under ASC 350, purchased goodwill and intangible assets with indefinite lives are not amortized, but instead are tested for impairment at least annually. The Company tests for impairment of goodwill and indefinite-lived intangible assets during the fourth quarter of each fiscal year as of August 1, or more frequently if certain indicators are present or changes in circumstances suggest that impairment may exist.

In accordance with ASC 350, the Company has the option to first assess qualitative factors to determine whether it is necessary to perform the quantitative test for goodwill impairment. If the Company believes, as a result of its qualitative assessment, that it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, the quantitative impairment test is required. The quantitative test for goodwill impairment is conducted at the reporting unit level by comparing the carrying value of each reporting unit to the estimated fair value of the unit. If the carrying value of a reporting unit exceeds its estimated fair value, then the goodwill of the reporting unit is impaired. Goodwill impairment is recognized in the amount that the carrying value exceeds the fair value; not to exceed the balance of goodwill attributable to the reporting unit. When a portion of a reporting unit

is disposed of, goodwill is allocated to the gain or loss on that disposition based on the relative fair values of the portion of the reporting unit subject to disposition and the portion of the reporting unit that will be retained.

The Company's determinations of estimated fair value of the reporting units are based on both the market approach and a discounted cash flow analysis utilizing the income approach. Under the market approach, the principal inputs are market prices and valuation multiples for public companies engaged in businesses that are considered comparable to the reporting unit. Under the income approach, the principal inputs are the reporting unit's cash-generating capabilities and the discount rate. The discount rates used in the income approach are based on a market participant's weighted average cost of capital. The use of alternative estimates, including different peer groups or changes in the industry, or adjusting the discount rate, earnings before interest, taxes, depreciation, depletion and amortization forecasts or cash flow assumptions used could affect the estimated fair value of the reporting units and potentially result in goodwill impairment. Any identified impairment would result in an expense to the Company's results of operations. Refer to Note 5 for additional information regarding goodwill and other intangible assets.

Other Intangibles

The Company accounts for intangible assets in accordance with ASC 350. Definite lived intangible assets are amortized over their useful lives on a straight-line basis. The useful lives for definite lived intangible assets vary depending on the type of asset and the terms of contracts or the valuation performed. Amortization expense on intangible assets is recorded on the straight-line method over their useful lives as follows:

	Years
Trade names	10-15
Non-competes	1-10
Customer relationships	5-25
Other intangibles	3-20

Acquisitions

From time to time, the Company acquires businesses and/or assets that augment and complement its operations. In accordance with ASC 805, "Business Combinations," these acquisitions are accounted for under the purchase method of accounting. The consolidated financial statements include the results of operations from these business combinations from the date of acquisition.

In order to assess performance, the Company classifies costs incurred in connection with acquisitions as acquisition-related costs. These costs consist primarily of transaction costs, integration costs and changes in the fair value of contingent payments (earn-outs) and are recorded within selling, general and administrative costs. Acquisition transaction costs are incurred during the initial evaluation of a potential targeted acquisition and primarily relate to costs to analyze, negotiate and consummate the transaction as well as financial and legal due diligence activities. Post-acquisition integration activities are costs incurred to combine the operations of an acquired enterprise into the Company's operations.

Internal Use Software

Internal use software is accounted for under ASC 985, "Software." Internal use software is software that is acquired, internally developed or modified solely to meet the Company's needs and for which, during the software's development or modification, a plan does not exist to market the software externally. Costs incurred to develop the software during the application development stage and for upgrades and enhancements that provide additional functionality are capitalized and then amortized over a three to ten year period. Internal use software is capitalized as a component of machinery and equipment on the Consolidated Balance Sheets.

Long-Lived Assets

Properties, plants and equipment are stated at cost. Depreciation on properties, plants and equipment is provided on the straight-line method over the estimated useful lives of the assets as follows:

	Years
Buildings	30-45
Machinery and equipment	3-19

Depreciation expense was \$107.5 million, \$106.8 million and \$107.4 million in 2018, 2017 and 2016, respectively. Expenditures for repairs and maintenance are charged to expense as incurred. When properties are retired or otherwise disposed of, the cost and accumulated depreciation are eliminated from the asset and related allowance accounts. Gains or losses are credited or charged to income as incurred.

The Company capitalizes interest on long-term fixed asset projects using a rate that approximates the weighted average cost of borrowing. For the years ended October 31, 2018, 2017, and 2016, the Company capitalized interest costs of \$4.5 million, \$3.5 million, and \$2.6 million, respectively.

The Company tests for impairment of properties, plants and equipment if certain indicators are present to suggest that impairment may exist. Long-lived assets are grouped together at the lowest level, generally at the plant level, for which identifiable cash flows are largely independent of cash flows of other groups of long-lived assets. As events warrant, the Company evaluates the recoverability of long-lived assets, other than goodwill and indefinite-lived intangible assets, by assessing whether the carrying value can be recovered over their remaining useful lives through the expected future undiscounted operating cash flows of the underlying business. Impairment indicators include, but are not limited to, a significant decrease in the market price of a long-lived asset; a significant adverse change in the manner in which the asset is being used or in its physical condition; a significant adverse change in legal factors or the business climate that could affect the value of a long-lived asset; an accumulation of costs significantly in excess of the amount originally expected for the acquisition or construction of a long-lived asset; current period operating or cash flow losses combined with a history of operating or cash flow losses associated with the use of the asset; or a current expectation that it is more likely than not that a long-lived asset will be sold or otherwise disposed of significantly before the end of its previously estimated useful life. Future decisions to change our manufacturing processes, exit certain businesses, reduce excess capacity, temporarily idle facilities and close facilities could also result in material impairment charges. Any impairment loss that may be required is determined by comparing the carrying value of the assets to their estimated fair value.

As of October 31, 2018, the Company's timber properties consisted of approximately 243,000 acres, all of which were located in the southeastern United States. The Company's land costs are maintained by tract. Upon acquisition of a new timberland tract, the Company records separate amounts for land, merchantable timber and pre-merchantable timber allocated as a percentage of the values being purchased. The Company begins recording pre-merchantable timber costs at the time the site is prepared for planting. Costs capitalized during the establishment period include site preparation by aerial spray, costs of seedlings, including refrigeration rental and trucking, planting costs, herbaceous weed control, woody release, and labor and machinery use. The Company does not capitalize interest costs in the process. Property taxes are expensed as incurred. New road construction costs are capitalized as land improvements and depreciated over 20 years. Road repairs and maintenance costs are expensed as incurred. Costs after establishment of the seedlings, including management costs, pre-commercial thinning costs and fertilization costs, are expensed as incurred. Once the timber becomes merchantable, the cost is transferred from the pre-merchantable timber category to the merchantable timber category in the depletion block.

Merchantable timber costs are maintained by five product classes: pine sawtimber, pine chip-n-saw, pine pulpwood, hardwood sawtimber and hardwood pulpwood, within a depletion block, with each depletion block based upon a geographic district or subdistrict. Currently, the Company has eight depletion blocks. These same depletion blocks are used for pre-merchantable timber costs. Each year, the Company estimates the volume of the Company's merchantable timber for the five product classes by each depletion block and depletion costs recognized upon sales are calculated as volumes sold times the unit costs in the respective depletion block. Depletion expense was \$4.0 million, \$4.0 million and \$3.2 million in 2018, 2017 and 2016, respectively.

Contingencies

Various lawsuits, claims and proceedings have been or may be instituted or asserted against the Company, including those pertaining to environmental, product liability and safety and health matters. While the amounts claimed may be substantial, the ultimate liability cannot currently be determined because of the considerable uncertainties that exist.

All lawsuits, claims and proceedings are considered by the Company in establishing reserves for contingencies in accordance with ASC 450, "Contingencies." In accordance with the provisions of ASC 450, the Company accrues for a litigation-related liability when it is probable that a liability has been incurred and the amount of the loss can be reasonably estimated. Based on currently available information known to the Company, the Company believes that its reserves for these litigation-related liabilities are reasonable and that the ultimate outcome of any pending matters is not likely to have a material effect on the Company's financial position or results of operations.

Environmental Cleanup Costs

The Company accounts for environmental cleanup costs in accordance with ASC 410, "Asset Retirement and Environmental Obligations." The Company expenses environmental expenditures related to existing conditions resulting from past or current

operations and from which no current or future benefit is discernible. Expenditures that extend the life of the related property or mitigate or prevent future environmental contamination are capitalized. The Company determines its liability on a site-by-site basis and records a liability at the time when it is probable and can be reasonably estimated. The Company's estimated liability is 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 the relevant costs.

Self-insurance

The Company is self-insured for certain of the claims made under its employee medical and dental insurance programs. The Company had recorded liabilities totaling \$3.8 million and \$3.3 million for estimated costs related to outstanding claims as of October 31, 2018 and 2017, respectively. These costs include an estimate for expected settlements on pending claims, administrative fees and an estimate for claims incurred but not reported. These estimates are based on management's assessment of outstanding claims, historical analyses and current payment trends. The Company recorded an estimate for the claims incurred, but not reported using an estimated lag period based upon historical information.

The Company has certain deductibles applied to various insurance policies including general liability, product, vehicle and workers' compensation. The Company maintains liabilities totaling \$9.8 million and \$11.0 million for anticipated costs related to general liability, product, vehicle and workers' compensation claims as of October 31, 2018 and 2017, respectively. These costs include an estimate for expected settlements on pending claims, defense costs and an estimate for claims incurred but not reported. These estimates are based on the Company's assessment of its deductibles, outstanding claims, historical analysis, actuarial information and current payment trends.

Income Taxes

Income taxes are accounted for under ASC 740, "Income Taxes." In accordance with ASC 740, deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases, as measured by enacted tax rates that are expected to be in effect in the periods when the deferred tax assets and liabilities are expected to be settled or realized. Valuation allowances are established when management believes it is more likely than not that some portion of the deferred tax assets will not be realized.

The Company's effective tax rate is impacted by the amount of income generated in each taxing jurisdiction, statutory tax rates and tax planning opportunities available to the Company in the various jurisdictions in which the Company operates. Significant judgment is required in determining the Company's effective tax rate and in evaluating its tax positions.

Tax benefits from uncertain tax positions are recognized when it is more likely than not that the position will be sustained upon examination, including resolutions of any related appeals or litigation processes, based on the technical merits. The amount recognized is measured as the largest amount of tax benefit that is greater than 50 percent likely of being realized upon settlement. The Company's effective tax rate includes the impact of reserve provisions and changes to reserves on uncertain tax positions that are not more likely than not to be sustained upon examination as well as related interest and penalties.

A number of years may elapse before a particular matter, for which the Company has established a reserve, is audited and finally resolved. The number of years with open tax audits varies depending on the tax jurisdiction. While it is often difficult to predict the final outcome or the timing of resolution of any particular tax matter, the Company believes that its reserves reflect the probable outcome of known tax contingencies. Unfavorable settlement of any particular issue would require use of the Company's cash. Favorable resolution would be recognized as a reduction to the Company's effective tax rate in the period of resolution.

Equity earnings of unconsolidated affiliates, net of tax

Equity earnings of unconsolidated affiliates, net of tax represent the Company's share of earnings of affiliates in which the Company does not exercise control, but has significant influence. Investments in such affiliates are accounted for using the equity method of accounting. If the fair value of an investment in an affiliate is below its carrying value and the difference is deemed to be other than temporary, the difference between the fair value and the carrying value is charged to earnings. The Company has an equity interest in two such affiliates as of October 31, 2018, including the addition of an equity method investment in 2016. For additional information regarding the addition of the equity method investment in 2016 refer to Note 2.

Other Comprehensive Income

Our other comprehensive income is significantly impacted by foreign currency translation, effective cash flow hedges and defined benefit pension and postretirement benefit adjustments.

The impact of foreign currency translation is affected by the translation of assets, liabilities and operations of the Company's foreign subsidiaries which are denominated in functional currencies other than the U.S. dollar and the recognition of accumulated foreign currency translation upon the disposal of foreign entities. The primary assets and liabilities affecting the adjustments are: cash and cash equivalents; accounts receivable; inventory; properties, plants and equipment; accounts payable; pension and other postretirement benefit obligations; and certain intercompany loans payable and receivable. The primary currencies in which these assets and liabilities are denominated are the Euro, Brazilian real, and Chinese yuan.

The impact of effective cash flow hedges is reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. Currently, interest rate swaps are held by the Company to effectively convert a portion of floating rate debt to a fixed rate basis, thus reducing the impact of interest rate increases on future interest expense. The Company uses the regression method for assessing the effectiveness of the swaps.

The impact of defined benefit pension and postretirement benefit adjustments is primarily affected by unrecognized actuarial gains and losses related to the Company's defined benefit and other postretirement benefit plans, as well as the subsequent amortization of gains and losses from accumulated other comprehensive income in periods following the initial recording of such items. These actuarial gains and losses are determined using various assumptions, the most significant of which are (i) the weighted average rate used for discounting the liability, (ii) the weighted average expected long-term rate of return on pension plan assets, (iii) the method used to determine market-related value of pension plan assets, (iv) the weighted average rate of future salary increases and (v) the anticipated mortality rate tables.

Restructuring Charges

The Company accounts for all exit or disposal activities in accordance with ASC 420, "Exit or Disposal Cost Obligations." Under ASC 420, a liability is measured at its fair value and recognized as incurred.

Employee-related costs primarily consist of one-time termination benefits provided to employees who have been involuntarily terminated. A one-time benefit arrangement is an arrangement established by a plan of termination that applies for a specified termination event or for a specified future period. A one-time benefit arrangement exists at the date the plan of termination meets all of the following criteria and has been communicated to employees:

- (1) Management, having the authority to approve the action, commits to a plan of termination.
- (2) The plan identifies the number of employees to be terminated, their job classifications or functions and their locations, and the expected completion date.
- (3) The plan establishes the terms of the benefit arrangement, including the benefits that employees will receive upon termination (including but not limited to cash payments), in sufficient detail to enable employees to determine the type and amount of benefits they will receive if they are involuntarily terminated.
- (4) Actions required to complete the plan indicate that it is unlikely that significant changes to the plan will be made or that the plan will be withdrawn.

Facility exit and other costs consist of equipment relocation costs and project consulting fees. A liability for other costs associated with an exit or disposal activity shall be recognized and measured at its fair value in the period in which the liability is incurred (generally, when goods or services associated with the activity are received). The liability shall not be recognized before it is incurred, even if the costs are incremental to other operating costs and will be incurred as a direct result of a plan.

Pension and Postretirement Benefits

Under ASC 715, "Compensation – Retirement Benefits," employers recognize the funded status of their defined benefit pension and other postretirement plans on the consolidated balance sheet and record as a component of other comprehensive income, net of tax, the gains or losses and prior service costs or credits that have not been recognized as components of the net periodic benefit cost.

Transfer and Servicing of Assets

An indirect wholly-owned subsidiary of Greif, Inc. agrees to sell trade receivables meeting certain eligibility requirements that it had purchased from other indirect wholly-owned subsidiaries of Greif, Inc., under a non-U.S. factoring agreement. The structure of the transactions provide for a legal true sale, on a revolving basis, of the receivables transferred from the various Greif, Inc. indirect subsidiaries to the respective banks or their affiliates. The banks and their affiliates fund 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 is settled upon collection of the receivables. At the balance sheet

reporting dates, the Company removes from accounts receivable the amount of proceeds received from the initial purchase price since they meet the applicable criteria of ASC 860, “Transfers and Servicing,” and continues to recognize the deferred purchase price in its other current assets or other current liabilities, as the case may be. The receivables are sold on a non-recourse basis with the total funds in the servicing collection accounts pledged to the banks between settlement dates.

Stock-Based Compensation Expense

The Company recognizes stock-based compensation expense in accordance with ASC 718, “Compensation – Stock Compensation.” ASC 718 requires the measurement and recognition of compensation expense, based on estimated fair values, for all share-based awards made to employees and directors, including stock options, restricted stock, restricted stock units and participation in the Company’s employee stock purchase plan.

ASC 718 requires companies to estimate the fair value of share-based awards on the date of grant using an option-pricing model. The value of the portion of the award that is ultimately expected to vest is recognized as expense in the Company’s consolidated statements of income over the requisite service periods. No stock options were granted in 2018, 2017 or 2016. For any options granted in the future, compensation expense will be based on the grant date fair value estimated in accordance with the standard.

Revenue Recognition

The Company recognizes revenue when title passes and risks and rewards of ownership have transferred to customers or services have been rendered, with appropriate provision for returns and allowances. Revenue is recognized in accordance with ASC 605, “Revenue Recognition.”

Timberland disposals, timber sales, higher and better use (“HBU”) land, surplus and development property sales revenues are recognized when closings have occurred, required down payments have been received, title and possession have been transferred to the buyer and all other criteria for sale and profit recognition have been satisfied.

The Company reports the sale of timberland property in “timberland gains,” the sale of HBU and surplus property in “gain on disposal of properties, plants and equipment, net” and the sale of timber and development property under “net sales” and “cost of products sold” in its consolidated statements of income. All HBU and development property, together with surplus property, is used by the Company to productively grow and sell timber until the property is sold.

Shipping and Handling Fees and Costs

The Company includes shipping and handling fees and costs in cost of products sold.

Other Expense, net

Other expense, net primarily represents non-United States trade receivables program fees, foreign currency transaction gains and losses, non-service cost components of net periodic benefit costs and other infrequent non-operating items.

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 period-end, and revenues and expenses are translated at average exchange rates.

The cumulative translation adjustments, which represent the effects of translating assets and liabilities of the Company’s international operations, are presented in the consolidated statements of changes in shareholders’ equity in accumulated other comprehensive income (loss). Transaction gains and losses on foreign currency transactions denominated in a currency other than an entity’s functional currency are credited or charged to income. The amounts included in other expense, net related to transaction losses were \$8.8 million, \$6.4 million and \$6.7 million in 2018, 2017 and 2016, respectively.

Derivative Financial Instruments

In accordance with ASC 815, “Derivatives and Hedging,” the Company records all derivatives in the consolidated balance sheet as either assets or liabilities measured at fair value. Dependent on the designation of the derivative instrument, changes in fair value are recorded to earnings or shareholders’ equity through other comprehensive income (loss).

The Company may from time to time use interest rate swap agreements to hedge against changing interest rates. For interest rate swap agreements designated as cash flow hedges, the net gain or loss on the derivative instrument is reported as a component of

other comprehensive income (loss) and reclassified into earnings in the same period or periods during which the hedged transaction affects earnings. The Company's interest rate swap agreements effectively convert a portion of floating rate debt to a fixed rate basis, thus reducing the impact of interest rate increases on future interest expense.

The Company's cross currency interest rate swap agreement synthetically swaps U.S. dollar denominated fixed rate debt for Euro denominated fixed rate debt and is designated as a net investment hedge for accounting purposes. 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 consolidated statements of income.

The Company enters into currency forward contracts to hedge certain currency transactions and short-term intercompany loan balances with its international businesses. Such contracts limit the Company's exposure to both favorable and unfavorable currency fluctuations. These contracts are adjusted to reflect market value as of each balance sheet date, with the resulting changes in fair value being recognized in other expense, net.

Any derivative contract that is either not designated as a hedge, or is so designated but is ineffective, has its changes to market value recognized in earnings immediately. If a cash flow or fair value hedge ceases to qualify for hedge accounting, the contract would continue to be carried on the balance sheet at fair value until settled and have the adjustments to the contract's fair value recognized in earnings. If a forecasted transaction were no longer probable to occur, amounts previously deferred in accumulated other comprehensive income (loss) would be recognized immediately in earnings.

Fair Value

The Company uses ASC 820, "Fair Value Measurements and Disclosures" to account for fair value. ASC 820 defines fair value, establishes a framework for measuring fair value in GAAP and expands disclosures about assets and liabilities measured at fair value. Additionally, this standard established a three-level fair value hierarchy that prioritizes the inputs used to measure fair value. This hierarchy requires entities to maximize the use of observable inputs and minimize the use of unobservable inputs.

The three levels of inputs used to measure fair values are as follows:

- Level 1 – Observable inputs such as unadjusted quoted prices in active markets for identical assets and liabilities.
- Level 2 – Observable inputs other than quoted prices in active markets for identical assets and liabilities.
- Level 3 – Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets and liabilities.

The Company presents various fair value disclosures in Notes 9 and 12 to these consolidated financial statements.

Newly Adopted Accounting Standards

In March 2017, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") 2017-07, "Compensation - Retirement Benefits (Topic 715)," which provides additional guidance in ASC 715 for the presentation of net periodic benefit cost related to pension and post-retirement benefits in the income statement and on the components eligible for capitalization in assets. This ASU requires the reporting of the service cost component to be in the same line item as other compensation costs arising from services rendered by the pertinent employees. Also, the other components of net benefit cost are required to be presented in the income statement separately from the service cost component and outside a subtotal of income from operations. This update also allows only the service cost component to be eligible for capitalization when applicable. The update is effective for the Company on November 1, 2018 using a retrospective approach for the presentation of the service cost component and the other components of net periodic pension cost and net periodic post-retirement benefit cost in the income statement and prospectively, on and after the effective date, for the capitalization of the service cost component of net periodic pension cost and net periodic post-retirement benefit in assets. The Company early adopted ASU 2017-07 on November 1, 2017 using a retrospective approach for each period presented. The impact of adoption for the year ended October 31, 2018 was \$5.9 million of net periodic benefit costs, other than the service cost components, being recorded in the line item "other expense, net" in the consolidated statements of income. For the year ended October 31, 2017, \$27.1 million of pension settlement charges, previously presented within operating profit have been presented outside of operating profit in the consolidated statements of income due to the retrospective adoption of this ASU. 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 August 2017, the FASB issued ASU 2017-12, "Derivatives and Hedging (Topic 815)," which amends the accounting and disclosure requirements in ASC 815, "Derivatives and Hedging." The objective of this ASU is to improve transparency and reduce

the complexity of hedge accounting. This ASU eliminates the separate recognition of periodic hedge ineffectiveness for cash flow and net investment hedges. The update is effective for the Company on November 1, 2019 using a modified retrospective approach and early adoption is permitted. The Company early adopted ASU 2017-12 on November 1, 2017 using a modified retrospective approach, which resulted in a reclassification of \$0.6 million of losses out of "accumulated other comprehensive income (loss), net of tax" and into "Retained Earnings" related to an elimination of the cumulative ineffectiveness of cash flow hedges at the adoption date. 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 May 2014, the FASB issued ASU 2014-09, "Revenue from Contracts with Customers (Topic 606)," which supersedes the revenue recognition requirements in ASC 605, "Revenue Recognition." This ASU is based on the principle that revenue is recognized 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 in exchange for those goods or services. The ASU 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 update is effective for the Company on November 1, 2018 using one of two retrospective application methods. The Company is finalizing its process related to the adoption of the new revenue standard. The Company has completed internal training sessions, interviews with key global business personnel, global revenue surveys and review of a global representative sample of revenue contracts. The Company is in the process of finalizing its position papers and accounting policies, updating internal controls and reviewing and developing the additional disclosures required by the standard. The Company will adopt the modified retrospective transition method for implementing this guidance effective November 1, 2018. The Company anticipates that the impact of adoption will be limited to expanded disclosures with no material impact on its financial position, results of operations, comprehensive income or cash flows.

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. The Company also plans to implement a technology tool to assist with the accounting and reporting requirements of the new standard, as well as 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.

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. The update is effective for the Company on November 1, 2018 and early adoption is permitted, including any interim period. The update should be applied using a retrospective approach, excluding amendments for which retrospective application is impractical. 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 existing guidance, the Company classifies cash receipts from beneficial interests in securitized receivables and cash payments resulting from debt prepayment or extinguishment as cash flows from operating activities. The Company anticipates that the impact of the adoption of this ASU will materially impact its cash flows from operating activities and cash flows from investing activities within the statement of cash flows, and does not anticipate the adoption will have a material impact on its financial position, results of operations, comprehensive income, cash flows or disclosures, other than the impacts mentioned above.

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. The update is effective for the Company on November 1, 2018 using a modified retrospective approach and early adoption is permitted, including any interim period. The adoption of ASU 2016-16 will result in a reclassification of approximately \$15.7 million out of "prepaid tax assets" and into "Retained Earnings" as of November 1, 2018. The Company does not anticipate the adoption will have a material impact on its financial position, results of operations, comprehensive income, or cash flows, however, existing disclosures, such as the effective tax rate reconciliation or the disclosure of the components of deferred tax assets and deferred tax liabilities may be affected by the recognition of the tax consequences of intra-entity transfers of assets.

NOTE 2 – ACQUISITIONS AND DIVESTITURES

During 2018, the Company completed no divestitures and no acquisitions. The Company liquidated two non-strategic non-U.S. businesses in the Flexible Products & Services segment. The gain on disposal of businesses was \$0.8 million for the year ended October 31, 2018. Proceeds from divestitures that were completed in fiscal year 2017 and collected during the year ended October 31, 2018 were \$0.5 million. Proceeds from divestitures that were completed in fiscal year 2015 and collected during the year ended October 31, 2018 were \$0.9 million. The Company has \$2.9 million of notes receivable recorded from the sale of businesses, in remaining terms of up to six months.

During 2017, the Company completed two divestitures, completed no acquisitions, deconsolidated two nonstrategic businesses, and liquidated two non-U.S. nonstrategic businesses. The Company completed two divestitures of businesses in the Rigid Industrial Packaging & Services segment. The Company deconsolidated one nonstrategic business in the Flexible Products & Services segment and one nonstrategic business in the Rigid Industrial Packaging & Services segment. The Company liquidated two non-U.S. nonstrategic businesses in the Rigid Industrial Packaging & Services segment. The loss on disposal of businesses was \$1.7 million for the year ended October 31, 2017. Proceeds from divestitures were \$5.1 million for the year ended October 31, 2017. Proceeds from divestitures that were completed in fiscal year 2015 and collected during the year ended October 31, 2017 were \$0.8 million. The Company had \$4.3 million of notes receivable recorded from the sale of businesses.

During 2016, the Company completed four divestitures, one partial sale of ownership interest resulting in deconsolidation of a then wholly-owned indirect subsidiary and no material acquisitions. The divestitures were of nonstrategic businesses: three in the Rigid Industrial Packaging & Services segment; and one in the Flexible Products & Services segment. The loss on disposal of businesses was \$14.5 million for the year ended October 31, 2016, consisting of an \$18.1 million loss on the partial sale of ownership interest and a net gain of \$3.6 million for the four divestitures. Proceeds from divestitures and the partial sale of ownership interest were \$24.1 million. The Company had \$2.4 million of notes receivable recorded for the sale of businesses.

The partial sale of ownership interest resulting in deconsolidation of a then wholly-owned indirect subsidiary was the result of the sale of 51 percent ownership interest in Earthminded Benelux, NV, a subsidiary in the Rigid Industrial Packaging & Services segment, which, together with the relinquishment of the Company's power to direct the activities that most significantly impact the subsidiary's performance, resulted in deconsolidation. As of September 1, 2016, the Company accounts for its investment in this subsidiary under the equity method of accounting due to the Company's noncontrolling ownership interest.

The \$18.1 million loss on the partial sale of ownership interest resulting in deconsolidation was measured as the difference between (a) the fair value of the retained noncontrolling interest of \$0.3 million and the consideration transferred of \$0.3 million from the unrelated third party purchaser and (b) the carrying value of the former subsidiary's net assets of \$18.7 million.

None of the above-referenced divestitures in 2018, 2017 or 2016 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 3 – 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 18, 2017, the Main SPV and Seller amended and extended the term of the existing European RPA. Under the European RPA, as amended, the maximum amount of receivables that may be sold and outstanding under the European RPA at any time is €100 million (\$113.7 million as of October 31, 2018). Under the terms of the European RPA, the Company has the ability to loan excess cash back to the Purchasing Bank Affiliates in the form of a subordinated loan receivable.

Under the terms of the European RPA, the Company has agreed to sell trade receivables meeting certain eligibility requirements that the Seller had purchased from other of the Company's indirect wholly-owned subsidiaries under a factoring agreement. The structure of the transactions provide for a legal true sale, on a revolving basis, of the receivables transferred from the Company's various subsidiaries to the respective banks and their affiliates. The purchaser funds 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 is settled upon collection of the receivables. At the balance sheet reporting dates, the Company removes from accounts receivable the amount of proceeds received from the initial purchase price since they meet the applicable criteria of ASC 860, "Transfers and Servicing," and the Company continues to recognize the deferred purchase price in other current assets or other current liabilities, as appropriate. The receivables are sold on a non-recourse basis with the total funds in the servicing collection accounts pledged to the banks between settlement dates.

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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 (\$10.8 million as of October 31, 2018). 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 the receivables.

The table below contains information related to the Company’s accounts receivable programs:

<i>(in millions)</i>	Year Ended October 31,		
	2018	2017	2016
European RPA			
Gross accounts receivable sold to third party financial institution	\$ 707.2	\$ 715.1	\$ 620.3
Cash received for accounts receivable sold under the programs	628.8	633.4	548.1
Deferred purchase price related to accounts receivable sold	78.5	81.8	71.7
Loss associated with the programs	0.3	0.5	0.8
Expenses associated with the programs	—	—	—
Singapore RPA			
Gross accounts receivable sold to third party financial institution	\$ 57.0	\$ 50.1	\$ 44.1
Cash received for accounts receivable sold under the programs	48.9	43.0	36.4
Deferred purchase price related to accounts receivable sold	8.2	7.1	7.1
Loss associated with the programs	0.1	0.6	—
Expenses associated with the programs	0.1	0.4	—
Total RPAs and Agreements			
Gross accounts receivable sold to third party financial institution	\$ 764.2	\$ 765.2	\$ 664.4
Cash received for accounts receivable sold under the program	677.7	676.4	584.5
Deferred purchase price related to accounts receivable sold	86.7	88.9	78.8
Loss associated with the program	0.4	1.1	0.8
Expenses associated with the program	0.1	0.4	—

<i>(in millions)</i>	October 31, 2018	October 31, 2017
European RPA		
Accounts receivable sold to and held by third party financial institution	\$ 132.1	\$ 116.3
Deferred purchase price liability related to accounts receivable sold	(6.2)	(4.2)
Singapore RPA		
Accounts receivable sold to and held by third party financial institution	\$ 5.8	\$ 3.8
Deferred purchase price asset related to accounts receivable sold	0.7	0.5
Total RPAs and Agreements		
Accounts receivable sold to and held by third party financial institution	\$ 137.9	\$ 120.1
Deferred purchase price liability related to accounts receivable sold	(5.5)	(3.7)

The deferred purchase price related to the accounts receivable sold is reflected as other current assets or other current liabilities, as appropriate on the Company’s consolidated balance sheet and was initially recorded at an amount which approximates its fair value due to the short-term nature of these items. The cash received initially and the deferred purchase price relate to the sale or ultimate collection of the underlying receivables and are not subject to significant other risks given their short nature; therefore, the Company reflects all cash flows under the accounts receivable sales programs as operating cash flows on the Company’s consolidated statements of cash flows.

Additionally, the Company performs collections and administrative functions on the receivables sold similar to the procedures it uses for collecting all of its receivables, including receivables that are not sold under the European RPA and the Singapore RPA. The servicing liability for these receivables is not material to the consolidated financial statements.

NOTE 4 – ASSETS AND LIABILITIES HELD FOR SALE AND DISPOSALS OF PROPERTY, PLANT AND EQUIPMENT, NET

As of October 31, 2018, there were two asset groups within the Rigid Industrial Packaging & Services segment and one asset group within the Paper Packaging & Services segment 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 of these assets within twelve months following their initial classification into assets held for sale.

During 2018, the Company recorded a gain on disposal of properties, plants and equipment, net of \$5.6 million. This included disposals of assets in the Rigid Industrial Packaging & Services segment that resulted in gains of \$3.3 million and special use property sales that resulted in gains of \$2.3 million in the Land Management segment.

For the year ended October 31, 2017, the Company recorded a gain on disposal of properties, plants and equipment, net of \$0.4 million. This included special use property sales that resulted in gains of \$2.5 million in the Land Management segment, disposals of assets in the Flexible Products & Services segment that resulted in gains of \$0.9 million, partially offset by disposals of assets that resulted in a net loss of \$0.2 million in the Rigid Industrial Packaging & Services segment, a \$2.7 million loss on the reclassification of an asset group from held for sale to held and used in the Rigid Industrial Packaging & Services segment, and disposals of assets in the Paper Packaging segment that resulted in a net loss of \$0.1 million.

For the year ended October 31, 2016, the Company recorded a gain on disposal of properties, plants and equipment, net of \$10.3 million. This included insurance recoveries that resulted in gains of \$6.4 million in the Rigid Industrial Packaging & Services segment, disposals of assets in the Flexible Products & Services segment classified as held for sale that resulted in gains of \$1.3 million, sales of surplus properties in the Land Management segment that resulted in gains of \$1.6 million, insurance recoveries that resulted in gains of \$0.2 million in the Paper Packaging & Services segment, and other net gains totaling an additional \$0.8 million.

NOTE 5 – GOODWILL AND OTHER INTANGIBLE ASSETS

The following table summarizes the changes in the carrying amount of goodwill by segment for the years ended October 31, 2018 and 2017:

<i>(in millions)</i>	Rigid Industrial Packaging & Services ⁽¹⁾	Paper Packaging & Services	Flexible Products & Services ⁽¹⁾	Land Management	Total
Balance at October 31, 2016	\$ 726.9	\$ 59.5	\$ —	\$ —	\$ 786.4
Goodwill acquired	—	—	—	—	—
Goodwill allocated to divestitures and businesses held for sale	(9.2)	—	—	—	(9.2)
Goodwill adjustments	—	—	—	—	—
Goodwill impairment charge	(13.0)	—	—	—	(13.0)
Currency translation	21.2	—	—	—	21.2
Balance at October 31, 2017	\$ 725.9	\$ 59.5	\$ —	\$ —	\$ 785.4
Goodwill acquired	—	—	—	—	—
Goodwill allocated to divestitures and businesses held for sale	(0.7)	—	—	—	(0.7)
Goodwill adjustments	—	—	—	—	—
Goodwill impairment charge	—	—	—	—	—
Currency translation	(8.7)	—	—	—	(8.7)
Balance at October 31, 2018	\$ 716.5	\$ 59.5	\$ —	\$ —	\$ 776.0

⁽¹⁾Accumulated goodwill impairment loss was \$63.3 million as of October 31, 2018 and 2017. Included in the accumulated goodwill impairment loss was \$13.0 million related to the Rigid Industrial Packaging & Services segment and \$50.3 million related to the Flexible Products & Services segment. Accumulated goodwill impairment loss was \$50.3 million as of October 31, 2016 related to the Flexible Products & Services segment.

The Company reviews goodwill by reporting unit and indefinite-lived intangible assets for impairment as required by ASC 350, "Intangibles – Goodwill and Other," either annually in the fourth quarter as of August 1, or whenever events and circumstances indicate impairment may have occurred. A reporting unit is the operating segment, or a business one level below that operating segment (the component level) if discrete financial information is prepared and regularly reviewed by segment management. The components are aggregated into reporting units for purposes of goodwill impairment testing to the extent they share similar qualitative and quantitative characteristics.

The Company performed its annual goodwill impairment test as of August 1, 2018 which resulted in no goodwill impairment. The majority of the Company's goodwill reporting units were tested utilizing a qualitative assessment. However, for the Rigid Industrial Packaging & Services - Asia Pacific reporting unit the Company proceeded directly to the quantitative impairment test. The fair value of the reporting unit exceeded the carrying value by 20%, resulting in no impairment. Discount rates, growth rates and cash flow projections are the assumptions that are most sensitive and susceptible to change as they require significant management judgment. In addition, certain future events and circumstances, including deterioration of market conditions, higher cost of capital, a decline in actual and expected consumption and demand, could result in changes to these assumptions and judgments. A revision of these assumptions could cause the fair value of the reporting unit to fall below its respective carrying value. As for all of the Company's reporting units, if in future years, the reporting unit's actual results are not consistent with the Company's estimates and assumptions used to calculate fair value, the Company may be required to recognize material impairments to goodwill.

During the fourth quarter of 2017 the Company performed an assessment of its operating segments and determined that as a result of changes in the way the chief operating decision maker receives and reviews financial information, a realignment of its operating segment structure was necessary. As a result of the operating segment realignment, the Company's reporting unit structure was updated for consistency. As of August 1, 2017, the Company realigned its operating segments to include eight operating segments: Rigid Industrial Packaging & Services – North America; Rigid Industrial Packaging & Services – Latin America; Rigid Industrial Packaging & Services – Europe, Middle East and Africa; Rigid Industrial Packaging & Services – Asia Pacific; and Rigid Industrial Packaging & Services – Tri-Sure; Paper Packaging & Services; Flexible Products & Services; and Land Management. The Company's eight operating segments are aggregated into four reportable business segments by combining the Rigid Industrial Packaging & Services – North America; Rigid Industrial Packaging & Services – Latin America; Rigid Industrial Packaging & Services – Europe, Middle East and Africa; Rigid Industrial Packaging & Services – Asia Pacific; and Rigid Industrial Packaging & Services – Tri-Sure operating segments. The Company's reporting units are the same as the operating segments. As a result of the realignment, goodwill was reassigned to each of the Rigid Industrial Packaging & Services reporting units using a relative fair value approach.

The Company performed its annual goodwill review as of August 1, 2017, for each of the reporting units with a goodwill balance under both the former and current reporting unit structure. The impairment test under the former reporting unit structure concluded that no impairment existed as of August 1, 2017. The impairment test under the updated reporting unit structure concluded that the carrying value of the Rigid Industrial Packaging & Services – Latin America reporting unit exceeded the fair value of the reporting unit and the goodwill of the Rigid Industrial Packaging & Services – Latin America reporting unit of \$13.0 million was fully impaired.

The fair value of the Rigid Industrial Packaging & Services – Latin America reporting unit was determined using a combination of the income approach by discounting estimated future cash flows and the market multiple approach. The cash flow projections were prepared based upon the evaluation of the historical performance and future growth expectations for the reporting unit. Revenue was based on the 2017 forecast as of August 1, 2017 with a long-term growth rate applied to future periods. The most critical assumptions within the cash flow projections are revenue growth rates and forecasted gross margin percentages. The most critical assumption within the market multiple calculation is the multiple selected.

Prior to the change in the fourth quarter of 2017, the Company's reporting unit structure consisted of five reporting units: Rigid Industrial Packaging & Services – Americas; Rigid Industrial Packaging & Services – Europe, Middle East, Africa and Asia Pacific; Paper Packaging & Services; Flexible Products & Services; and Land Management. The Company performed its annual goodwill impairment test as of August 1, 2016 which resulted in no goodwill impairment under the then-current reporting unit structure.

Refer to Note 9 herein for further discussion regarding goodwill allocated to divestitures and businesses held for sale.

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The following table summarizes the carrying amount of net intangible assets by class as of October 31, 2018 and 2017:

<i>(in millions)</i>	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	<u>\$ 207.6</u>	<u>\$ 127.0</u>	<u>\$ 80.6</u>
October 31, 2017:			
Indefinite lived:			
Trademarks and patents	\$ 13.4	\$ —	\$ 13.4
Definite lived:			
Customer relationships	\$ 170.2	\$ 99.7	\$ 70.5
Trademarks and patents	11.6	4.9	6.7
Other	23.4	16.0	7.4
Total	<u>\$ 218.6</u>	<u>\$ 120.6</u>	<u>\$ 98.0</u>

Gross intangible assets decreased by \$11.0 million for the year ended October 31, 2018. The decrease was attributable to \$3.7 million of currency fluctuations, \$2.9 million of impairment and the write-off of \$4.4 million of fully-amortized assets. Amortization expense was \$15.2 million, \$13.5 million and \$16.8 million for the years ended October 31, 2018, 2017 and 2016, respectively. Amortization expense for the next five years is expected to be \$15.3 million in 2019, \$15.0 million in 2020, \$14.4 million in 2021, \$12.8 million in 2022 and \$8.8 million in 2023.

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 or legally determined, or over the period a market participant would benefit from the asset. Indefinite lived intangibles of approximately \$13.3 million as of October 31, 2018, related primarily to the Tri-Sure trademark and trade names related to Closures, Blagden Express, Closed-loop, Box Board and Pachmas, are not amortized.

NOTE 6 – RESTRUCTURING CHARGES

The following is a reconciliation of the beginning and ended restructuring reserve balances for the years ended October 31, 2018 and 2017:

<i>(in millions)</i>	Employee Separation Costs	Other Costs	Total
Balance at October 31, 2016	\$ 9.2	\$ 1.2	\$ 10.4
Costs incurred and charged to expense	9.0	3.7	12.7
Costs paid or otherwise settled	(14.3)	(3.6)	(17.9)
Balance at October 31, 2017	<u>\$ 3.9</u>	<u>\$ 1.3</u>	<u>\$ 5.2</u>
Costs incurred and charged to expense	14.8	3.8	18.6
Costs paid or otherwise settled	(14.5)	(4.9)	(19.4)
Balance at October 31, 2018	<u>\$ 4.2</u>	<u>\$ 0.2</u>	<u>\$ 4.4</u>

The focus for restructuring activities in 2018 was to continue to rationalize operations and close underperforming assets in the Rigid Industrial Packaging & Services segment. During the year ended October 31, 2018, the Company recorded restructuring charges of \$18.6 million, as compared to \$12.7 million of restructuring charges recorded during the year ended October 31, 2017.

The restructuring activity for the year ended October 31, 2018 consisted of \$14.8 million in employee separation costs and \$3.8 million in other restructuring costs, primarily consisting of professional fees and other fees associated with restructuring activities. There were five plants closed in 2018, and a total of 322 employees severed throughout 2018 as part of the Company’s restructuring efforts.

The following is a reconciliation of the total amounts expected to be incurred from open restructuring plans or plans that are being formulated and have not been announced as of the filing date of this Form 10-K. Remaining amounts expected to be incurred were \$12.0 million as of October 31, 2018:

<i>(in millions)</i>	Total Amounts Expected to be Incurred	Amounts Incurred During the year ended October 31, 2018	Amounts Remaining to be Incurred
Rigid Industrial Packaging & Services:			
Employee separation costs	\$ 22.7	\$ 13.6	9.1
Other restructuring costs	5.5	3.7	1.8
	28.2	17.3	10.9
Flexible Products & Services:			
Employee separation costs	0.8	0.8	—
Other restructuring costs	1.2	0.1	1.1
	2.0	0.9	1.1
Paper Packaging & Services:			
Employee separation costs	0.4	0.4	—
	0.4	0.4	—
	\$ 30.6	\$ 18.6	\$ 12.0

The focus for restructuring activities in 2017 was to continue to rationalize operations and close underperforming assets in the Rigid Industrial Packaging & Services and Flexible Products & Services segments. During 2017, the Company recorded restructuring charges of \$12.7 million, consisting of \$9.0 million in employee separation costs and \$3.7 million in other restructuring costs, primarily consisting of professional fees and other fees associated with restructuring activities. There were two plants closed and a total of 157 employees severed throughout 2017 as part of the Company’s restructuring efforts.

The focus for restructuring activities in 2016 was to rationalize and close underperforming assets in the Rigid Industrial Packaging & Services and Flexible Products & Services segments. During 2016, the Company recorded restructuring charges of \$26.9 million, consisting of \$16.7 million in employee separation costs and \$10.2 million in other restructuring costs, primarily consisting of professional fees incurred for services specifically associated with employee separation and relocation. There were four plants closed and a total of 254 employees severed throughout 2016 as part of the Company’s restructuring efforts.

NOTE 7 – 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 VIE’s quarterly to determine if the primary beneficiary status is appropriate. The Company consolidates VIE’s 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

On April 20, 2018, Greif, Inc. and one of its indirect 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 as 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 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 factors that led to the conclusion that the Paper Packaging JV is a VIE was that all limited partnerships are considered to be VIE's unless the limited partners have substantive kick-out rights or substantive participating rights.

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

Significant Nonstrategic Timberland Transactions

On March 28, 2005, Soterra LLC (a wholly owned subsidiary) entered into two real estate purchase and sale agreements with Plum Creek Timberlands, L.P. ("Plum Creek") to sell approximately 56,000 acres of timberland and related assets located primarily in Florida for an aggregate sales price of approximately \$90 million, subject to closing adjustments. In connection with the closing of one of these agreements, Soterra LLC sold approximately 35,000 acres of timberland and associated assets in Florida, Georgia and Alabama for \$51.0 million, resulting in a pretax gain of \$42.1 million, on May 23, 2005. The purchase price was paid in the form of cash and a \$50.9 million purchase note payable (the "Purchase Note") by an indirect subsidiary of Plum Creek (the "Buyer SPE"). Soterra LLC contributed the Purchase Note to STA Timber LLC ("STA Timber"), one of the Company's indirect wholly owned subsidiaries. The Purchase Note is secured by a Deed of Guarantee issued by Bank of America, N.A., London Branch, in an amount not to exceed \$52.3 million (the "Deed of Guarantee"), as a guarantee of the due and punctual payment of principal and interest on the Purchase Note.

The Company completed the second and final phase of these transactions in the first and second quarters of 2006, respectively, with the sale of 15,300 acres and another approximately 5,700 acres.

On May 31, 2005, STA Timber issued in a private placement its 5.20% Senior Secured Notes due August 5, 2020 (the "Monetization Notes") in the principal amount of \$43.3 million. In connection with the sale of the Monetization Notes, STA Timber entered into note purchase agreements with the purchasers of the Monetization Notes (the "Note Purchase Agreements") and related documentation. The Monetization Notes are secured by a pledge of the Purchase Note and the Deed of Guarantee. The Monetization Notes may be accelerated in the event of a default in payment or a breach of the other obligations set forth therein or in the Note Purchase Agreements or related documents, subject in certain cases to any applicable cure periods, or upon the occurrence of certain insolvency or bankruptcy related events. The Monetization Notes are subject to a mechanism that may cause them, subject to certain conditions, to be extended to November 5, 2020. The proceeds from the sale of the Monetization Notes were primarily used for the repayment of indebtedness. Greif, Inc. and its other subsidiaries have not extended any form of guaranty of the principal or interest on the Monetization Notes. Accordingly, Greif, Inc. and its other subsidiaries will not become directly or contingently liable for the payment of the Monetization Notes at any time.

The Buyer SPE is deemed to be a VIE since the assets of the Buyer SPE are not available to satisfy the liabilities of the Buyer SPE. The Buyer SPE is a separate and distinct legal entity from the Company and no ownership interest in the Buyer SPE is held by the Company, but 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 or the right to receive benefits from the VIE that could potentially be significant to the VIE. As a result, Buyer SPE has been consolidated into the operations of the Company.

As of October 31, 2018 and 2017, assets of the Buyer SPE consisted of \$50.9 million of restricted bank financial instruments which are expected to be held to maturity. For each of the years ended October 31, 2018, 2017 and 2016, the Buyer SPE recorded interest income of \$2.4 million.

As of October 31, 2018 and 2017, STA Timber had long-term debt of \$43.3 million. For each of the years ended October 31, 2018, 2017 and 2016, STA Timber recorded interest expense of \$2.2 million. STA Timber is exposed to credit-related losses in the event of nonperformance by the issuer of the Deed of Guarantee.

Flexible Packaging Joint Venture

On September 29, 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 ("GRP"). 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 since its formation date of September 29, 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 was 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.

The economic and business purpose underlying the Flexible Packaging JV is to establish a global industrial flexible products enterprise through a series of targeted acquisitions and major investments in plant, machinery and equipment. All entities contributed to the Flexible Packaging JV were existing businesses acquired by an indirect subsidiary of the Company and that were reorganized under Greif Flexibles Asset Holding B.V. and Greif Flexibles Trading Holding B.V. ("Asset Co." and "Trading Co."), respectively. The Company has 51 percent ownership in Trading Co. and 49 percent ownership in Asset Co. However, the Company and GRP have equal economic interests in the Flexible Packaging JV, notwithstanding the actual ownership interests in the various legal entities.

All investments, loans and capital contributions are to be shared equally by the Company and GRP and each partner has committed to contribute capital of up to \$150.0 million and obtain third party financing for up to \$150.0 million as required.

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

<i>(in millions)</i>	October 31, 2018	October 31, 2017
Cash and cash equivalents	\$ 22.2	\$ 14.4
Trade accounts receivable, less allowance of \$0.6 in 2018 and \$2.1 in 2017	53.2	52.5
Inventories	49.0	53.3
Properties, plants and equipment, net	28.8	31.2
Other assets	21.5	25.8
Total assets	\$ 174.7	\$ 177.2
Accounts payable	\$ 29.0	\$ 33.8
Other liabilities	24.8	30.2
Total liabilities	\$ 53.8	\$ 64.0

Net income (loss) attributable to the noncontrolling interest in the Flexible Packaging JV for the years ended October 31, 2018, 2017 and 2016 were \$9.9 million, \$6.3 million and \$(8.2) million, respectively.

Non-United States Accounts Receivable VIE

As further described in Note 3, Cooperage Receivables Finance B.V. is a party to the European RPA. 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.

DRUMDRUM NV VIE

On August 31, 2016, a wholly owned indirect subsidiary of Greif, Inc. sold 51 percent of its shares in its then wholly owned subsidiary, DRUMDRUM NV for \$0.3 million.

DRUMDRUM NV is a VIE due to insufficient equity investment at risk. The Company is not the primary beneficiary of this VIE since (1) the Company does not have the power to direct the most significant activities due to its lack of ability to direct the financing, capital and operating decisions of the VIE, and (2) the Company does not have the obligation to absorb losses of the VIE that could potentially be significant to the VIE. As a result, DRUMDRUM NV was deconsolidated from the operations of the Company as of August 31, 2016. The retained noncontrolling interest of \$0.8 million as of October 31, 2018 and \$0.4 million as of October 31, 2017 is included in prepaid expenses and other current assets in the consolidated balance sheets and the Company's

share of the operations is classified in equity earnings of unconsolidated affiliates, net of tax, in the consolidated statements of income.

NOTE 8 – LONG-TERM DEBT

Long-term debt is summarized as follows:

<i>(in millions)</i>	October 31, 2018	October 31, 2017
2017 Credit Agreement - Term Loan	\$ 277.5	\$ 288.8
Senior Notes due 2019	249.1	248.0
Senior Notes due 2021	226.5	230.9
Receivables Facility	150.0	150.0
2017 Credit Agreement - Revolving Credit Facility	3.8	35.0
Other debt	0.7	6.5
	<u>907.6</u>	<u>959.2</u>
Less current portion	18.8	15.0
Less deferred financing costs	4.7	6.4
Long-term debt, net	<u>\$ 884.1</u>	<u>\$ 937.8</u>

2017 Credit Agreement

Since November 2016, the Company and certain of its international subsidiaries have been borrowers under a senior secured credit agreement (the "2017 Credit Agreement") with a syndicate of financial institutions. The 2017 Credit Agreement replaced in its entirety the \$1.0 billion senior secured credit agreement entered into on December 19, 2012, by the Company and two of its international subsidiaries ("Prior Credit Agreement") with a syndicate of financial institutions. The total available borrowing under the 2017 Credit Agreement was \$783.3 million as of October 31, 2018, which has been reduced by \$12.9 million for outstanding letters of credit, all of which was then available without violating covenants.

The 2017 Credit Agreement provides for an \$800.0 million revolving multicurrency credit facility expiring November 3, 2021, and a \$300.0 million term loan, with quarterly principal installments that commenced on April 30, 2017, through maturity on November 3, 2021, both with an option to add an aggregate of \$550.0 million to the facilities with the agreement of the lenders. The Company used the term loan on February 1, 2017, to repay the principal of the Company's \$300.0 million 6.75% Senior Notes that matured on that date. The revolving credit facility is available to fund ongoing working capital and capital expenditure needs, for general corporate purposes, and to finance acquisitions. Interest is based on either a Eurodollar rate or a base rate that resets periodically plus a calculated margin amount. On November 3, 2016, a total of approximately \$208.0 million was used to pay the obligations outstanding under the Prior Credit Agreement in full and certain costs and expenses incurred in connection with the 2017 Credit Agreement. The financing costs associated with the 2017 Credit Agreement totaled \$4.2 million as of October 31, 2018, and are recorded as a direct deduction from the long-term debt liability.

The 2017 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) the Company's net income plus depreciation, depletion, and amortization, interest expense (including capitalized interest), and income taxes, 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 ("adjusted EBITDA") to be greater than 4.00 to 1.00 (or 3.75 to 1.00, during any collateral release period). The interest coverage ratio generally requires that at the end of any fiscal quarter the Company will not permit the ratio of (a) adjusted EBITDA, to (b) the 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 2017 Credit Agreement limit the Company's ability to make "restricted payments", which include dividends and purchases, redemptions and acquisitions of equity interests of the Company. The repayment of this facility is secured by a security interest in the personal property of the Company and the personal property of certain United States 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 United States 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 Corporation,

the Company may request the release of such collateral. The payment of outstanding principal under the 2017 Credit Agreement and accrued interest thereon may be accelerated and become immediately due and payable upon the Company's default in its payment or other performance obligations or its failure to comply with the financial and other covenants in the 2017 Credit Agreement, subject to applicable notice requirements and cure periods as provided in the 2017 Credit Agreement.

As of October 31, 2018, \$281.3 million was outstanding under the 2017 Credit Agreement. The current portion of the 2017 Credit Agreement was \$18.8 million and the long-term portion was \$262.5 million. The weighted average interest rate on the 2017 Credit Agreement was 3.07% for the year ended October 31, 2018. The actual interest rate on the 2017 Credit Agreement was 3.37% as of October 31, 2018.

Senior Notes due 2019

On July 28, 2009, the Company issued \$250.0 million of 7.75% Senior Notes due August 1, 2019 (the "Senior Notes due 2019"). Interest on these Senior Notes is payable semi-annually. The financing costs associated with the Senior Notes due 2019 totaled \$0.4 million as of October 31, 2018, and are recorded as a direct deduction from the long-term liability. The \$249.1 million outstanding balance as of October 31, 2018 is reported in long-term debt in the consolidated balance sheets because the Company intends to refinance this obligation on a long-term basis by utilizing financing available under the 2017 Credit Agreement or entering into a new financing arrangement.

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. These Senior Notes are fully and unconditionally guaranteed on a senior basis by Greif, Inc. Interest on these Senior Notes is payable semi-annually.

United States Trade Accounts Receivable Credit Facility

On September 28, 2016, certain domestic subsidiaries of the Company, including Greif Receivables Funding LLC ("Greif Funding") and Greif Packaging LLC ("Greif Packaging"), entered into a receivables financing facility (the "Receivables Facility") with Cooperatieve Rabobank U.A., New York Branch ("Rabobank"), as the agent, managing agent, administrator and committed investor, and The Bank of Tokyo-Mitsubishi UFJ Ltd. as a managing agent, an administrator and a committed investor, by executing and delivering the Second Amended and Restated Transfer and Administration Agreement (the "Second Amended TAA"). The Second Amended TAA was renewed on September 26, 2018, to extend the facility through September 26, 2019. The maximum amount available to be borrowed under the Receivables Facility is \$150.0 million, subject to the amounts of eligible receivables. The financing costs associated with the Receivables Facility are \$0.1 million as of October 31, 2018, and are recorded as a direct deduction from the long-term debt liability.

Greif Funding is a direct subsidiary of Greif Packaging and is included in the Company's consolidated financial statements. However, because Greif Funding is a separate and distinct legal entity from the Company, the assets of Greif Funding are not available to satisfy the liabilities and obligations of the Company, Greif Packaging or other subsidiaries of the Company, and the liabilities of Greif Funding are not the liabilities or obligations of the Company or its other subsidiaries.

The Second Amended TAA, as amended, provides for the ongoing purchase by Rabobank and The Bank of Tokyo-Mitsubishi UFJ Ltd. of receivables from Greif Funding, which Greif Funding will have purchased from Greif Packaging and certain other domestic subsidiaries of the Company as the originators under the Second Amended and Restated Sale Agreement, dated as of September 28, 2016 (the "Second Amended Sale Agreement"). Greif Packaging will service and collect on behalf of Greif Funding those receivables sold to Greif Funding under the Second Amended Sale Agreement. The maturity date of the Receivables Facility is September 26, 2019, subject to earlier termination as provided in the Second Amended TAA, including acceleration upon an event of default as provided therein, or such later date to which the purchase commitment may be extended by agreement of the parties. In addition, Greif Funding can terminate the Receivables Facility at any time upon five days prior written notice. The Company has guaranteed the performance by Greif Funding, Greif Packaging and its other participating subsidiaries of their respective obligations under the Second Amended TAA, as amended, the Second Amended Sale Agreement and related agreements, but has not guaranteed the collectability of the receivables. A significant portion of the proceeds from the Receivables Facility were used to pay the obligations under the prior receivables facility. The remaining proceeds are to be used to pay certain fees, costs and expenses incurred in connection with the Receivables Facility and for working capital and general corporate purposes.

The Receivables Facility is secured by certain trade accounts receivables relating to the Rigid Industrial Packaging and Paper Packaging & Services businesses of Greif Packaging and other domestic subsidiaries of the Company in the United States and bears interest at a variable rate based on the London Interbank Offered Rate or an applicable base rate, plus a margin, or a commercial paper rate plus a margin, all as provided in the Second Amended TAA, as amended. Interest is payable on a monthly basis and the

principal balance is payable upon termination of the Receivables Facility. The Company intends to refinance this 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.

Other

In addition to the amounts borrowed under the 2017 Credit Agreement and proceeds from the Senior Notes and the Receivables Facility, as of October 31, 2018, the Company had outstanding other debt of \$0.7 million in long-term debt and \$7.3 million in short-term borrowings, compared to other debt of \$6.5 million in long-term debt and \$14.5 million in short-term borrowings, as of October 31, 2017. There are no financial covenants associated with this other debt.

As of October 31, 2018, annual maturities, including the current portion of long-term debt, were \$417.9 million in 2019, \$30.0 million in 2020, \$249.3 million in 2021, \$210.1 million in 2022, zero in 2023 and \$0.3 million thereafter.

NOTE 9 – FINANCIAL INSTRUMENTS AND FAIR VALUE MEASUREMENTS
Recurring Fair Value Measurements

The following table presents the fair value of those assets and (liabilities) measured on a recurring basis as of October 31, 2018 and 2017:

<i>(in millions)</i>	October 31, 2018				Balance Sheet Location
	Fair Value Measurement				
	Level 1	Level 2	Level 3	Total	
Interest rate derivatives	\$ —	\$ 16.5	\$ —	\$ 16.5	Other long-term assets and other current 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 long-term assets and other current assets
Total	\$ —	\$ 23.6	\$ 20.4	\$ 44.0	

<i>(in millions)</i>	October 31, 2017				Balance Sheet Location
	Fair Value Measurement				
	Level 1	Level 2	Level 3	Total	
Interest rate derivatives	\$ —	\$ 8.9	\$ —	\$ 8.9	Other long-term assets and other current assets
Foreign exchange hedges	—	0.1	—	0.1	Other current assets
Foreign exchange hedges	—	(0.6)	—	(0.6)	Other current liabilities
Insurance annuity	—	—	20.7	20.7	Other long-term assets
Total	\$ —	\$ 8.4	\$ 20.7	\$ 29.1	

The carrying amounts of cash and cash equivalents, trade accounts receivable, notes receivable, accounts payable, current liabilities and short-term borrowings as of October 31, 2018 and 2017 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 incur interest based on the one month U.S. dollar LIBOR rate plus an interest spread. During the first quarter of 2017, the Company entered into a forward 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 was obligated to pay interest at a fixed rate of 1.194% plus an interest spread. This effectively converted the borrowing rate on \$300.0 million of debt from a variable rate to a fixed rate. This derivative is designated as a cash flow hedge for accounting purposes. Accordingly, the gain or loss on this derivative instrument is reported as a component of other comprehensive income and reclassified into earnings in the same line item associated with the forecasted transaction and in the same period during which the hedged transaction affects earnings. For additional disclosures of the gain or loss included within other comprehensive income, see Note 18 to these consolidated financial statements. The assumptions used in measuring fair value of the interest rate derivative are considered level 2 inputs, which are based upon 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 \$1.8 million for the year ended October 31, 2018, and losses reclassified to earnings under these contracts were \$0.3 million for the year ended October 31, 2017. A derivative gain of \$4.6 million, based upon interest rates at October 31, 2018, is expected to be reclassified from accumulated other comprehensive income (loss) 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 October 31, 2018, the Company had outstanding foreign currency forward contracts in the notional amount of \$194.4 million (\$80.1 million as of October 31, 2017). 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 were based on observable market pricing for similar instruments, principally foreign exchange futures contracts.

Realized losses recorded in other expense, net under fair value contracts were \$9.2 million, \$1.8 million and \$2.7 million for the years ended October 31, 2018, 2017 and 2016, respectively. The Company recognized in other expense, net an unrealized net gain of \$1.9 million during the year ended October 31, 2018. The Company recognized in other expense, net an unrealized net loss of \$0.5 million and zero in the years ended October 31, 2017 and 2016, 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 2.352%. 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 consolidated statements of income. For the year ended October 31, 2018, gains recorded in interest expense, net under the cross currency swap agreement were \$1.6 million. For additional disclosure of the gain or loss included within other comprehensive income, see Note 18. 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 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 for the Company's Senior Notes and Assets held by special purpose entities:

<i>(in millions)</i>	October 31, 2018	October 31, 2017
Senior Notes due 2019 estimated fair value	\$ 257.4	\$ 272.0
Senior Notes due 2021 estimated fair value	263.4	281.0
Assets held by special purpose entities estimated fair value	51.6	52.5

Pension Plan Assets

On an annual basis the Company compares the asset holdings of its pension plan to targets it previously established. The pension plan assets are categorized as equity securities, debt securities, fixed income securities, insurance annuities or other assets, which are considered level 1, level 2 and level 3 fair value measurements. The typical asset holdings include:

- Common Stock: Valued based on quoted prices and are primarily exchange-traded.
- Mutual funds: Valued at the Net Asset Value "NAV" available daily in an observable market.
- Common collective trusts: Unit value calculated based on the observable NAV of the underlying investment.
- Pooled separate accounts: Unit value calculated based on the observable NAV of the underlying investment.
- Government and corporate debt securities: Valued based on readily available inputs such as yield or price of bonds of comparable quality, coupon, maturity and type.
- Insurance annuity: Value is derived based on the value of the corresponding liability.

Non-Recurring Fair Value Measurements

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 twelve months ended October 31, 2018 and 2017:

<i>(in millions)</i>	Quantitative Information about Level 3 Fair Value Measurements			
	Fair Value of Impairment	Valuation Technique	Unobservable Input	Range of Input Values
October 31, 2018				
Impairment of Net Assets Held for Sale	\$ 0.7	Broker Quote / Indicative Bids	Indicative Bids	N/A
Impairment of Long Lived Assets	7.6	Sales Value	Sales Value	N/A
Total	<u>\$ 8.3</u>			
October 31, 2017				
Impairment of Net Assets Held for Sale	\$ 5.6	Broker Quote / Indicative Bids	Indicative Bids	N/A
Impairment of Long Lived Assets	2.2	Sales Value	Sales Value	N/A
Total	<u>\$ 7.8</u>			

Long-Lived Assets

During the year ended October 31, 2018, the Company wrote down long-lived assets with a carrying value of \$10.7 million to a fair value of \$3.1 million, resulting in recognized asset impairment charges of \$7.6 million. The \$7.6 million of impairment charges is all related to properties, plants and equipment, net, in the Rigid Industrial Packaging & Services segment.

During the year ended October 31, 2017, the Company wrote down long-lived assets with a carrying value of \$3.8 million to a fair value of \$1.6 million, resulting in recognized asset impairment charges of \$2.2 million. These charges include \$1.9 million related to properties, plants and equipment, net, in the Rigid Industrial Packaging & Services segment and \$0.3 million of properties, plants and equipment, net, in the Flexible Products & Services segment.

During the year ended October 31, 2016, the Company wrote down long-lived assets with a carrying value of \$19.2 million to a fair value of \$5.4 million, resulting in recognized asset impairment charges of \$13.8 million. These charges include \$8.6 million related to properties, plants and equipment, net, in the Rigid Industrial Packaging & Services segment, \$3.7 million of properties, plants and equipment, net, in the Flexible Products & Services segment, and \$1.5 million related to a cost method investment in the Paper Packaging & Services segment.

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.

Assets and Liabilities Held for Sale

During the year ended October 31, 2018, the Company wrote down the assets and liabilities of one asset group that was held for sale with a carrying value of \$2.9 million to a fair value of \$2.2 million, resulting in recognized asset impairment charges of \$0.7 million for goodwill allocated to the business classified as held for sale.

During the year ended October 31, 2017, the Company wrote down the assets and liabilities of one asset group that was held for sale with a carrying value of \$69.2 million to a fair value of \$63.6 million, resulting in recognized asset impairment charges of \$5.6 million for goodwill allocated to the business classified as held for sale. Additionally during the year ended October 31, 2017, one asset group that was classified as held for sale at October 31, 2016 was reclassified to held and used at net realizable value, resulting in no impairment.

During the year ended October 31, 2016, the Company wrote down assets and liabilities held for sale with a carrying value of \$70.6 million to a fair value of \$33.0 million, resulting in recognized asset impairment charges of \$37.6 million. During the year ended October 31, 2016, three asset groups were reclassified to assets and liabilities held for sale, resulting in a \$23.6 million

impairment to net realizable value. Included in that impairment was \$9.1 million of goodwill allocated to the business classified as held for sale.

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.

Goodwill and Indefinite-Lived Intangibles

On an annual basis or when events or circumstances indicate impairment may have occurred, the Company performs impairment tests for goodwill and indefinite-lived intangibles as defined under ASC 350, "Intangibles-Goodwill and Other." There was no goodwill impairment for the year ended October 31, 2018. On August 1, 2017, the Company concluded that the carrying amount of the Rigid Industrial Packaging & Services – Latin America reporting unit exceeded the fair value of the reporting unit and the goodwill of Rigid Industrial Packaging & Services – Latin America of \$13.0 million was fully impaired. The Company concluded that no such impairment existed as of October 31, 2016 under the former reporting unit structure.

NOTE 10 – STOCK-BASED COMPENSATION

Stock-based compensation is accounted for in accordance with ASC 718, "Compensation – Stock Compensation," which requires companies to estimate the fair value of share-based awards on the date of grant using an option-pricing model. The Company maintains two stock-based compensation plans, the 2001 Management Equity Incentive and Compensation Plan (the "2001 Plan") and the 2005 Outside Directors Equity Award Plan (the "2005 Directors Plan") however no stock options were granted in 2018, 2017 or 2016. No shares were forfeited or exercised in 2018, 2017 or 2016.

The Company's Amended and Restated Long Term Incentive Plan ("Long Term Incentive Plan") is intended to focus management on the key measures that drive superior performance over the longer term. The Long Term Incentive Plan is based on three-year performance periods that commence at the start of every fiscal year. For each three-year performance period, the performance goals are based on targeted levels of earnings before interest, taxes, depreciation, depletion and amortization as determined by the Special Subcommittee of the Company's Compensation Committee of the Board of Directors (the "Special Subcommittee"). Participants are paid 50% in cash and 50% in restricted shares of the Company's Class A and/or Class B Common Stock, as determined by the Special Subcommittee.

The Company granted 85,469 shares of restricted stock with a grant date fair value of \$62.20 under the Company's Long Term Incentive Plan for 2018. The total stock expense recorded under the Long Term Incentive Plan was \$5.3 million, \$1.7 million and \$1.5 million for the periods ended October 31, 2018, 2017 and 2016, respectively. All restricted stock awards under the Long Term Incentive Plan are fully vested at the date of award.

Under the Company's 2005 Directors Plan, the Company granted 20,529 shares of restricted stock with a grant date fair value of \$59.18 in 2018. The Company granted 19,368 shares of restricted stock with a grant date fair value of \$58.08 under the Company's 2005 Directors Plan in 2017. The total expense recorded under the plan was \$1.2 million, \$1.1 million and \$1.1 million for the periods ended October 31, 2018, 2017, and 2016, respectively. All restricted stock awards under the 2005 Directors Plan are fully vested at the date of award.

During 2014, the Company awarded an officer, as part of the terms of his initial employment arrangement, 15,000 shares of Class A Common Stock under the 2001 Plan. These shares were issued subject to vesting and post-vesting restrictions on the sale or transfer until May 12, 2019. These shares fully vested in equal installments of 5,000 on May 12, 2015, 2016 and 2017. Share-based compensation expense was \$0.1 million, and \$0.2 million, for the periods ended October 31, 2017 and 2016, respectively.

The total stock compensation expenses recorded under the plans were \$6.5 million, \$2.9 million and \$2.8 million for the periods ended October 31, 2018, 2017 and 2016 respectively.

NOTE 11 – INCOME TAXES

On December 22, 2017, the President of the United States signed into law the Tax Cuts and Jobs Act of 2017 (the "Tax Reform Act"). The legislation significantly changed U.S. tax law by, among other items, (1) lowering the corporate income tax rate from 35% to 21%, effective January 1, 2018; (2) allowing for the acceleration of expensing of qualified business assets; (3) requiring companies to pay a one-time transition tax on certain unremitted earnings of foreign subsidiaries that may be payable over eight years; (4) a new limitation on deductible interest expense; (5) limitations on the deductibility of certain executive compensation; and (6) eliminating U.S. federal income tax on dividends from foreign subsidiaries. The corporate income tax rate change was

administratively effective as of the beginning of the Company's fiscal 2018 year. Therefore, the Company used a blended statutory rate for fiscal 2018 of 23.33% on U.S. earnings.

The SEC staff issued Staff Accounting Bulletin No. 118 ("SAB 118") to address the application of U.S. GAAP in situations when a registrant does not have the necessary information available, prepared, or analyzed (including computations) in reasonable detail to complete the accounting for certain income tax effects of the Tax Reform Act. The Bulletin also provides for a measurement period that should not extend beyond one year from the U.S. Tax Reform enactment date. In accordance with the Bulletin, the Company recorded a provisional estimate of the revaluation of deferred tax assets and liabilities of \$69.3 million in the third quarter of 2018. Due to the consideration of full year financial information and additional analysis of the Tax Reform Act, the Company revised its calculation and recorded the tax benefit related to the revaluation of deferred tax assets and liabilities of \$72.0 million as of October 31, 2018. The Company considers the accounting for this element of the Tax Reform Act to be complete. As of October 31, 2018, our accounting for U.S. Tax Reform for the transition tax liability remains provisional. In the third quarter of 2018, the Company had recorded a provisional tax expense as a result of the accrual for the transition tax liability of \$35.9 million. As a result of additional analysis and support related to the Tax Reform Act, the Company revised its calculation and recorded a provisional tax expense for the transition tax liability of \$52.8 million as of October 31, 2018. Adjustments to the transition tax provisional estimate will be recorded and disclosed prospectively during the measurement period and may differ from this provisional amount, due to, among other things, additional analyses, changes in interpretations and assumptions the Company has made, additional regulatory guidance that may be issued, and actions the Company may take as a result of the Tax Reform Act.

In addition, the Act also establishes new tax provisions that will affect the Company beginning November 1, 2018, including (1) eliminating the U.S. manufacturing deduction; (2) establishing new limitations on deductible interest expense and certain executive compensation; (3) creating the base erosion anti-abuse tax ("BEAT"); (4) creating a new provision designed to tax global intangible low-tax income ("GILTI"); (5) establishing a deduction for foreign-derived intangible income ("FDII"); and (6) generally eliminating U.S. federal income taxes on dividends from foreign subsidiaries. Regarding the new GILTI tax rules, the Company is allowed to make an accounting policy election to either (1) treat taxes due on future GILTI exclusions in U.S. taxable income as a current period expense when incurred or (2) reflect such portion of the future GILTI exclusions in U.S. taxable income that relate to existing basis differences in the Company's measurement of deferred taxes. The Company's analysis of the new GILTI rules and ultimate impact are incomplete and the Company has not made a policy election regarding the treatment of the GILTI tax.

With respect to the pre October 31, 2016 undistributed foreign earnings, the Company is permanently reinvested as defined under ASC 740-30-25-1. For earnings post October 31, 2016, the Company is not permanently reinvested with respect to the earnings of the controlled foreign corporations.

During 2017, the Company started recording a deferred tax liability for earnings after October 31, 2016 with respect to the foreign unremitted earnings, generally based on foreign jurisdiction withholding taxes. With respect to U.S. taxes on undistributed earnings, post October 31, 2017, as a result of the Tax Reform Act, the Company should not incur any additional U.S. taxes on such distributions.

The provision for income taxes consists of the following:

<i>(in millions)</i>	Year Ended October 31,		
	2018	2017	2016
Current			
Federal	\$ 74.0	\$ 33.0	\$ 20.3
State and local	8.0	6.0	4.4
Non-U.S.	36.1	25.9	40.3
	<u>118.1</u>	<u>64.9</u>	<u>65.0</u>
Deferred			
Federal	(45.2)	4.5	0.5
State and local	0.8	(2.0)	0.5
Non-U.S.	(0.4)	(0.2)	0.5
	<u>(44.8)</u>	<u>2.3</u>	<u>1.5</u>
	<u>\$ 73.3</u>	<u>\$ 67.2</u>	<u>\$ 66.5</u>

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The non-U.S. income before income tax expense was \$102.3 million, \$85.2 million and \$49.9 million in 2018, 2017, and 2016, respectively. The U.S. income before income tax was \$197.5 million, \$115.1 million and \$91.3 million in 2018, 2017, and 2016, respectively.

The following is a reconciliation of the provision for income taxes based on the federal statutory rate to the Company's effective income tax rate:

	Year Ended October 31,		
	2018	2017	2016
Federal statutory rate	23.33 %	35.00 %	35.00 %
Impact of foreign tax rate differential	(0.57)%	(9.86)%	(11.15)%
State and local taxes, net of federal tax benefit	2.38 %	1.35 %	2.19 %
Net impact of changes in valuation allowances	5.65 %	20.74 %	1.91 %
Non-deductible write-off and impairment of goodwill and other intangible assets	0.06 %	(0.02)%	7.37 %
Unrecognized tax benefits	3.41 %	(2.00)%	4.84 %
Permanent book-tax differences	(4.03)%	(15.71)%	(4.78)%
Withholding taxes	1.84 %	1.88 %	4.64 %
Tax Reform Act ⁽¹⁾	(7.31)%	— %	— %
Other items, net	(0.33)%	2.20 %	7.08 %
	<u>24.43 %</u>	<u>33.58 %</u>	<u>47.10 %</u>

⁽¹⁾Reflects the net impact of the change in deferred tax assets and liabilities and the estimated transition tax resulting from the Tax Reform Act.

The primary items which decreased the Company's effective income tax rate from the federal statutory rate in 2018 was the remeasurement of the domestic deferred tax liabilities, net of the transition tax liability due to the Tax Reform Act, and permanent book-tax differences; offset primarily by increases in valuation allowances and unrecognized tax benefits.

The primary items which decreased the Company's effective income tax rate from the federal statutory rate in 2017 were permanent book-tax differences, unrecognized tax benefits, the impact of foreign tax rates that differ from the federal statutory tax rate, and other immaterial items; offset primarily by increases in valuation allowances. Also, in 2017, the Company included in the table above a \$38.6 million and 19.26% change in valuation allowance, with offsetting amounts in permanent book-tax differences, for certain intercompany financing transactions.

The primary items which increased the Company's effective income tax rate from the federal statutory rate in 2016 were non-deductible expenses, such as the write-off of goodwill allocated to divestitures and impairments, withholding taxes, unrecognized tax benefits, state and local taxes, net of federal tax benefit, the net impact of changes in valuation allowances due to changes in circumstances in several legal entities and other tax items. Cumulatively, these items impacted the 2016 effective income tax rate by approximately 28.0 percent. This increase was offset by the impact of foreign tax rates and permanent book-tax differences, which decreased the effective income tax rate by approximately 15.9 percent in 2016.

The components of the Company's deferred tax assets and liabilities as of October 31 for the years indicated were as follows:

<i>(in millions)</i>	2018	2017
Deferred Tax Assets		
Net operating loss and other carryforwards	\$ 122.8	\$ 116.4
Foreign tax credits	20.7	5.1
Pension liabilities	12.2	38.8
Incentive liabilities	12.1	14.7
Workers compensation accruals	6.6	4.5
Inventories	4.9	7.6
State income taxes	4.5	7.1
Deferred compensation	2.2	4.2
Other	16.5	30.0
Total Deferred Tax Assets	202.5	228.4
Valuation allowance	(157.2)	(132.4)
Net Deferred Tax Assets	\$ 45.3	\$ 96.0
Deferred Tax Liabilities		
Properties, plants and equipment	\$ 78.9	\$ 99.1
Timberland transactions	73.5	113.5
Goodwill and other intangible assets	49.2	74.0
Other	15.6	16.7
Total Deferred Tax Liabilities	217.2	303.3
Net Deferred Tax Liability	\$ 171.9	\$ 207.3

As of October 31, 2018 and 2017 respectively, the Company had deferred income tax benefits of \$122.8 million and \$116.4 million from net operating loss carryforwards, almost all of which were related to non-US operations. The Company has recorded valuation allowances of \$137.1 million and \$127.3 million against non-US deferred tax assets as of October 31, 2018 and 2017 respectively. The Company has also recorded valuation allowances of \$20.1 million and \$5.1 million, as of October 31, 2018 and 2017, respectively, against U.S. deferred tax assets. The Company had net changes in valuation allowances in 2018 of \$24.8 million, resulting in a net increase of 11.66% in the effective tax rate related to these changes.

A reconciliation of the beginning and ending amount of unrecognized tax benefits is as follows:

<i>(in millions)</i>	2018	2017	2016
Balance at November 1	\$ 26.8	\$ 29.7	\$ 29.6
Increases in tax positions for prior years	7.8	2.1	5.7
Decreases in tax positions for prior years	(1.4)	(1.8)	(10.5)
Increases in tax positions for current years	8.0	6.7	6.9
Settlements with taxing authorities	—	(7.4)	—
Lapse in statute of limitations	(3.6)	(4.6)	(2.6)
Currency translation	(1.4)	2.1	0.6
Balance at October 31	\$ 36.2	\$ 26.8	\$ 29.7

The 2018 net increase is primarily related to decreases related to the settlement of prior years' tax audits and lapse in statute of limitations, offset by increases in unrecognized tax benefits related to prior years and the current year. The Company files income tax returns in the U.S. federal jurisdiction, various U.S. state jurisdictions and various non-U.S. jurisdictions and is subject to audit by various taxing authorities for 2012 through the current fiscal year. The Company has completed its U.S. federal tax audit for the tax years through 2013.

The October 31, 2018, 2017, 2016 balances include \$36.2 million, \$26.8 million and \$28.5 million, respectively, of unrecognized tax benefits that, if recognized, would have an impact on the effective tax rate. The Company also recognizes accrued interest and penalties related to unrecognized tax benefits in income tax expense net of tax, as applicable. As of October 31, 2018 and October 31, 2017, the Company had \$4.9 million and \$3.7 million, respectively, accrued for the payment of interest and penalties.

The Company has estimated the reasonably possible expected net change in unrecognized tax benefits through October 31, 2018 under ASC 740. The Company's estimate is based on lapses of the applicable statutes of limitations, settlements and payments of uncertain tax positions. The estimated net decrease in unrecognized tax benefits for the next 12 months ranges from zero to \$3.0 million. Actual results may differ materially from this estimate.

NOTE 12 – POST RETIREMENT BENEFIT PLANS

Defined Benefit Pension Plans

The Company has certain non-contributory defined benefit pension plans for salaried and hourly employees in the United States, Canada, Germany, the Netherlands, South Africa and the United Kingdom. The Company uses a measurement date of October 31 for fair value purposes for its pension plans. The salaried employees plans' benefits are based primarily on years of service and earnings. The hourly employees plans' benefits are based primarily upon years of service, and certain benefit provisions are subject to collective bargaining. The Company contributes an amount that is not less than the minimum funding and not more than the maximum tax-deductible amount to these plans. Salaried employees in the United States who commence service on or after November 1, 2007 and, with respect to such plans outside the U.S., salaried employees outside the U.S. who commence service on various dates in the preceding five years are not eligible to participate in the defined benefit pension plans, but are eligible to participate in a defined contribution retirement program. The category "Other International" represents the noncontributory defined benefit pension plans in Canada and South Africa.

Pension plan contributions by the Company totaled \$85.5 million during 2018, which consisted of \$81.7 million of employer contributions and \$3.8 million of benefits paid directly by the Company. Pension plan contributions, including benefits paid directly by the Company, totaled \$14.4 million and \$20.6 million during 2017 and 2016, respectively. Contributions, including benefits paid directly by the Company, during 2019 are expected to be approximately \$14.3 million.

The following table presents the number of participants in the defined benefit plans:

October 31, 2018	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Active participants	1,332	1,214	47	—	71	—
Vested former employees and deferred members	1,433	790	85	419	95	44
Retirees and beneficiaries	2,389	942	253	699	441	54
October 31, 2017	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Active participants	1,442	1,306	67	—	69	—
Vested former employees and deferred members	1,442	804	72	431	89	46
Retirees and beneficiaries	2,421	925	254	699	488	55

The actuarial assumptions are used to measure the year-end benefit obligations as of October 31, 2018 and the pension costs for the subsequent year were as follows:

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For the year ended October 31, 2018	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Discount rate	3.48%	4.59%	1.80%	2.50%	1.64%	4.84%
Expected return on plan assets	4.53%	6.25%	N/A	3.60%	1.45%	5.69%
Rate of compensation increase	2.85%	3.00%	2.75%	N/A	2.25%	N/A
For the year ended October 31, 2017	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Discount rate	3.01%	3.79%	1.72%	2.37%	1.55%	4.46%
Expected return on plan assets	5.39%	6.25%	N/A	6.00%	1.20%	5.70%
Rate of compensation increase	2.87%	3.00%	2.75%	N/A	2.25%	N/A
For the year ended October 31, 2016	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Discount rate	3.08%	3.79%	1.50%	2.44%	1.32%	4.31%
Expected return on plan assets	5.51%	6.25%	N/A	6.00%	1.88%	5.77%
Rate of compensation increase	2.87%	3.00%	2.75%	N/A	2.25%	N/A

The discount rate is determined by developing a hypothetical portfolio of individual high-quality corporate bonds available at the measurement date, the coupon and principal payments of which would be sufficient to satisfy the plans' expected future benefit payments as defined for the projected benefit obligation. The discount rate by country is equivalent to the average yield on that hypothetical portfolio of bonds and is a reflection of current market settlement rates on such high quality bonds, government treasuries, and annuity purchase rates. To determine the expected long-term rate of return on pension plan assets, the Company considers current and expected asset allocations, as well as historical and expected returns on various categories of plan assets. In developing future return expectations for the defined benefit pension plans' assets; the Company formulates views on the future economic environment, both in the U.S. and globally. The Company evaluates general market trends and historical relationships among a number of key variables that impact asset class returns, such as expected earnings growth, inflation, valuations, yields and spreads, using both internal and external sources. The Company takes into account expected volatility by asset class and diversification across classes to determine expected overall portfolio results given current and expected allocations. The Company uses published mortality tables for determining the expected lives of plan participants and believe that the tables selected are most-closely associated with the expected lives of plan participants as the tables are based on the country in which the participant is employed.

Based on the Company's analysis of future expectations of asset performance, past return results, and its current and expected asset allocations, the Company has assumed a 4.53% long-term expected return on those assets for cost recognition in 2018. For the defined benefit pension plans, the Company applies its expected rate of return to a market-related value of assets, which stabilizes variability in the amounts to which the Company applies that expected return.

The Company amortizes experience gains and losses as well as the effects of changes in actuarial assumptions and plan provisions over a period no longer than the average future service of employees.

During the year ended October 31, 2018, in the United Kingdom, lump sum payments totaling \$4.7 million were made from the defined benefit plan assets to certain participants who agreed to such payments representing the current fair value of the participant's respective pension benefit. These lump sum payments resulted in a non-cash pension settlement charge of \$1.3 million for the year ended October 31, 2018.

During the year ended October 31, 2017, in the United States, an annuity contract for approximately \$49.2 million was purchased with defined benefit plan assets, and the pension obligation for certain retirees was irrevocably transferred from that plan to the annuity contract. Additionally, lump sum payments totaling \$45.2 million were made from the defined benefit plan assets to certain participants who agreed to such payments, representing the current fair value of the participant's respective pension benefit. The settlement items described above resulted in a decrease in the fair value of plan assets and the projected benefit obligation of \$94.4 million and a non-cash pension settlement charge of \$25.9 million of unrecognized net actuarial loss that was included in accumulated other comprehensive loss. Additionally, in the United Kingdom, lump sum payments totaling \$7.3 million were made from the defined benefit plan assets to certain participants who agreed to such payments, representing the current fair value of the participant's respective pension benefit. These lump sum payments resulted in a non-cash pension settlement charge of \$1.2 million of unrecognized net actuarial loss that was included in accumulated other comprehensive loss. Finally, \$1.8 million of projected benefit obligation for certain retirees in Germany was irrevocably transferred to a third-party buyer through the sale of a business resulting in \$0.7 million of unrecognized net actuarial loss that was included in accumulated other comprehensive loss that was recognized as a loss on sale of business.

Benefit Obligations

The components of net periodic pension cost include the following:

For the year ended October 31, 2018

<i>(in millions)</i>	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Service cost	\$ 12.3	\$ 10.8	\$ 0.4	\$ 0.5	\$ 0.5	\$ 0.1
Interest cost	18.9	13.2	0.5	4.0	0.9	0.3
Expected return on plan assets	(25.5)	(16.8)	—	(6.5)	(1.4)	(0.8)
Amortization of prior service cost	(0.2)	(0.1)	—	—	(0.1)	—
Recognized net actuarial loss	11.0	8.1	1.1	1.7	—	0.1
Other Adjustments	2.8	—	—	2.8	—	—
Special Events						
Settlement	1.3	—	—	1.3	—	—
Net periodic pension (benefit) cost	\$ 20.6	\$ 15.2	\$ 2.0	\$ 3.8	\$ (0.1)	\$ (0.3)

For the year ended October 31, 2017

<i>(in millions)</i>	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Service cost	\$ 13.3	\$ 11.8	\$ 0.5	\$ 0.5	\$ 0.4	\$ 0.1
Interest cost	18.2	12.9	0.5	3.8	0.7	0.3
Expected return on plan assets	(27.7)	(15.6)	—	(10.2)	(1.2)	(0.7)
Amortization of prior service cost	(0.1)	—	—	—	(0.1)	—
Recognized net actuarial loss	10.9	8.1	1.3	1.5	—	—
Special Events						
Settlement*	27.8	25.9	0.7	1.2	—	—
Net periodic pension (benefit) cost	\$ 42.4	\$ 43.1	\$ 3.0	\$ (3.2)	\$ (0.2)	\$ (0.3)

*Includes \$0.7M that was recorded as a loss on sale of business

For the year ended October 31, 2016

<i>(in millions)</i>	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Service cost	\$ 12.4	\$ 10.2	\$ 0.5	\$ 0.8	\$ 0.7	\$ 0.2
Interest cost	22.0	13.7	0.8	5.7	1.4	0.4
Expected return on plan assets	(32.1)	(19.0)	—	(10.7)	(1.7)	(0.7)
Amortization of prior service cost	(0.2)	(0.1)	—	—	(0.1)	—
Recognized net actuarial loss	11.4	9.3	1.0	0.8	0.3	—
Special Events						
Settlement	0.1	\$ —	\$ —	\$ —	\$ —	\$ 0.1
Net periodic pension (benefit) cost	\$ 13.6	\$ 14.1	\$ 2.3	\$ (3.4)	\$ 0.6	\$ —

Benefit obligations are described in the following tables. Accumulated and projected benefit obligations (ABO and PBO) represent the obligations of a pension plan for past service as of the measurement date. ABO is the present value of benefits earned to date with benefits computed based on current compensation levels. PBO is ABO increased to reflect expected future compensation.

The following table sets forth the plans' change in projected benefit obligation:

For the year ended October 31, 2018

<i>(in millions)</i>	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Change in benefit obligation:						
Benefit obligation at beginning of year	\$ 717.8	\$ 387.6	\$ 39.9	\$ 186.9	\$ 91.8	\$ 11.6
Service cost	12.3	10.8	0.4	0.5	0.5	0.1
Interest cost	18.9	13.2	0.5	4.0	0.9	0.3
Plan participant contributions	0.2	—	—	—	0.2	—
Expenses paid from assets	(1.7)	(1.0)	—	(0.6)	—	(0.1)
Plan Amendments	3.3	—	—	3.5	(0.2)	—
Actuarial gain	(39.1)	(33.5)	(0.5)	(3.9)	(0.9)	(0.3)
Foreign currency effect	(7.1)	—	(0.8)	(4.3)	(1.7)	(0.3)
Benefits paid	(42.2)	(25.2)	(1.4)	(9.8)	(5.2)	(0.6)
Benefit obligation at end of year	\$ 662.4	\$ 351.9	\$ 38.1	\$ 176.3	\$ 85.4	\$ 10.7

For the year ended October 31, 2017

<i>(in millions)</i>	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Change in benefit obligation:						
Benefit obligation at beginning of year	\$ 783.8	\$ 470.2	\$ 41.8	\$ 171.4	\$ 90.1	\$ 10.3
Service cost	13.3	11.8	0.5	0.5	0.4	0.1
Interest cost	18.2	12.9	0.5	3.8	0.7	0.3
Plan participant contributions	0.2	—	—	—	0.2	—
Expenses paid from assets	(3.4)	(2.6)	—	(0.8)	0.1	(0.1)
Plan Amendments	(0.2)	—	—	—	(0.2)	—
Actuarial (gain) loss	13.2	4.7	(2.4)	10.5	(0.6)	1.0
Foreign currency effect	22.4	—	2.5	13.7	5.7	0.5
Benefits paid	(26.2)	(15.0)	(1.2)	(4.9)	(4.6)	(0.5)
Settlements	(101.7)	(94.4)	—	(7.3)	—	—
Business divestiture	(1.8)	—	(1.8)	—	—	—
Benefit obligation at end of year	\$ 717.8	\$ 387.6	\$ 39.9	\$ 186.9	\$ 91.8	\$ 11.6

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The following tables set forth the PBO, ABO, plan assets and instances where the ABO exceeds the plan assets for the respective years:

Actuarial value of benefit obligations

<i>(in millions)</i>	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
October 31, 2018						
Projected benefit obligation	\$ 662.4	\$ 351.9	\$ 38.1	\$ 176.3	\$ 85.4	\$ 10.7
Accumulated benefit obligation	638.9	330.4	37.2	176.3	84.3	10.7
Plan assets	594.8	311.9	—	178.7	90.6	13.6
October 31, 2017						
Projected benefit obligation	\$ 717.8	\$ 387.6	\$ 39.9	\$ 186.9	\$ 91.8	\$ 11.6
Accumulated benefit obligation	686.8	362.0	38.1	186.9	88.3	11.5
Plan assets	568.6	268.6	—	188.9	97.5	13.6
Plans with ABO in excess of Plan assets						
October 31, 2018						
Accumulated benefit obligation	\$ 171.1	\$ 28.8	\$ 37.2	\$ 104.6	\$ —	\$ 0.5
Plan assets	94.7	—	—	94.2	—	0.5
October 31, 2017						
Accumulated benefit obligation	\$ 522.9	\$ 362.0	\$ 38.1	\$ 111.3	\$ —	\$ 11.5
Plan assets	379.7	268.6	—	100.3	—	10.8

Future benefit payments for the Company's global plans, which reflect expected future service, as appropriate, during the next five years, and in the aggregate for the five years thereafter, are as follows:

<i>(in millions)</i>	Expected Benefit Payments
Year(s)	
2019	\$ 39.2
2020	36.7
2021	37.9
2022	39.5
2023	42.4
2024-2028	206.1

Plan assets

The plans' assets consist of U.S. and non-U.S. equity securities, government and corporate bonds, cash, insurance annuity mutual funds and not more than the allowable number of shares of the Company's common stock, which was 247,504 Class A shares and 160,710 Class B shares at October 31, 2018 and 247,507 Class A shares and 160,710 Class B shares at October 31, 2017.

The investment policy reflects the long-term nature of the plans' funding obligations. The assets are invested to provide the opportunity for both income and growth of principal. This objective is pursued as a long-term goal designed to provide required benefits for participants without undue risk. It is expected that this objective can be achieved through a well-diversified asset portfolio. All equity investments are made within the guidelines of quality, marketability and diversification mandated by the Employee Retirement Income Security Act and/or other relevant statutes. Investment managers are directed to maintain equity portfolios at a risk level approximately equivalent to that of the specific benchmark established for that portfolio.

The Company's weighted average asset allocations at the measurement date and the target asset allocations by category are as follows:

Asset Category	2018 Target	2018 Actual	2017 Target	2017 Actual
Equity securities	15%	21%	22%	24%
Debt securities	63%	50%	49%	44%
Other	22%	29%	29%	32%
Total	100%	100%	100%	100%

The fair value of the pension plans' investments is presented below. The inputs and valuation techniques used to measure the fair value of the assets are consistently applied and described in Note 9.

For the year ended October 31, 2018

<i>(in millions)</i>	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Change in plan assets:						
Fair value of plan assets at beginning of year	\$ 568.6	\$ 268.6	\$ —	\$ 188.9	\$ 97.5	\$ 13.6
Actual return on plan assets	(8.7)	(12.9)	—	3.2	(0.1)	1.1
Expenses paid	(1.7)	(1.0)	—	(0.6)	—	(0.1)
Plan participant contributions	0.2	—	—	—	0.2	—
Foreign currency impact	(6.9)	—	—	(4.6)	(1.8)	(0.5)
Employer contributions	81.7	80.0	—	1.6	—	0.1
Benefits paid out of plan	(38.4)	(22.8)	—	(9.8)	(5.2)	(0.6)
Fair value of plan assets at end of year	\$ 594.8	\$ 311.9	\$ —	\$ 178.7	\$ 90.6	\$ 13.6

For the year ended October 31, 2017

<i>(in millions)</i>	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Change in plan assets:						
Fair value of plan assets at beginning of year	\$ 626.3	\$ 332.5	\$ —	\$ 185.1	\$ 96.1	\$ 12.6
Actual return on plan assets	38.2	37.0	—	0.8	(0.4)	0.8
Expenses paid	(3.4)	(2.6)	—	(0.8)	0.1	(0.1)
Plan participant contributions	0.2	—	—	—	0.2	—
Foreign currency impact	20.9	—	—	14.4	6.1	0.4
Employer contributions	11.0	9.0	—	1.5	—	0.5
Benefits paid out of plan	(22.9)	(12.9)	—	(4.8)	(4.6)	(0.6)
Settlements	(101.7)	(94.4)	—	(7.3)	—	—
Fair value of plan assets at end of year	\$ 568.6	\$ 268.6	\$ —	\$ 188.9	\$ 97.5	\$ 13.6

The following table presents the fair value measurements for the pension assets:

As of October 31, 2018 <i>(in millions)</i>	Fair Value Measurement			
Asset Category	Level 1	Level 2	Level 3	Total
Mutual funds	\$ 63.0	\$ 140.7	\$ —	\$ 203.7
Common stock	35.9	—	—	35.9
Cash	1.9	—	—	1.9
Corporate bonds	—	26.1	—	26.1
Government bonds	—	17.8	—	17.8
Other assets	—	0.8	—	0.8
Total Assets in the Fair Value Hierarchy	\$ 100.8	\$ 185.4	\$ —	\$ 286.2
Investments Measured at Net Asset Value*				308.6
Investments at Fair Value	\$ 100.8	\$ 185.4	\$ —	\$ 594.8

As of October 31, 2017 <i>(in millions)</i>	Fair Value Measurement			
Asset Category	Level 1	Level 2	Level 3	Total
Mutual funds	\$ 76.7	\$ 126.1	\$ —	\$ 202.8
Common stock	40.0	—	—	40.0
Cash	9.3	—	—	9.3
Corporate bonds	—	23.1	—	23.1
Government bonds	—	18.5	—	18.5
Other assets	—	3.9	—	3.9
Total Assets in the Fair Value Hierarchy	\$ 126.0	\$ 171.6	\$ —	\$ 297.6
Investments Measured at Net Asset Value*				271.0
Investments at Fair Value	\$ 126.0	\$ 171.6	\$ —	\$ 568.6

*In accordance with Accounting Standard Codification 820-10, certain investments that were measured at net asset value per share (or its equivalent) have not been classified in the fair value hierarchy.

Financial statement presentation including other comprehensive income:

As of October 31, 2018

<i>(in millions)</i>	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Unrecognized net actuarial loss	\$ 149.7	\$ 82.9	\$ 13.1	\$ 49.5	\$ 1.5	\$ 2.7
Unrecognized prior service cost	0.7	(1.1)	—	3.5	(1.7)	—
Accumulated other comprehensive loss (Pre-tax)	<u>\$ 150.4</u>	<u>\$ 81.8</u>	<u>\$ 13.1</u>	<u>\$ 53.0</u>	<u>\$ (0.2)</u>	<u>\$ 2.7</u>

Amounts recognized in the Consolidated Balance Sheets consist of:

Prepaid benefit cost	\$ 10.4	\$ —	\$ —	\$ 2.3	\$ 5.0	\$ 3.1
Accrued benefit liability	(78.0)	(39.9)	(38.1)	—	—	—
Accumulated other comprehensive loss	150.4	81.8	13.1	53.0	(0.2)	2.7
Net amount recognized	<u>\$ 82.8</u>	<u>\$ 41.9</u>	<u>\$ (25.0)</u>	<u>\$ 55.3</u>	<u>\$ 4.8</u>	<u>\$ 5.8</u>

As of October 31, 2017

<i>(in millions)</i>	Consolidated	United States	Germany	United Kingdom	Netherlands	Other International
Unrecognized net actuarial loss	\$ 171.0	\$ 94.7	\$ 14.9	\$ 57.0	\$ 0.8	\$ 3.6
Unrecognized prior service cost	(2.9)	(1.2)	—	—	(1.7)	—
Accumulated other comprehensive loss (Pre-tax)	<u>\$ 168.1</u>	<u>\$ 93.5</u>	<u>\$ 14.9</u>	<u>\$ 57.0</u>	<u>\$ (0.9)</u>	<u>\$ 3.6</u>

Amounts recognized in the Consolidated Balance Sheets consist of:

Prepaid benefit cost	\$ 10.3	\$ —	\$ —	\$ 1.9	\$ 5.7	\$ 2.7
Accrued benefit liability	(159.5)	(119.0)	(39.9)	—	—	(0.6)
Accumulated other comprehensive loss	168.1	93.5	14.9	57.0	(0.9)	3.6
Net amount recognized	<u>\$ 18.9</u>	<u>\$ (25.5)</u>	<u>\$ (25.0)</u>	<u>\$ 58.9</u>	<u>\$ 4.8</u>	<u>\$ 5.7</u>

<i>(in millions)</i>	October 31, 2018	October 31, 2017
Accumulated other comprehensive loss at beginning of year	\$ 168.1	\$ 199.8
Increase or (decrease) in accumulated other comprehensive (income) or loss		
Net prior service costs amortized during fiscal year	0.2	0.1
Net loss amortized during fiscal year	(11.0)	(10.9)
Loss recognized during fiscal year due to settlement	(1.4)	(27.8)
Prior service credit occurring during fiscal year	3.3	(0.2)
Liability loss occurring during fiscal year	(39.2)	13.2
Asset gain occurring during fiscal year	34.6	(10.5)
Other adjustments	(2.7)	—
Increase (decrease) in accumulated other comprehensive loss	<u>\$ (16.2)</u>	<u>\$ (36.1)</u>
Foreign currency impact	(1.5)	4.4
Accumulated other comprehensive loss at fiscal year end	<u>\$ 150.4</u>	<u>\$ 168.1</u>

In 2019, the Company expects to record an amortization loss of \$0.2 million of prior service costs from shareholders' equity into pension costs.

Defined contribution plans

The Company has several voluntary 401(k) savings plans that cover eligible employees. For certain plans, the Company matches a percentage of each employee's contribution up to a maximum percentage of base salary. Company contributions to the 401(k) plans were \$9.4 million in 2018, \$8.3 million in 2017 and \$7.2 million in 2016.

Supplemental Employee Retirement Plan

The Company has a supplemental employee retirement plan which is an unfunded plan providing supplementary retirement benefits primarily to certain executives and longer-service employees. The present benefit obligation of the supplemental employee retirement plan is included in the United States defined benefit pension plans above.

Postretirement Health Care and Life Insurance Benefits

The Company has certain postretirement unfunded health and life insurance benefit plans in the United States and South Africa. The Company uses a measurement date of October 31 for its postretirement benefit plans.

Benefits paid directly by the Company totaled \$1.0 million, \$0.8 million and \$1.1 million for the fiscal years ending 2018, 2017 and 2016 respectively. Benefits paid directly by the Company during 2019 are expected to be approximately \$1.3 million.

The following table presents the number of participants in the post-retirement health and life insurance benefit plan:

October 31, 2018	Consolidated	United States	South Africa
Active participants	12	5	7
Retirees and beneficiaries	625	542	83

October 31, 2017	Consolidated	United States	South Africa
Active participants	20	12	8
Retirees and beneficiaries	653	567	86

The discount rate actuarial assumptions at October 31 used to measure the year-end benefit obligations and the pension costs for the subsequent year were as follows:

For the year ended:	Consolidated	United States	South Africa
October 31, 2018	5.02%	4.39%	10.10%
October 31, 2017	4.12%	3.44%	9.80%

The components of net periodic cost for the postretirement benefits include the following:

<i>(in millions)</i>	Year Ended October 31,		
	2018	2017	2016
Interest cost	\$ 0.5	\$ 0.5	\$ 0.5
Amortization of prior service benefit	(1.4)	(1.4)	(1.5)
Recognized net actuarial gain	(0.2)	(0.2)	(0.1)
Net periodic income	\$ (1.1)	\$ (1.1)	\$ (1.1)

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The following table sets forth the plans' change in benefit obligation:

<i>(in millions)</i>	October 31, 2018	October 31, 2017
Benefit obligation at beginning of year	\$ 12.6	\$ 13.6
Interest cost	0.5	0.5
Actuarial gain	(1.4)	(0.7)
Benefits paid	(1.0)	(0.8)
Benefit obligation at end of year	<u>\$ 10.7</u>	<u>\$ 12.6</u>

Financial statement presentation included other comprehensive income:

<i>(in millions)</i>	October 31, 2018	October 31, 2017
Unrecognized net actuarial gain	\$ (3.6)	\$ (2.6)
Unrecognized prior service credit	(1.6)	(3.0)
Accumulated other comprehensive income	<u>\$ (5.2)</u>	<u>\$ (5.6)</u>

The accumulated postretirement health and life insurance benefit obligation and fair value of plan assets for the consolidated plans were \$10.7 million and zero, respectively, as of October 31, 2018 compared to \$12.6 million and zero, respectively, as of October 31, 2017.

The healthcare cost trend rates on gross eligible charges are as follows:

	Medical
Current trend rate	6.6%
Ultimate trend rate	4.9%
Year ultimate trend rate reached (South Africa)	2020
Year ultimate trend rate reached (US)	2026

A one-percentage point change in assumed health care cost trend rates would have the following effects:

<i>(in millions)</i>	1-Percentage-Point Increase	1-Percentage-Point Decrease
Effect on total of service and interest cost components	\$ —	\$ —
Effect on postretirement benefit obligation	0.2	(0.2)

Future benefit payments, which reflect expected future service, as appropriate, during the next five years, and in the aggregate for the five years thereafter, are expected to be as follows:

<i>(in millions)</i>	Expected Benefit Payments
Year(s)	
2019	\$ 1.3
2020	1.1
2021	1.0
2022	1.0
2023	0.9
2024-2028	4.0

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 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 our Flexible Products & Services segment. The lawsuits include claims for severance for employment periods prior to the Company's ownership in the business. As of October 31, 2018 and 2017, the estimated liability recorded related to these matters were \$2.0 million and \$5.7 million. 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 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 December 20, 2018, no citations have been issued or fines assessed with respect to any violation of environmental laws and regulations. Since these proceedings are in their early stages, 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 putative 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. Since this lawsuit is at an early stage, the Company is unable to predict the outcome of this lawsuit or estimate a range of reasonably possible losses.

Environmental Reserves

As of October 31, 2018 and 2017, environmental reserves were \$6.8 million and \$7.1 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. As of October 31, 2018 and 2017, environmental reserves of the Company included \$3.7 million and \$4.3 million, respectively, for various European drum facilities acquired from Blagden and Van Leer; \$0.2 million and \$0.3 million, respectively, for its various container life cycle management and recycling facilities acquired in 2011 and 2010; \$0.9 million and \$1.1 million for remediation of sites no longer owned by the Company; and \$2.0 million and \$1.4 million 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:

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

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

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

<i>(in millions, except per share data)</i>	Year Ended October 31,		
	2018	2017	2016
Numerator			
Numerator for basic and diluted EPS –			
Net income attributable to Greif	\$ 209.4	\$ 118.6	\$ 74.9
Cash dividends	100.0	98.6	98.7
Undistributed net income (loss) attributable to Greif, Inc.	\$ 109.4	\$ 20.0	\$ (23.8)
Denominator			
Denominator for basic EPS –			
Class A common stock	25.9	25.8	25.8
Class B common stock	22.0	22.0	22.1
Denominator for diluted EPS –			
Class A common stock	26.0	25.8	25.8
Class B common stock	22.0	22.0	22.1
EPS Basic			
Class A common stock	\$ 3.56	\$ 2.02	\$ 1.28
Class B common stock	\$ 5.33	\$ 3.02	\$ 1.90
EPS Diluted			
Class A common stock	\$ 3.55	\$ 2.02	\$ 1.28
Class B common stock	\$ 5.33	\$ 3.02	\$ 1.90

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 October 31, 2018, the remaining amount of shares that may be repurchased under this authorization was 4,703,487. During 2017, the Stock Repurchase Committee authorized and the Company executed the repurchase of 2,000 shares of Class B Common Stock. There have been no other shares repurchased under this program from November 1, 2016 through October 31, 2018.

The following table summarizes the Company's Class A and Class B common and treasury shares at the specified dates:

	Authorized Shares	Issued Shares	Outstanding Shares	Treasury Shares
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
October 31, 2017:				
Class A Common Stock	128,000,000	42,281,920	25,835,281	16,446,639
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:

	Year Ended October 31,		
	2018	2017	2016
<u>Class A Common Stock:</u>			
Basic shares	25,915,887	25,820,470	25,755,545
Assumed conversion of stock options and unvested shares	49,969	2,470	1,348
Diluted shares	25,965,856	25,822,940	25,756,893
<u>Class B Common Stock:</u>			
Basic and diluted shares	22,007,725	22,009,193	22,062,089

No stock options were antidilutive for the years ended October 31, 2018, 2017, or 2016.

NOTE 15 – EQUITY EARNINGS OF UNCONSOLIDATED AFFILIATES, NET OF TAX AND NET INCOME ATTRIBUTABLE TO NONCONTROLLING INTERESTS

Equity earnings of unconsolidated affiliates, net of tax for the years ended October 31, 2018, 2017 and 2016 were \$3.0 million, \$2.0 million and \$0.8 million, respectively. Dividends received from the Company's equity method affiliates for the years ended October 31, 2018, 2017 and 2016 were \$0.9 million, \$0.4 million and \$0.4 million, respectively.

Net income attributable to noncontrolling interests

Net income attributable to noncontrolling interests represent the portion of earnings or losses from the operations of the Company's consolidated subsidiaries attributable to unrelated third party equity owners that were deducted from net income to arrive at net income attributable to the Company. Net income attributable to noncontrolling interests for the years ended October 31, 2018, 2017 and 2016 was \$20.1 million, \$16.5 million and \$0.6 million, respectively.

NOTE 16 – LEASES

The table below contains information related to the Company's rent expense:

<i>(in millions)</i>	Year Ended October 31,		
	2018	2017	2016
Rent Expense	\$ 47.1	\$ 41.0	\$ 45.5

The following table provides the Company's minimum rent commitments under operating leases in the next five years and the remaining years thereafter:

<i>(in millions)</i>	Operating Leases
Fiscal year(s):	
2019	\$ 50.7
2020	44.0
2021	36.3
2022	31.7
2023	27.1
Thereafter	96.3
Total	<u>\$ 286.1</u>

*There are no minimum rent commitments under capital leases in fiscal year 2019 and thereafter.

NOTE 17 – 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 Rigid Industrial Packaging & Services reportable business segment is the aggregation of five operating segments: Rigid Industrial Packaging & Services – North America; Rigid Industrial Packaging & Services – Latin America; Rigid Industrial Packaging & Services – Europe, Middle East and Africa; Rigid Industrial Packaging & Services – Asia Pacific; and Rigid Industrial Packaging & Services – Tri-Sure.

Operations in the Rigid Industrial Packaging & Services segment involve the production and sale 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. The Company's rigid industrial packaging products and services are sold to customers in industries such as chemicals, paints and pigments, food and beverage, petroleum, industrial coatings, agricultural, pharmaceutical and mineral products, among others.

Operations in the Paper Packaging & Services segment involve the production and sale of containerboard, corrugated sheets, corrugated containers and other corrugated products to customers in North America in industries such as packaging, automotive, food and building products. The Company's corrugated container products are used to ship such diverse products as home appliances, small machinery, grocery products, automotive components, books and furniture, as well as numerous other applications.

Operations in the Flexible Products & Services segment involve the production and sale of flexible intermediate bulk containers and related services on a global basis. The Company's flexible intermediate bulk containers are constructed from a polypropylene-based woven fabric that is produced at its production sites, as well as sourced from strategic regional suppliers. Flexible products are sold to customers and in market segments similar to those of the Company's Rigid Industrial Packaging & Services segment. Additionally, the Company's flexible products significantly expand its presence in the agricultural and food industries, among others.

Operations in the Land Management segment involve the management and sale of timber and special use properties from approximately 243,000 acres of timber properties in the southeastern United States. Land Management's operations focus on the active harvesting and regeneration of its timber properties to achieve sustainable long-term yields. While timber sales are subject to fluctuations, the Company seeks to maintain a consistent cutting schedule, within the limits of market and weather conditions. The Company also sells, from time to time, timberland and special use properties, which consists of surplus properties, HBU properties, and development properties.

In order to maximize the value of timber property, the Company continues to review its current portfolio and explore the development of certain of these properties. This process has led the Company to characterize property as follows:

- Surplus property, meaning land that cannot be efficiently or effectively managed by the Company, 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.
- Timberland, meaning land that is best suited for growing and selling timber.

The disposal of surplus and HBU property is reported in the consolidated statements of income under "gain on disposals of properties, plants and equipment, net" and the sale of development property is reported under "net sales" and "cost of products sold." All HBU, development and surplus property is used by the Company to productively grow and sell timber until sold.

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.

The following segment information is presented for each of the three years in the period ended October 31:

<i>(in millions)</i>	2018	2017	2016
Net sales:			
Rigid Industrial Packaging & Services	\$ 2,623.6	\$ 2,522.7	\$ 2,324.2
Paper Packaging & Services	898.5	800.9	687.1
Flexible Products & Services	324.2	286.4	288.1
Land Management	27.5	28.2	24.2
Total net sales	<u>\$ 3,873.8</u>	<u>\$ 3,638.2</u>	<u>\$ 3,323.6</u>
Operating profit (loss):			
Rigid Industrial Packaging & Services	\$ 183.2	\$ 190.1	\$ 143.9
Paper Packaging & Services	158.3	93.5	89.1
Flexible Products & Services	19.4	5.8	(15.5)
Land Management	9.6	10.1	8.1
Total operating profit	<u>\$ 370.5</u>	<u>\$ 299.5</u>	<u>\$ 225.6</u>
Depreciation, depletion and amortization expense:			
Rigid Industrial Packaging & Services	\$ 81.2	\$ 77.0	\$ 84.6
Paper Packaging & Services	34.2	31.9	31.6
Flexible Products & Services	6.9	7.0	7.7
Land Management	4.6	4.6	3.8
Total depreciation, depletion and amortization expense	<u>\$ 126.9</u>	<u>\$ 120.5</u>	<u>\$ 127.7</u>
Capital expenditures:			
Rigid Industrial Packaging & Services	\$ 76.8	\$ 57.6	\$ 53.9
Paper Packaging & Services	39.2	23.2	27.2
Flexible Products & Services	3.7	2.6	3.2
Land Management	0.4	0.5	0.6
Total segment	<u>120.1</u>	<u>83.9</u>	<u>84.9</u>
Corporate and other	19.0	16.2	16.2
Total capital expenditures	<u>\$ 139.1</u>	<u>\$ 100.1</u>	<u>\$ 101.1</u>
Assets:			
Rigid Industrial Packaging & Services	\$ 1,963.0	\$ 1,976.7	\$ 1,930.8
Paper Packaging & Services	474.3	459.8	439.8
Flexible Products & Services	153.9	163.2	156.1
Land Management	347.2	345.4	339.9
Total segment	<u>2,938.4</u>	<u>2,945.1</u>	<u>2,866.6</u>
Corporate and other	256.4	287.2	286.4
Total assets	<u>\$ 3,194.8</u>	<u>\$ 3,232.3</u>	<u>\$ 3,153.0</u>

The following geographic information is presented for each of the three years in the period ended October 31:

<i>(in millions)</i>	2018	2017	2016
Net Sales:			
United States	\$ 1,920.5	\$ 1,779.3	\$ 1,610.8
Europe, Middle East, and Africa	1,410.9	1,322.4	1,208.4
Asia Pacific and other Americas	542.4	536.5	504.4
Total net sales	<u>\$ 3,873.8</u>	<u>\$ 3,638.2</u>	<u>\$ 3,323.6</u>

The following table presents properties, plants and equipment, net by geographic region:

<i>(in millions)</i>	October 31, 2018	October 31, 2017
Properties, plants and equipment, net:		
United States	\$ 796.3	\$ 730.1
Europe, Middle East, and Africa	276.9	322.0
Asia Pacific and other Americas	118.7	136.3
Total properties, plants and equipment, net	<u>\$ 1,191.9</u>	<u>\$ 1,188.4</u>

NOTE 18 – COMPREHENSIVE INCOME (LOSS)

The following table provides the roll forward of accumulated other comprehensive income (loss) for the year ended October 31, 2018:

<i>(in millions)</i>	Foreign Currency Translation	Derivative Financial Instruments	Minimum Pension Liability Adjustment	Accumulated Other Comprehensive Loss
Balance as of October 31, 2017	\$ (249.3)	\$ 5.1	\$ (114.0)	\$ (358.2)
Other Comprehensive Income (Loss)	(43.5)	8.3	16.3	(18.9)
Balance as of October 31, 2018	<u>\$ (292.8)</u>	<u>\$ 13.4</u>	<u>\$ (97.7)</u>	<u>\$ (377.1)</u>

The following table provides the roll forward of accumulated other comprehensive income (loss) for the year ended October 31, 2017:

<i>(in millions)</i>	Foreign Currency Translation	Derivative Financial Instruments	Minimum Pension Liability Adjustment	Accumulated Other Comprehensive Income (Loss)
Balance as of October 31, 2016	\$ (270.2)	\$ —	\$ (128.2)	\$ (398.4)
Other Comprehensive Income	20.9	5.1	14.2	40.2
Balance as of October 31, 2017	<u>\$ (249.3)</u>	<u>\$ 5.1</u>	<u>\$ (114.0)</u>	<u>\$ (358.2)</u>

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

NOTE 19 – QUARTERLY FINANCIAL DATA (UNAUDITED)

The quarterly results of operations for 2018 and 2017 are shown below:

<i>(in millions, except per share amounts)</i>	2018			
	January 31,	April 30,	July 31,	October 31,
Net sales	\$ 905.7	\$ 968.3	\$ 1,012.1	\$ 987.7
Gross profit	\$ 171.7	\$ 195.3	\$ 217.1	\$ 204.8
Net income ⁽¹⁾	\$ 60.1	\$ 51.9	\$ 72.0	\$ 45.5
Net income attributable to Greif, Inc. ⁽¹⁾	\$ 56.5	\$ 45.1	\$ 67.7	\$ 40.1
Earnings per share				
Basic:				
Class A Common Stock	\$ 0.96	\$ 0.77	\$ 1.15	\$ 0.68
Class B Common Stock	\$ 1.44	\$ 1.14	\$ 1.72	\$ 1.03
Diluted:				
Class A Common Stock	\$ 0.96	\$ 0.77	\$ 1.15	\$ 0.67
Class B Common Stock	\$ 1.44	\$ 1.14	\$ 1.72	\$ 1.03
Earnings per share were calculated using the following number of shares:				
Basic:				
Class A Common Stock	25,845,758	25,934,680	25,941,279	25,941,279
Class B Common Stock	22,007,725	22,007,725	22,007,725	22,007,725
Diluted:				
Class A Common Stock	25,845,758	25,934,680	25,941,279	26,139,524
Class B Common Stock	22,007,725	22,007,725	22,007,725	22,007,725
Market price (Class A Common Stock):				
High	\$ 62.94	\$ 59.09	\$ 60.89	\$ 58.82
Low	\$ 49.68	\$ 48.80	\$ 51.71	\$ 44.72
Close	\$ 57.76	\$ 57.63	\$ 54.03	\$ 47.30
Market price (Class B Common Stock):				
High	\$ 68.71	\$ 63.52	\$ 64.02	\$ 63.50
Low	\$ 55.90	\$ 52.07	\$ 56.01	\$ 48.35
Close	\$ 61.60	\$ 61.56	\$ 57.20	\$ 51.36

⁽¹⁾ The Company recorded the following significant transactions during the fourth quarter of 2018: (i) restructuring charges of \$4.8 million; (ii) non-cash asset impairment charges of \$4.2 million; (iii) pension settlement charges of \$0.9 million; (iv) loss on disposals of properties, plants, equipment, net of \$1.9 million; and (v) gain on disposals of businesses, net of \$(0.9) million. Refer to the Company's Form 10-Q filings with the SEC for prior quarter significant transactions or trends.

	2017			
	(in millions, except per share amounts)			
	January 31	April 30	July 31	October 31
Net sales	\$ 820.9	\$ 887.4	\$ 961.8	\$ 968.1
Gross profit	\$ 163.3	\$ 181.9	\$ 187.1	\$ 182.4
Net income ⁽¹⁾	\$ 8.0	\$ 39.9	\$ 47.5	\$ 39.7
Net income attributable to Greif, Inc. ⁽¹⁾	\$ 5.4	\$ 36.0	\$ 43.9	\$ 33.3
Earnings per share				
Basic:				
Class A Common Stock	\$ 0.10	\$ 0.61	\$ 0.74	\$ 0.57
Class B Common Stock	\$ 0.13	\$ 0.92	\$ 1.12	\$ 0.85
Diluted:				
Class A Common Stock	\$ 0.10	\$ 0.61	\$ 0.74	\$ 0.57
Class B Common Stock	\$ 0.13	\$ 0.92	\$ 1.12	\$ 0.85
Earnings per share were calculated using the following number of shares:				
Basic:				
Class A Common Stock	25,787,769	25,824,194	25,834,636	25,835,281
Class B Common Stock	22,009,725	22,009,725	22,009,596	22,007,725
Diluted:				
Class A Common Stock	25,792,441	25,828,882	25,835,294	25,835,281
Class B Common Stock	22,009,725	22,009,725	22,009,596	22,007,725
Market price (Class A Common Stock):				
High	\$ 57.72	\$ 58.95	\$ 60.32	\$ 60.01
Low	\$ 44.22	\$ 51.70	\$ 53.55	\$ 55.00
Close	\$ 56.28	\$ 57.75	\$ 55.68	\$ 55.53
Market price (Class B Common Stock):				
High	\$ 70.20	\$ 71.31	\$ 66.60	\$ 65.25
Low	\$ 55.05	\$ 56.93	\$ 54.81	\$ 57.58
Close	\$ 68.94	\$ 65.92	\$ 59.26	\$ 62.85

⁽¹⁾The Company recorded the following significant transactions during the fourth quarter of 2017: (i) restructuring charges of \$4.0 million; (ii) non-cash asset impairment charges of \$14.9 million; (iii) pension settlement charges of \$1.5 million; (iv) loss on disposals of properties, plants, equipment, net of \$3.5 million; and (v) loss on disposal of businesses, net of \$3.9 million. Refer to the Company's Form 10-Q filings with the SEC for prior quarter significant transactions or trends.

Shares of the Company's Class A Common Stock and Class B Common Stock are listed on the New York Stock Exchange where the symbols are GEF and GEF.B, respectively.

As of December 17, 2018, there were 322 stockholders of record of the Class A Common Stock and 79 stockholders of record of the Class B Common Stock.

NOTE 20 —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 provides a rollforward of the mandatorily redeemable noncontrolling interest for the years ended October 31, 2017 and 2018:

<i>(in millions)</i>	Mandatorily Redeemable Noncontrolling Interest
Balance as of October 31, 2016	\$ 9.0
Current period mark to redemption value	0.2
Balance as of October 31, 2017	9.2
Current period mark to redemption value	(0.6)
Balance as of October 31, 2018	<u>\$ 8.6</u>

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 interests. The Company will make a payment to the noncontrolling interest owner in the first quarter of 2019 for approximately \$10.1 million.

Redeemable noncontrolling interests are reflected in the consolidated balance sheets at redemption value. The following table provides the rollforward of the redeemable noncontrolling interest for the years ended October 31, 2017 and 2018:

<i>(in millions)</i>	Redeemable Noncontrolling Interest
Balance as of October 31, 2016	\$ 31.8
Current period mark to redemption value	(0.5)
Redeemable noncontrolling interest share of income and other	1.4
Dividends to redeemable noncontrolling interest and other	(1.2)
Balance as of October 31, 2017	31.5
Current period mark to redemption value	(0.5)
Redeemable noncontrolling interest share of income and other	3.7
Dividends to redeemable noncontrolling interest and other	0.8
Balance as of October 31, 2018	<u>\$ 35.5</u>

NOTE 21—SUBSEQUENT EVENTS

On December 20, 2018, two of the Company’s subsidiaries entered into a definitive Agreement and Plan of Merger (the “Merger Agreement”) with the parent of Caraustar Industries, Inc. (“Caraustar”) pursuant to which, the Company is to acquire Caraustar for a purchase price of \$1.8 billion, subject to certain adjustments (the “Acquisition”). The Acquisition is expected to be financed with a combination of existing cash, term and revolving loans and senior unsecured notes, as further described below. The Acquisition is subject to the satisfaction or waiver of certain conditions, including, among other things, the expiration or early termination of the waiting period under the Hart-Scott-Rodino Antitrust Improvements Act of 1976, as amended, and approval of the stockholders of Caraustar’s parent. The majority stockholder of Caraustar’s parent has executed and delivered a written consent to the Company evidencing its approval of the Merger Agreement. The Merger Agreement may be terminated, and the merger may be abandoned at any time prior to the closing, as follows: (i) by mutual written agreement of the Company and Caraustar’s parent; (ii) by either the Company or Caraustar’s parent if the closing has not occurred on or before May 20, 2019 (subject to automatic extensions up to September 20, 2019, subject to terms and conditions of the Merger Agreement); (iii) by the Company in connection with certain breaches by Caraustar’s parent of its representations, warranties or covenants, subject to a cure period;

and (iv) by Caraustar's parent in connection with certain breaches by the Company of its representations, warranties or covenants, subject to a cure period. The Acquisition is expected to close during the first quarter of calendar year 2019, subject to customary closing conditions.

In connection with entering into the Merger Agreement, on December 20, 2018, the Company entered into a commitment letter (the "Commitment Letter") with a syndicate of financial institutions (the "Commitment Parties") to provide the following credit facilities to the Company (the "Credit Facilities"): (i) a new \$1,200.0 million senior secured term loan facility; (ii) a new senior secured backstop credit facility to replace the Company's existing 2017 Credit Agreement; and (iii) a \$700.0 million senior unsecured bridge facility to be available in the event that the Company's planned issuance of \$700.0 million of senior unsecured notes (the "New Senior Notes") has not been completed prior to closing of the Acquisition. The commitment to provide the Facilities is subject to the consummation of the acquisition and certain other customary conditions as more fully set forth in the Commitment Letter.

The Company will utilize proceeds of \$1,200.0 million from the new senior secured term loan facility, \$700.0 million from the new senior unsecured notes, and \$199.0 million provided by the new senior secured backstop credit facility to fund the \$1.8 billion purchase price, to redeem the Company's \$250.0 million Senior Notes due 2019 including a make whole premium, and for the payment of fees and expenses incurred in connection with the Acquisition.

Report of Independent Registered Public Accounting Firm

To the Shareholders and Board of Directors of Greif, Inc. and subsidiary companies

Opinion on the Financial Statements

We have audited the accompanying consolidated balance sheets of Greif, Inc. and subsidiary companies (the “Company”) as of October 31, 2018 and 2017, the related consolidated statements of income, comprehensive income (loss), changes in shareholders’ equity, and cash flows for each of the three years in the period ended October 31, 2018, and the related notes and the financial statement schedule listed in the Index at Item 15 (collectively referred to as the “financial statements”). In our opinion, the financial statements present fairly, in all material respects, the financial position of the Company as of October 31, 2018 and 2017, and the results of its operations and its cash flows for each of the three years in the period ended October 31, 2018, in conformity with accounting principles generally accepted in the United States of America.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the Company’s internal control over financial reporting as of October 31, 2018, based on criteria established in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated December 20, 2018, expressed an unqualified opinion on the Company’s internal control over financial reporting.

Basis for Opinion

These financial statements are the responsibility of the Company’s management. Our responsibility is to express an opinion on the Company’s financial statements based on our audits. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement, whether due to error or fraud. Our audits included performing procedures to assess the risks of material misstatement of the financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the financial statements. We believe that our audits provide a reasonable basis for our opinion.

/s/ Deloitte & Touche LLP

Columbus, Ohio
December 20, 2018

We have served as the Company’s auditor since 2014.

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

None.

ITEM 9A. CONTROLS AND PROCEDURES

Changes in Internal Control Over Financial Reporting

There has been no change in our internal control over financial reporting that occurred during the most recent fiscal quarter that has materially affected, or is 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.

Management's Annual Report on Internal Control over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over our financial reporting. Internal control over financial reporting is the process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States. Our internal control over financial reporting includes those policies and procedures that:

- pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of our assets;
- provide reasonable assurance that transactions are recorded as necessary to allow for the preparation of financial statements in accordance with GAAP, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors;
- provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use or disposition of our assets that could have a material effect on our consolidated financial statements; and
- provide reasonable assurance as to the detection of fraud.

All internal control systems have inherent limitations, including the possibility of circumvention and overriding of controls, and therefore can provide only reasonable assurance of achieving the designed control objectives. The Company's internal control system is supported by written policies and procedures, contains self-monitoring mechanisms, and is audited by the internal audit function. Appropriate actions are taken by management to correct deficiencies as they are identified.

As of October 31, 2018, management has assessed the effectiveness of the Company's internal control over financial reporting. In making this assessment, we used the criteria described in "Internal Control - Integrated Framework (2013)" issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on our assessment, management concluded that the Company's internal control over financial reporting was effective as of October 31, 2018.

Our internal control over financial reporting as of October 31, 2018, has been audited by Deloitte & Touche LLP, an independent registered public accounting firm, as stated in their report, which appears herein.

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Greif, Inc. and subsidiary companies

Opinion on Internal Control over Financial Reporting

We have audited the internal control over financial reporting of Greif, Inc. and subsidiaries (the “Company”) as of October 31, 2018, based on criteria established in *Internal Control-Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of October 31, 2018, based on the criteria established in *Internal Control-Integrated Framework (2013)* issued by COSO.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States) (PCAOB), the consolidated financial statements as of and for the year ended October 31, 2018, of the Company and our report dated December 20, 2018, expressed an unqualified opinion on those financial statements.

Basis for Opinion

The Company’s management is responsible for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in the accompanying Management’s Annual Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the Company’s internal control over financial reporting based on our audit. We are a public accounting firm registered with the PCAOB and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

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

Definition and Limitations of Internal Control over Financial Reporting

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

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

/s/ Deloitte & Touche LLP

Columbus, Ohio
December 20, 2018

ITEM 9B. OTHER INFORMATION

None.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE

Information regarding our directors required by Items 401(a) and (d)-(f) of Regulation S-K will be found under the caption “Proposal Number 1 – Election of Directors” in the 2019 Proxy Statement, which information is incorporated herein by reference. Information regarding our executive officers required by Items 401(b) and (d)-(f) of Regulation S-K will be contained under the caption “Executive Officers of the Company” in the 2019 Proxy Statement, which information is incorporated herein by reference.

We have a separately-designated standing Audit Committee established in accordance with Section 3(a)(58)(A) of the Exchange Act. As of the date of this filing, the members of the Audit Committee were Bruce A. Edwards, John F. Finn, John W. McNamara, and Michael J. Gasser. Mr. Edwards is Chairperson of the Audit Committee. Our Board of Directors has determined that Mr. Edwards is the “audit committee financial expert,” as that term is defined in Item 401(h)(2) of Regulation S-K, and “independent,” as that term is defined in Rule 10A-3 of the Exchange Act.

Information regarding the filing of reports of ownership under Section 16(a) of the Exchange Act by our officers and directors and persons owning more than 10 percent of a registered class of our equity securities required by Item 405 of Regulation S-K will be found under the caption “Corporate Governance—Stock Holdings of Certain Owners and Management—Section 16(a) Beneficial Ownership Reporting Compliance” in the 2019 Proxy Statement, which information is incorporated herein by reference.

Information concerning the procedures by which stockholders may recommend nominees to our Board of Directors will be found under the caption “Corporate Governance—Board of Directors—Director Nominations” in the 2019 Proxy Statement. There has been no material change to the nomination procedures we previously disclosed in the proxy statement for our 2018 annual meeting of stockholders.

Our Board of Directors has adopted a code of ethics that applies to our principal executive officer, principal financial officer, principal accounting officer, controller and persons performing similar functions. This code of ethics is posted on our Internet Web site at www.greif.com under “Investors—Corporate Governance—Governance Documents.” Copies of this code of ethics are also available to any person, without charge, by making a written request to us. Requests should be directed to Greif, Inc., Attention: Corporate Secretary, 425 Winter Road, Delaware, Ohio 43015. Any amendment (other than any technical, administrative or other non-substantive amendment) to, or waiver from, a provision of this code will be posted on our website described above within four business days following its occurrence.

ITEM 11. EXECUTIVE COMPENSATION

The 2019 Proxy Statement will contain information regarding the following matters: information regarding executive compensation required by Item 402 of Regulation S-K will be found under the caption “Compensation Discussion and Analysis”; information required by Item 407(e)(4) of Regulation S-K will be found under the caption “Compensation Committee Interlocks and Insider Participation,” and information required by Item 407(e)(5) of Regulation S-K will be found under the caption “Compensation Committee Report.” This information is incorporated herein by reference.

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

Information regarding security ownership of certain beneficial owners and management required by Item 403 of Regulation S-K will be found under the caption “Stock Holdings of Certain Owners and Management” in the 2019 Proxy Statement, which information is incorporated herein by reference.

Information regarding equity compensation plan information required by Item 201(d) of Regulation S-K will be found under the caption “Executive Compensation—Equity Compensation Plan Information” in the 2019 Proxy Statement, which information is incorporated herein by reference.

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

Information regarding certain relationships and related transactions required by Item 404 of Regulation S-K will be found under the caption “Certain Relationships and Related Transactions” in the 2019 Proxy Statement, which information is incorporated herein by reference.

Information regarding the independence of our directors required by Item 407(a) of Regulation S-K will be found under the caption “Corporate Governance – Director Independence” in the 2019 Proxy Statement, which information is incorporated herein by reference.

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Information regarding principal accounting fees and services required by Item 9(e) of Schedule 14A will be found under the caption “Independent Registered Public Accounting Firm” in the 2019 Proxy Statement, which information is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULES

EXHIBIT INDEX

Exhibit No.	Description of Exhibit	If Incorporated by Reference, Document with which Exhibit was Previously Filed with SEC
3.1	Amended and Restated Certificate of Incorporation of Greif, Inc.	Annual Report on Form 10-K for the fiscal year ended October 31, 1997, File No. 001-00566 (see Exhibit 3(a) therein).
3.2	Amendment to Amended and Restated Certificate of Incorporation of Greif, Inc.	Definitive Proxy Statement on Form 14A dated January 27, 2003, File No. 001-00566 (see Exhibit A therein).
3.3	Amendment to Amended and Restated Certificate of Incorporation of Greif, Inc.	Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2007, File No. 001-00566 (see Exhibit 3.1 therein).
3.4	Second Amended and Restated By-Laws of Greif, Inc.	Current Report on Form 8-K dated August 29, 2008, File No. 001-00566 (see Exhibit 99.2 therein)
3.5	Amendment of Second Amended and Restated By-Laws of Greif, Inc. (effective November 1, 2011).	Current Report on Form 8-K dated November 2, 2011, File No. 001-00566 (see Exhibit 99.2 therein)
3.6	Amendment of Second Amended and Restated By-Laws of Greif, Inc. (effective September 3, 2013).	Current Report on Form 8-K dated September 6, 2013, File No. 001-00566 (see Exhibit 99.3 therein)
4.1	Indenture dated as of July 28, 2009, among Greif, Inc., as Issuer, and U.S. Bank National Association, as Trustee, regarding 7-3/4% Senior Notes due 2019	Quarterly Report on Form 10-Q for the fiscal quarter ended July 31, 2009, File No. 001-00566 (see Exhibit 4(b) therein).
4.2	Indenture dated as of July 15, 2011, among Greif Luxembourg Finance S.C.A., as Issuer, Greif, Inc. as Guarantor, The Bank of New York Mellon, as Trustee and Principal Paying Agent, and The Bank of New York Mellon (Luxembourg) S.A., as Transfer Agent, Registrar and Luxembourg Paying Agent, regarding 7.375% Senior Notes due 2021	Quarterly Report on Form 10-Q for the fiscal quarter ended July 31, 2011, File No. 001-00566 (see Exhibit 99.3 therein).
10.1*	Greif, Inc. Directors' Stock Option Plan.	Registration Statement on Form S-8, File No. 333-26977 (see Exhibit 4(b) therein).
10.2*	Greif, Inc. Incentive Stock Option Plan, as Amended and Restated.	Annual Report on Form 10-K for the fiscal year ended October 31, 1997, File No. 001-00566 (see Exhibit 10(b) therein).
10.3*	Greif, Inc. Amended and Restated Directors' Deferred Compensation Plan.	Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2006, File No. 001-00566 (see Exhibit 10.2 therein).
10.4*	Supplemental Retirement Benefit Agreement.	Annual Report on Form 10-K for the fiscal year ended October 31, 1999, File No. 001-00566 (see Exhibit 10(i) therein).
10.5*	Second Amended and Restated Supplemental Executive Retirement Plan.	Annual Report on Form 10-K for fiscal year ended October 31, 2007, File No. 001-00566 (see Exhibit 10(f) therein).

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Exhibit No.	Description of Exhibit	If Incorporated by Reference, Document with which Exhibit was Previously Filed with SEC
10.6*	Greif, Inc. Amended and Restated Long-Term Incentive Plan.	Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2006, File No. 001-00566 (see Exhibit 10.1 therein).
10.7*	Amendment No. 1 to Greif, Inc. Amended and Restated Long-Term Incentive Plan.	Annual Report on Form 10-K for the fiscal year ended October 31, 2014, File No. 001-00566 (See Exhibit 10.8 therein).
10.8*	Amendment No. 2 to Greif, Inc. Amended and Restated Long-Term Incentive Plan	Contained herein.
10.9*	Greif, Inc. Performance-Based Incentive Compensation Plan.	Definitive Proxy Statement on Form 14A dated January 25, 2002, File No. 001-00566 (see Exhibit B therein).
10.10*	Amendment No. 1 to Greif, Inc. Performance-Based Incentive Compensation Plan	Annual Report on Form 10-K for the fiscal year ended October 31, 2011, File No. 001-00566 (See Exhibit 10(i) therein).
10.11*	Amendment No. 2 to Greif, Inc. Performance-Based Incentive Compensation Plan	Annual Report on Form 10-K for the fiscal year ended October 31, 2013, File No. 001-00566 (See Exhibit 10.10 therein).
10.12*	Amendment No. 3 to Greif, Inc. Performance-Based Incentive Compensation Plan	Annual Report on Form 10-K for the fiscal year ended October 31, 2017, File No. 001-00566 (See Exhibit 10.11 therein).
10.13*	Greif, Inc. 2001 Management Equity Incentive and Compensation Plan	Definitive Proxy Statement on Form DEF 14A dated January 26, 2001, File No. 001-00566 (see Exhibit A therein).
10.14*	Amendment No. 1 to Greif, Inc. 2001 Management Equity Incentive and Compensation Plan	Annual Report on Form 10-K for the fiscal year ended October 31, 2011, File No. 001-00566 (See Exhibit 10(k) therein).
10.15*	Amendment No. 2 to Greif, Inc. 2001 Management Equity Incentive and Compensation Plan	Annual Report on Form 10-K for the fiscal year ended October 31, 2015, File No. 001-00566 (See Exhibit 10.13.2 therein).
10.16*	Greif, Inc. 2000 Nonstatutory Stock Option Plan.	Registration Statement on Form S-8, File No. 333-61058 (see Exhibit 4(c) therein).
10.17*	2005 Outside Directors Equity Award Plan	Definitive Proxy Statement on Form DEF 14A, File No. 001-00566, filed with the Securities and Exchange Commission on January 21, 2005 (see Exhibit A therein).
10.18*	Form of Stock Option Award Agreement for the 2005 Outside Directors Equity Award Plan of Greif, Inc.	Registration Statement on Form S-8, File No. 333-123133 (see Exhibit 4(c) therein).
10.19*	Form of Restricted Share Award Agreement for the 2005 Outside Directors Equity Award Plan of Greif, Inc.	Registration Statement on Form S-8, File No. 333-123133 (see Exhibit 4(d) therein).
10.20*	Amendment No. 1 to Greif, Inc. 2005 Outside Directors Equity Award Plan.	Quarterly Report on Form 10-Q for the fiscal quarter ended January 31, 2016, File No. 001-00566 (see Exhibit 10.1 therein).
10.21*	Greif, Inc. Nonqualified Deferred Compensation Plan	Quarterly Report on Form 10-Q for the fiscal quarter ended January 31, 2008, File No. 001-00566 (see Exhibit 10.CC therein).

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Exhibit No.	Description of Exhibit	If Incorporated by Reference, Document with which Exhibit was Previously Filed with SEC
10.22	Credit Agreement dated November 3, 2016, among Greif, Inc., Greif International Holding B.V., Greif International Holding Supra C.V., Greif JART S.à.r.l., and Greif Luxembourg Holding S.à.r.l., as borrowers, the lenders party thereto; JPMorgan Chase Bank, National Association, as administrative agent for the lenders; JPMorgan Chase Bank, National Association, Merrill Lynch, Pierce, Fenner & Smith Incorporated, and Wells Fargo Securities, LLC, as joint lead arrangers and joint book managers; Bank of America, N.A. and Wells Fargo Bank, National Association, as co-syndication agents; and KeyBank National Association, Citizens Bank of Pennsylvania, ING Bank N.V., U.S. Bank National Association and Cooperatieve Rabobank U.A., New York Branch, as co-documentation agents.	Current Report on Form 8-K dated November 7, 2016, File No. 001-00566 (see Exhibit 99.2 therein).
10.23	Second Amended and Restated Credit Agreement dated as of December 19, 2012 among Greif, Inc., Greif International Holding Supra C.V. and Greif International Holding B.V., as borrowers, with a syndicate of financial institutions, as lenders, Bank of America, N.A., as administrative agent and L/C issuer, Merrill Lynch, Pierce, Fenner & Smith Incorporated, JP Morgan Securities LLC and Wells Fargo Securities, LLC, as joint lead arrangers and joint book managers, JP Morgan Chase Bank, N.A. and Wells Fargo Bank, National Association, as co-syndication agents, and KeyBank National Association, Citizens Bank of Pennsylvania, ING Bank N.V. and U.S. Bank National Association, as co-documentation agents.	Current Report on Form 8-K dated December 20, 2012, File No. 001-00566 (see Exhibit 99.2 therein).
10.24	Formation Agreement dated as of June 14, 2010, by and among Greif, Inc. and Greif International Holding Supra C.V. and National Scientific Company Limited and Dabbagh Group Holding Company Limited.	Quarterly Report on Form 10-Q for the fiscal quarter ended July 31, 2010, File No. 001-00566 (see Exhibit 10.2 therein).
10.25	Joint Venture Agreement dated as of September 29, 2010, by and among Greif, Inc. and Greif International Holding Supra C.V. and Dabbagh Group Holding Company Limited and National Scientific Company Limited.	Annual Report on Form 10-K for the fiscal year ended October 31, 2010, File No. 001-00566 (see Exhibit 10(ee) therein).
10.26	Master Definitions Agreement dated as of April 27, 2012, by and among Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. (trading as Rabobank International), London Branch, Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A., Nieuw Amsterdam Receivables Corporation, Cooperage Receivables Finance B.V., Stichting Cooperage Receivables Finance Holding, Greif Coordination Center BVBA, Greif, Inc., the Originators as described therein and Trust International Management (T.I.M.) B.V. (Master Definitions Agreement provides definitions for agreements listed as Exhibits 10.2, 10.3 and 10.4).	Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2012, File No. 001-00566 (see Exhibit 10.1 therein).
10.27	Performance and Indemnity Agreement dated as of April 27, 2012, by and among Greif, Inc., as Performance Indemnity Provider, Cooperage Receivables Finance B.V., as Main SPV, Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A., as Italian Intermediary, and Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. (trading as Rabobank International), London Branch, as Committed Purchaser, Facility Agent and Funding Administrator.	Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2012, File No. 001-00566 (see Exhibit 10.2 therein).

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Exhibit No.	Description of Exhibit	If Incorporated by Reference, Document with which Exhibit was Previously Filed with SEC
10.28	Nieuw Amsterdam Receivables Purchase Agreement dated as of April 27, 2012, by and among Cooperage Receivables Finance B.V., as Main SPV, Nieuw Amsterdam Receivables Corporation, as Conduit Purchaser, Greif Coordination Center BVBA, as Master Servicer, Onward Seller and Originator Agent, Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A., as Italian Intermediary, and Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. (trading as Rabobank International), London Branch, as Committed Purchaser, Facility Agent and Funding Administrator.	Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2012, File No. 001-00566 (see Exhibit 10.3 therein).
10.29	Subordinated Loan Agreement dated as of April 27, 2012, by and among Cooperage Receivables Finance B.V., as Main SPV, Greif Coordination Center BVBA, as Subordinated Lender, and Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. (trading as Rabobank International), London Branch, as Facility Agent, Funding Administrator and Main SPV Administrator.	Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2012, File No. 001-00566 (see Exhibit 10.4 therein).
10.30*	Defined Contribution Supplemental Executive Retirement Plan.	Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2013, File No. 001-00566 (see Exhibit 10.1 therein).
10.31	Amended and Restated Transfer and Administration Agreement dated as of September 30, 2013, by and among Greif Receivables Funding LLC, Greif Packaging LLC, Delta Petroleum Company, Inc., American Flange & Manufacturing Co., Inc., Olympic Oil Ltd., Trilla-St. Louis Corporation, and PNC Bank, National Association, as a Committed Investor, a Managing Agent, an Administrator, and the Agent.	Annual Report on Form 10-K for the fiscal year ended October 31, 2013, File No. 001-00566 (see Exhibit 10.44 therein).
10.32	Amended and Restated Sale Agreement dated as of September 30, 2013, by and between Greif Packaging LLC, Delta Petroleum Company, Inc., American Flange & Manufacturing Co., Inc., Olympic Oil Ltd., Trilla-St. Louis Corporation, each other entity from time to time party as an Originator, and Greif Receivables Funding LLC.	Annual Report on Form 10-K for the fiscal year ended October 31, 2013, File No. 001-00566 (see Exhibit 10.45 therein).
10.33	Amendment Agreement dated April 20, 2015, by and among Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. Trading as Rabobank London, Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A., Nieuw Amsterdam Receivables Corporation S. À.R.L., Cooperage Receivables Finance B.V., Stichting Cooperage Receivables Finance Holding, Greif Services Belgium BVBA, Greif, Inc., the Originators as described therein and Trust International Management (T.I.M.) B.V. (in connection with the Master Definitions Agreement dated April 27, 2012).	Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2015, File No. 001-00566 (see Exhibit 10.1 therein).
10.34	Amendment and Restated Master Definition Agreement dated April 20, 2015, by and among Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. Trading as Rabobank London, Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A., Nieuw Amsterdam Receivables Corporation S. À.R.L., Cooperage Receivables Finance B.V., Stichting Cooperage Receivables Finance Holding, Greif Services Belgium BVBA, Greif, Inc., the Originators as described therein and Trust International Management (T.I.M.) B.V.	Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2015, File No. 001-00566 (see Exhibit 10.2 therein).

Exhibit No.	Description of Exhibit	If Incorporated by Reference, Document with which Exhibit was Previously Filed with SEC
10.35	Amendment No. 1, dated as of December 1, 2015, to the Amended and Restated Transfer and Administration Agreement, dated as of September 30, 2013, by and among Greif Receivables Funding LLC, Greif Packaging LLC, Delta Petroleum Company, Inc., American Flange & Manufacturing Co., Inc., and Trilla-St. Louis Corporation, as originators, and PNC Bank, National Association, as a Committed Investor, Managing Agent and Administrator and the Agent.	Current Report on Form 8-K dated December 7, 2015, File No. 001-00566 (see Exhibit 10.1 therein).
10.36	Amendment Agreement dated April 18, 2017, by and among Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. Trading as Rabobank London, Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A., Nieuw Amsterdam Receivables Corporation S. À.R.L., Cooperage Receivables Finance B.V., Stichting Cooperage Receivables Finance Holding, Greif Services Belgium BVBA, Greif, Inc., the Originators as described therein and Trust International Management (T.I.M.) B.V. (in connection with the Master Definitions Agreement dated April 27, 2012 and as amended and restated April 20, 2015).	Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2017, File No. 001-00566 (see Exhibit 10.1 therein).
10.37	Amended and Restated Master Definition Agreement dated April 18, 2017, by and among Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A. Trading as Rabobank London, Coöperatieve Centrale Raiffeisen-Boerenleenbank B.A., Nieuw Amsterdam Receivables Corporation S. À.R.L., Cooperage Receivables Finance B.V., Stichting Cooperage Receivables Finance Holding, Greif Services Belgium BVBA, Greif, Inc., the Originators as described therein and Trust International Management (T.I.M.) B.V.	Quarterly Report on Form 10-Q for the fiscal quarter ended April 30, 2017, File No. 001-00566 (see Exhibit 10.2 therein).
10.38	Amendment No. 2, dated as of March 3, 2016, to the Amended and Restated Transfer and Administration Agreement, dated as of September 30, 2013, by and among Greif Receivables Funding LLC, Greif Packaging LLC, Delta Petroleum Company, Inc., American Flange & Manufacturing Co., Inc., and Trilla-St. Louis Corporation, as originators, and PNC Bank, National Association, as a Committed Investor, Managing Agent and Administrator and the Agent.	Current Report on Form 8-K dated March 7, 2016, File No. 001-00566 (see Exhibit 10.1 therein).
10.39	Second Amended and Restated Sale Agreement dated September 28, 2016, by and between Greif Packaging LLC, Delta Petroleum Company, Inc., American Flange & Manufacturing Co., Inc., and each other entity from time to time party hereto as an Originator, and Greif Receivables Funding LLC.	Current Report on Form 8-K dated October 4, 2016, File No. 001-00566 (see Exhibit 99.1 therein).
10.40	Second Amended and Restated Transfer and Administration Agreement dated September 28, 2016, by and among Greif Receivables Funding LLC, Greif Packaging LLC, as Initial Servicer, Greif Packaging LLC, Delta Petroleum Company, Inc., American Flange & Manufacturing Co., Inc., and each other entity from time to time party hereto as an originator, Cooperatieve Rabobank U.A., New York Branch, as a Committed Investor, a Managing Agent, an Administrator and the Agent, and the various investor groups, managing agents and administrators from time to time parties hereto.	Current Report on Form 8-K dated October 4, 2016, File No. 001-00566 (see Exhibit 99.2 therein).

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Exhibit No.	Description of Exhibit	If Incorporated by Reference, Document with which Exhibit was Previously Filed with SEC
10.41	Amendment No. 1, dated September 27, 2017, to the Second Amended and Restated Transfer and Administration Agreement, dated September 28, 2016, among Greif Receivables Funding LLC, as Seller, Greif Packaging LLC, as Servicer and an Originator, Delta Petroleum Company, Inc. and American Flange & Manufacturing Co., Inc., as Originators, The Bank of Tokyo-Mitsubishi UFJ Ltd., as a Committed Investor, a Managing Agent and an Administrator, and Cooperatieve Rabobank U.A., New York Branch, as a Committed Investor, a Managing Agent, an Administrator and the Agent.	Annual Report on Form 10-K for the fiscal year ended October 31, 2017, File No. 001-00566 (See Exhibit 10.41 therein).
10.42	Amendment No. 2, dated September 28, 2018, to the Second Amended and Restated Transfer and Administration Agreement, dated September 27, 2017, among Greif Receivables Funding LLC, as Seller, Greif Packaging LLC, as Servicer and an Originator, Delta Petroleum Company, Inc. and American Flange & Manufacturing Co., Inc., as Originators, The Bank of Tokyo-Mitsubishi UFJ Ltd., as a Committed Investor, a Managing Agent and an Administrator, and Cooperatieve Rabobank U.A., New York Branch, as a Committed Investor, a Managing Agent, an Administrator and the Agent.	Contained herein.
21	Subsidiaries of the Registrant.	Contained herein.
23	Consent of Deloitte & Touche LLP.	Contained herein.
24	Powers of Attorney for Michael J. Gasser, Vicki L. Avril, John F. Finn, John W. McNamara, Bruce A. Edwards, Daniel J. Gunsett, Judith D. Hook, Patrick J. Norton and Mark A. Emkes.	Annual Report on Form 10-K for the fiscal year ended October 31, 2015, File No. 001-00566 (See Exhibit 24 therein).
31.1	Certification of Chief Executive Officer Pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934.	Contained herein.
31.2	Certification of Chief Financial Officer Pursuant to Rule 13a-14(a) of the Securities Exchange Act of 1934.	Contained herein.
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.	Contained herein.
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.	Contained herein.
101	The following financial statements from the Company's Annual Report on Form 10-K for the year ended October 31, 2018, formatted in XBRL (Extensive Business Reporting Language): (i) Consolidated Statements of Income, (ii) Consolidate Balance Sheets, (iii) Consolidated Statements of Cash Flow, (iv) Consolidated Statements of Changes in Shareholders' Equity and (v) Notes to Consolidated Financial Statements.	Contained herein.

* Executive compensation plans and arrangements required to be filed pursuant to Item 601(b)(10) of Regulation S-K.

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Schedule No.	Description of Schedule	If Incorporated by Reference, Document with which Exhibit was Previously Filed with SEC
II	Consolidated Valuation and Qualifying Accounts and Reserves	Contained herein.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

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

Date: December 20, 2018

Greif, Inc.

(Registrant)
By: /s/ PETER G. WATSON

Peter G. Watson
President and Chief Executive Officer

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

/s/ PETER G. WATSON

Peter G. Watson
President and Chief Executive Officer
Member of the Board of Directors
(principal executive officer)

/s/ LAWRENCE A. HILSHEIMER

Lawrence A. Hilsheimer
Executive Vice President and Chief Financial Officer
(principal financial officer)

VICKI L. AVRIL*

Vicki L. Avril
Member of the Board of Directors

/s/ DAVID C. LLOYD

David C. Lloyd
Vice President, Corporate Financial Controller
(principal accounting officer)

JOHN W. MCNAMARA*

John W. McNamara
Member of the Board of Directors

MICHAEL J. GASSER*

Michael J. Gasser
Chairman
Member of the Board of Directors

DANIEL J. GUNSETT*

Daniel J. Gunsett
Member of the Board of Directors

JOHN F. FINN*

John F. Finn
Member of the Board of Directors

PATRICK J. NORTON*

Patrick J. Norton
Member of the Board of Directors

BRUCE A. EDWARDS*

Bruce A. Edwards
Member of the Board of Directors

MARK A. EMKES*

Mark A. Emkes
Member of the Board of Directors

JUDITH D. HOOK*

Judith D. Hook
Member of the Board of Directors

* The undersigned, Peter G. Watson, by signing his name hereto, does hereby execute this Form 10-K on behalf of each of the above-named persons pursuant to powers of attorney duly executed by such persons and filed as an exhibit to this Form 10-K.

By: _____ /s/ PETER G. WATSON
Peter G Watson

Each of the above signatures is affixed as of December 20, 2018.

GREIF, INC. AND SUBSIDIARY COMPANIES

Consolidated Valuation and Qualifying Accounts and Reserves (Dollars in millions)

Description	Balance at Beginning of Period	Charged to Costs and Expenses	Charged to Other Accounts	Deductions	Balance at End of Period
Year ended October 31, 2016:					
Allowance for doubtful accounts	\$ 11.8	\$ 1.7	\$ (4.2)	\$ (0.5)	\$ 8.8
Environmental reserves	\$ 8.2	\$ 1.1	\$ (2.5)	\$ —	\$ 6.8
Year ended October 31, 2017:					
Allowance for doubtful accounts	\$ 8.8	\$ 0.5	\$ (0.2)	\$ (0.2)	\$ 8.9
Environmental reserves	\$ 6.8	\$ 1.1	\$ (1.1)	\$ 0.3	\$ 7.1
Year ended October 31, 2018:					
Allowance for doubtful accounts	\$ 8.9	\$ 0.4	\$ (4.6)	\$ (0.5)	\$ 4.2
Environmental reserves	\$ 7.1	\$ 1.3	\$ (1.6)	\$ —	\$ 6.8

**AMENDMENT NO. 2
TO THE
GREIF, INC.
AMENDED AND RESTATED LONG-TERM INCENTIVE PLAN**

The Greif, Inc. Amended and Restated Long-Term Incentive Plan (the "Plan") is hereby amended pursuant to the following provisions:

1. **Definitions:** For the purposes of the Plan and this amendment, all capitalized terms used in this amendment which are not otherwise defined herein shall have the respective meanings given such terms in the Plan.

2. **Amendments:**

(a) The references in Article 1, Section 1.1 and Article 9 of the Plan to "October 31, 2015" are hereby amended to "October 31, 2025."

(b) Article 4, Section 4.4 of the Plan is hereby amended by deleting the second paragraph in its entirety and inserting the following in lieu thereof:

"The Target Incentive Award for each Participant will be a percentage of that Participant's average base salary (exclusive of any bonus and other benefits) (the "Base Salary") during the Performance Period. In addition, in no event shall the Final Award paid to any Employee under the Plan for any Performance Period exceed \$12,000,000; for purpose of clarification, the change in share value of any Restricted Shares issued as part of a Final Award from the award value determined in accordance with Section 5.1(a) shall not be considered for purposes of applying this cap."

(c) Article 6, Section 6.1 of the Plan is hereby amended by deleting it in its entirety and inserting the following in lieu thereof:

"6.1. Termination of Employment Due to Death, Disability, or Retirement. In the event a Participant's employment is terminated by reason of death, Disability, or "retirement" (as determined by the Committee), the Final Award determined in accordance with Section 4.4 herein shall be reduced on a prorated basis to reflect participation prior to termination. The reduced award shall be determined by multiplying said Final Award by a fraction, the numerator of which is the number of days of employment in the Performance Period through the date of employment termination, and the denominator of which is the number of days in the Performance Period. In the case of a Participant's Disability, the employment termination shall be deemed to have occurred on the date that the Committee determines the definition of Disability to have been satisfied. The Final Award thus determined shall be paid as soon as practicable and reasonable following the end of the applicable Performance Periods, but in no event shall such amount be paid sooner than 75 days after the end of each applicable Performance Period nor later than the 15th day of the third month after the end of the taxable year of the Participant in which the Final Award for that Performance Period was earned."

3. **Effective Date; Construction:** The effective date of this amendment is February 27, 2018 and this amendment shall be deemed to be part of the Plan as of such date. In the event of any inconsistencies between the provisions of the Plan and this amendment, the provisions of this amendment shall control. Except as modified by this amendment, the Plan shall continue in full force and effect without change.

AMENDMENT NO. 2
to
SECOND AMENDED AND RESTATED TRANSFER AND ADMINISTRATION AGREEMENT

This AMENDMENT NO. 2 TO SECOND AMENDED AND RESTATED TRANSFER AND ADMINISTRATION AGREEMENT (this "Amendment"), dated as of September 26, 2018, is entered into by and among Greif Receivables Funding LLC, a Delaware limited liability company, as seller (the "SPV"), Greif Packaging LLC ("GP"), a Delaware limited liability company, Delta Petroleum Company, Inc., a Louisiana corporation, and American Flange & Manufacturing Co., Inc., a Delaware corporation, as originators (each, an "Originator" and collectively, the "Originators"), GP, as servicer (in such capacity, the "Servicer"), MUFG Bank, Ltd. (f/k/a The Bank of Tokyo-Mitsubishi UFJ Ltd.) ("MUFG"), as a Committed Investor, a Managing Agent and an Administrator, and Coöperatieve Rabobank U.A., New York Branch ("Rabobank"), as a Committed Investor, a Managing Agent, an Administrator and the Agent, and solely with respect to Section 4.9, Greif, Inc.

RECITALS

WHEREAS, the SPV, the Servicer, the Originators and Rabobank have entered into that certain Second Amended and Restated Transfer and Administration Agreement, dated as of September 28, 2016 (as amended by that certain Amendment No. 1 to Second Amended and Restated Transfer and Administration Agreement, dated as of September 27, 2017, and as further amended, supplemented, amended and restated or otherwise modified through the date hereof, the "TAA"); and

WHEREAS, the parties hereto wish to make certain amendments to the TAA as set forth herein;

NOW, THEREFORE, in consideration of the premises and the mutual agreements contained herein and in the TAA, the parties hereto agree as follows:

SECTION 1. Definitions. All capitalized terms used but not defined herein have the meanings provided in the TAA.

SECTION 2. Amendments to the TAA. The TAA is hereby amended as follows:

1. The following new definitions are hereby added to Section 1.1 of the TAA in the appropriate alphabetical order:

"Beneficial Ownership Rule" means 31 C.F.R. § 1010.230.

"Second Amendment Effective Date" means September 26, 2018.

2. The definition of "Commitment Termination Date" in Section 1.1 of the TAA is hereby amended and restated in its entirety to read as follows:

"Commitment Termination Date" means the earlier to occur of September 26, 2019, or such later date to which the Commitment Termination Date may be extended by the SPV, the Agent and the Committed Investors (each in their sole discretion).

3. The following new clause (ff) is hereby added to Section 4.1 of the TAA:

(ff) Beneficial Ownership. In the case of the SPV, as of the Second Amendment Effective Date, the SPV is an entity that is organized under the laws of the United States or of any state and at least 51 percent of whose common stock or analogous equity interest is owned by a listed entity and is excluded on that basis

from the definition of Legal Entity Customer as defined in the Beneficial Ownership Rule.

4. Section 6.1(a)(iv) of the TAA is hereby amended and restated in its entirety to read as follows:

Notices. Promptly after receipt thereof, copies of all notices received by the SPV from any Originator. Promptly following any change that would result in a change to the status as an excluded Legal Entity Customer under and as defined in the Beneficial Ownership Rule, the SPV shall execute and deliver to the Agent a Certification of Beneficial Owner(s) complying with the Beneficial Ownership Rule, in form and substance reasonably acceptable to the Agent.

5. Section 6.2(m) of the TAA is hereby amended and restated in its entirety to read as follows:

(m) AML. SPV and Servicer will not, directly or indirectly, use the proceeds of Investments, or lend, contribute or otherwise make available such proceeds to any subsidiary, joint venture partner or other Person, (A) to directly fund any activities or business of or with any Person, or in any country or territory, that, at the time of such funding, is, or whose government is, the subject of Sanctions to the extent such activities or business would be prohibited by Sanctions if conducted by a corporation incorporated in the United States or in a European Union member state, (B) in any other manner that would result in a violation of Sanctions by any Person (including any Person participating in the Investments, whether as underwriter, advisor, investor, or otherwise) or (C) in furtherance of a direct offer, payment, promise to pay, or authorization of the direct payment or giving of money, or anything else of value, in violation of the United States Foreign Corrupt Practices Act of 1977, the UK Bribery Act 2010, and other similar anti-corruption legislation in other jurisdictions.

SECTION 3. Conditions Precedent. This Amendment shall become effective upon the satisfaction of the following: (i) receipt by the Agent of a counterpart (or counterparts) of this Amendment, duly executed by each of the parties hereto or other evidence satisfactory to the Agent of execution and delivery by such parties and (ii) payment to the Agent, for the benefit of the Managing Agent of each Investor Group, on behalf of the Investors in such Investor Group,

of an extension fee in an amount equal to the product of (A) 0.05% and (B) the Commitment of the Committed Investors in such Managing Agent's Investor Group.

SECTION 4. Miscellaneous.

1. Representations and Warranties. (i) Each of the SPV, each Originator and the Servicer hereby represents and warrants that this Amendment constitutes a legal, valid and binding obligation of such Person, enforceable against it in accordance with its terms, (ii) the SPV hereby represents and warrants that upon the effectiveness of this Amendment, no Termination Event or Potential Termination Event shall exist and (iii) each of the SPV, each Originator and the Servicer hereby represents and warrants that the representations and warranties of such Person set forth in the TAA and any other Transaction Document are true and correct in all material respects (except those representations and warranties qualified by materiality or by reference to a material adverse effect, which are true and correct in all respects) as of the date hereof as though made on and as of such day (unless such representations and warranties specifically refer to a previous day, in which case, they shall be complete and correct in all material respects (or, with respect to such representations or warranties qualified by materiality or by reference to a material adverse effect, complete and correct in all respects) on and as of such previous day).

2. References to TAA. Upon the effectiveness of this Amendment, each reference in the TAA to "this Agreement", "hereunder", "hereof", "herein", or words of like import shall mean and be a reference to the TAA as amended hereby, and each reference to the TAA in any other document, instrument or agreement executed and/or delivered in connection with the TAA shall mean and be a reference to the TAA as amended hereby.

3. Effect on TAA. Except as specifically amended above, the TAA and all other documents, instruments and agreements executed and/or delivered in connection therewith shall remain in full force and effect and are hereby ratified and confirmed.

4. No Waiver. Except as expressly provided herein, the execution, delivery and effectiveness of this Amendment shall not operate as a waiver of any right, power or remedy of any Agent or any Investor under the TAA or any other document, instrument or agreement executed in connection therewith, nor constitute a waiver of any provision contained therein, except as specifically set forth herein.

5. Governing Law. This Amendment, including the rights and duties of the parties hereto, shall be governed by, and construed in accordance with, the internal laws of the State of New York.

6. Successors and Assigns. This Amendment shall be binding upon and shall inure to the benefit of the parties hereto and their respective successors and assigns.

7. Headings. The Section headings in this Amendment are inserted for convenience of reference only and shall not affect the meaning or interpretation of this Amendment or any provision hereof.

8. Counterparts. This Amendment may be executed by the parties hereto in several counterparts, each of which shall be deemed to be an original and all of which shall constitute together but one and the same agreement. Facsimile or other electronic signature pages shall be as effective as originals.

9. Reaffirmation of Guaranty. Greif, Inc. hereby consents to the terms of this Amendment, confirms that its obligations under the Guaranty remain unaltered and in full force and effect and hereby reaffirms, ratifies and confirms the terms and conditions of the Guaranty.

[SIGNATURE PAGES FOLLOW]

IN WITNESS WHEREOF, the parties have caused this Amendment to be executed by their respective officers thereunto duly authorized, as of the date first above written.

GREIF RECEIVABLES FUNDING LLC

By: /s/ DAVID LLOYD
Name: David Lloyd
Title: Vice President and Treasurer

GREIF PACKAGING LLC,

Individually, as an Originator and as the Servicer

By: /s/ DAVID LLOYD
Name: David Lloyd
Title: Vice President and Treasurer

DELTA PETROLEUM COMPANY, INC.

as an Originator

By: /s/ DAVID LLOYD
Name: David Lloyd
Title: Vice President and Treasurer

AMERICAN FLANGE & MANUFACTURING CO., INC.,

as an Originator

By: /s/ DAVID LLOYD
Name: David Lloyd
Title: Vice President and Treasurer

**MUFG BANK, LTD. F/K/A THE BANK OF TOKYO-MITSUBISHI
UFJ, LTD.,**

as a Committed Investor, a Managing Agent and an Administrator

By: /s/CHRISTOPHER POHL
Name: Christopher Pohl
Title: Managing Director

COOPERATIEVE RABOBANK U.A., NEW YORK BRANCH

as a Committed Investor for the Rabobank Investor Group, a Managing Agent, an Administrator and the Agent

By: /s/ THOMAS MCNAMARA

Name: Thomas McNamara

Title: Executive Director

By: /s/ LAUREN WILKS

Name: Lauren Wilks

Title: Vice President

Solely with respect to Section 4.9:

GREIF, INC.

By: /s/ DAVID LLOYD

Name: David Lloyd

Title: Vice President and Treasurer

SUBSIDIARIES OF REGISTRANT

Per item 601(b)(21)(ii) of Regulation S-K, names of particular subsidiaries may be omitted if the unnamed subsidiaries, considered in the aggregate as a single subsidiary, would not constitute a significant subsidiary as of October 31, 2018. Significant subsidiaries are defined in Rule 1-02(w) of Regulation S-X.

<u>Name of Subsidiary</u>	<u>Incorporated or Organized Under Laws of</u>
<i>United States:</i>	
American Flange & Manufacturing Co, Inc.	Delaware
Greif Packaging LLC	Delaware
Greif Receivables Funding LLC	Delaware
Soterra LLC	Delaware
Greif USA LLC	Delaware
STA Timber LLC	Delaware
Container Life Cycle Management LLC	Delaware
Greif Flexibles USA Inc.	Illinois
Delta Petroleum Company, Inc.	Louisiana
Greif Nevada Holdings, Inc.	Nevada
Greif U.S. Holdings, Inc.	Nevada
Box Board Products, Inc.	North Carolina
<i>International:</i>	
Greif Algeria Spa	Algeria
Greif Argentina S.A.	Argentina
Greif Services Belgium BVBA	Belgium
Greif Packaging Belgium NV	Belgium
Greif Belgium BVBA	Belgium
Greif Flexibles Belgium NV	Belgium
Greif Insurance Company Limited	Bermuda
Greif Embalagens Industrialis Do Brasil Ltda	Brazil
Greif Bros. Canada Inc.	Canada
Greif Embalajes Industriales S.A.	Chile
Greif (Shanghai) Packaging Co., Ltd.	China
Greif (Ningbo) Packaging Co., Ltd.	China
Greif (Taicang) Packaging Co., Ltd.	China
Greif Huizhou Packaging Co., Ltd.	China
Greif Packaging Co., Ltd Zhuhai	China
Greif (Shanghai) Commercial Co., Ltd.	China
Greif China Holding Co. Ltd. (Hong Kong)	China
Greif Flexibles Changzhou Co. Ltd	China
Trisure Closure Systems China Co. Ltd.	China
Greif Colombia S.A.	Colombia
Greif Costa Rica S.A.	Costa Rica
Greif Czech Republic a.s.	Czech Republic

Greif Denmark APS	Denmark
Greif Egypt LLC	Egypt
Greif France SAS	France
Greif France Holdings SAS	France
Greif Flexibles France SARL	France
EarthMinded France S.A.S.	France
Greif Flexibles Germany GmbH & Co. KG	Germany
Greif Packaging Germany Plastics GmbH	Germany
Greif Packaging Germany GmbH	Germany
Greif Hungary Ltd.	Hungary
Pachmas Packaging Ltd	Israel
Greif Italy SRL	Italy
Greif Nevada Holdings, Inc. S.C.S.	Luxembourg
Greif Malaysia Sdn Bhd	Malaysia
Greif Holdings Sdn Bhd	Malaysia
Greif Mexico, S.A. de C.V.	Mexico
Greif Packaging Morocco S.A.	Morocco
Greif Brazil Holding B.V.	Netherlands
Greif International Holding BV	Netherlands
Greif Nederland B.V.	Netherlands
Greif Nederland B.V.	Netherlands
Greif Flexibles Asset Holding B.V.	Netherlands
Greif Flexibles Trading Holding B.V.	Netherlands
Greif Flexibles Benelux B.V.	Netherlands
Pinwheel TH Netherlands B.V.	Netherlands
Greif Plastics Ede B.V.	Netherlands
Greif Poland Sp zoo	Poland
Greif Portugal, S.A.	Portugal
Greif Flexibles Romania SRL	Romania
Greif Perm LLC	Russia
Greif Vologda LLC	Russia
Greif Saudi Arabia Ltd.	Saudi Arabia
Global Textile Company LLC	Saudi Arabia
Greif Eastern Packaging Pte. Ltd.	Singapore
Greif Singapore Pte Ltd	Singapore
Greif South Africa Pty Ltd	South Africa
Greif Packaging Spain S.L.	Spain
Greif Investments S.L.	Spain
Greif Packaging Spain SL	Spain
Greif Sweden AB	Sweden
Greif Mimaysan Ambalaj Sanayi AS	Turkey
Greif FPS Turkey Ambalaj Sanahyi ve Ticaret A.S.	Turkey
Greif UK Holding Ltd.	United Kingdom
Greif UK International Holding Ltd.	United Kingdom
Greif UK Ltd.	United Kingdom
Greif Flexibles UK Ltd.	United Kingdom

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We consent to the incorporation by reference in Registration Statement Nos. 333-26767, 333-26977, 333-35048, 333-61058, 333-61068, 333-123133, and 333-151475 on Form S-8 of our reports relating to the consolidated financial statements and financial statement schedule of Greif, Inc. and subsidiary companies, and the effectiveness of Greif, Inc. and subsidiary companies' internal control over financial reporting dated December 20, 2018, appearing in the Annual Report on Form 10-K of Greif, Inc. and subsidiary companies for the year ended October 31, 2018.

/s/ Deloitte & Touche LLP

Columbus, Ohio
December 20, 2018

CERTIFICATION

I, Peter G. Watson, certify that:

1. I have reviewed this Annual Report on Form 10-K 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 (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: December 20, 2018

/s/ Peter G. Watson

Peter G. Watson

President and Chief Executive Officer

(principal executive officer)

CERTIFICATION

I, Lawrence A. Hilsheimer, certify that:

1. I have reviewed this Annual Report on Form 10-K 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 (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: December 20, 2018

/s/ Lawrence A. Hilsheimer

Lawrence A. Hilsheimer
Executive Vice President and Chief Financial Officer
(principal financial officer)

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 Annual Report of Greif, Inc. (the "Company") on Form 10-K for the annual period ended October 31, 2018, 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: December 20, 2018

/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.

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 Annual Report of Greif, Inc. (the "Company") on Form 10-K for the annual period ended October 31, 2018, as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Lawrence A. Hilsheimer, Executive Vice President and 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: December 20, 2018

/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.