LIBBEY®

2016 ANNUAL REPORT

CREATING MOMENTUM

Over the years, we have strengthened our ability to create moments people can cherish. We are refocusing that power, creating momentum with the energy to propel us into a whole new era.

Wherever people come together to eat, drink or celebrate, Libbey wants to be there. For nearly 200 years, we have provided products that enhance those everyday moments. Our brand is known around the world.

Yet, we aren't content to rest on our legacy. Now, more than ever, we're committed to understanding the needs and wishes of customers and consumers. Together, the Libbey team is creating rewarding experiences for more of life's moments with unsurpassed service, product innovations and business excellence.

William A. Foley
Chairman and Chief Executive Officer

March 3, 2017

Dear Fellow Shareholders,

2016 was an exciting, yet challenging, year for Libbey as we focused on the transformation of our business. Our objective to become a fast-moving, market-focused company with improved margins and greater cash flow was supported by our commitment to delivering on our 2016 strategic priorities, which included improving our marketing and new product development capabilities and innovation to drive growth; getting closer to our customers and improving business relationships; and simplifying the business to become more competitive in a challenging global marketplace.

While we made significant progress on our strategic priorities, we continued to face a number of challenges that impacted our financial results. For the full year, we reported net sales of $793.4 million, a decrease of 3.5 percent year over year (or a decrease of 1.1 percent excluding the impact of currency) and our net income was $10.1 million. Our Adjusted EBITDA for 2016 was $109.8 million, compared to $116.1 million in 2015. The drivers of the decline in Adjusted EBITDA included planned lower manufacturing activity and the negative impact of currency devaluation, primarily the Mexican peso. Additionally, declining restaurant traffic, an increasing shift in retail sales away from traditional brick-and-mortar stores toward e-commerce, a highly competitive pricing environment and a work stoppage at our Toledo manufacturing facility all impacted our results.

Despite a mixed performance, we remained committed to returning value to our shareholders in 2016. During the year, we distributed $12.1 million of free cash flow through share repurchases and dividends. We also repaid $24.4 million of debt and reduced trade working capital by $17.3 million. We also began to make substantial operational and organizational improvements throughout the year to drive our strategic priorities, address a number of the legacy issues within our business and position Libbey for future growth.

To stay relevant with our customers and consumers and drive growth, it is critical that we consistently offer innovative products that meet their needs. Therefore, strengthening our marketing and new product capabilities was a strategic priority for us in 2016. We set out to do this early in the year by implementing a new product development process designed to help us build a sustainable pipeline of new products in support of our future growth. In less than a year, the result has been significant. By focusing directly on our customers' needs, we have built a robust pipeline of new product and segment opportunities that we believe will enable us to go to market with a higher rate of success as we drive toward consistent organic growth.

Last year, we outlined a strategic priority to get closer to our customers and improve business relationships. We took a number

of steps to make that happen, including upgrading talent in critical customer-facing roles and actively working on our customer relationships at all levels to better understand and respond to their needs. We believe that these types of improvements are helping to reinforce and strengthen our relationships across a broad cross-section of customers in each of our channels, ultimately contributing to new opportunities and an improved sales performance.

Our final strategic priority for 2016 was to simplify the business, and we made several important operational decisions to help us compete more effectively in a challenging global marketplace. The most significant was our decision to consolidate some of our furnaces to optimize our capacity footprint and better align with demand. Over the course of the year, we announced plans to shut down three of our older furnaces and rebuild one. This initiative reduces the long-term demand for capital to rebuild furnaces, while also improving our return on invested capital.

To further simplify our business, we took steps to optimize our product portfolio and reduce inventories in 2016. As a result, we reduced our number of active SKUs by approximately 20 percent by eliminating products that were not contributing meaningfully to our business.

While we made significant progress on our 2016 strategic priorities, we recognize that we have a long way to go to fully address the legacy issues that have hampered our business and to overcome the challenges of our current environment and position Libbey for sustainable, profitable growth. I am proud of the work our team did last year. I believe we have set a foundation for positive change that will help guide our work in the years ahead.

In 2017, we are focused on creating momentum toward sustainable growth and operational and organizational excellence. The world we are operating in is far different than it was just a few years ago. Doing more of the same as we have for the last decade has not worked and will not work going forward. This year, we will take some critical steps to position our business for growth. We are evolving as a company and we are confident that the actions we take this year will help propel us into a whole new era.

We are operating in a dynamic and highly competitive environment. While Libbey maintains a number-one retail market share position in U.S. casual beverageware, the migration of traditional brick-and-mortar consumer purchasing to e-commerce is creating a paradigm shift with some of our largest and most important retail customers. In foodservice, we are seeing declines in restaurant traffic that are expected to continue as consumers decide to dine and entertain at home or on-the-go rather than head out for a drink or meal.

To overcome the challenges we face, we recognize that there are a number of investments we must make to protect our business and allow us to take advantage of new growth opportunities. Among the most significant of these is the investment in our e-commerce platform. We have launched a major initiative to begin to build our e-commerce capability and compete effectively in a digital environment. Our existing internet sales through traditional retailer websites, internet retailers and Libbey's

own website are small today, but we plan to increase our presence in this area and build a long-term growth opportunity.

Another critical initiative for Libbey in 2017 is to begin the implementation of a new enterprise resource planning system in North America. We have historically underinvested in information technology and we are taking steps to address the need for contemporary information management to ensure the long-term health of our Company. We are working to build a flexible supply network that delivers excellence in product quality, service, information and planning. At the same time, we will not lose our focus on identifying opportunities to lower our costs and improve operating performance, working capital efficiency and optimization of our manufacturing network to maximize profitability and return on invested capital.

The work we began in 2016 to improve our new product development and marketing capabilities will be never ending. Our efforts to overcome retail headwinds are centered upon expansion into some of our adjacent categories such as bakeware, storageware, barware, dinnerware, flatware and expanded beverageware lines that are beginning to come through our new product pipeline. We will be introducing these exciting new products at major trade shows throughout the year.

To move the organization forward and ensure our success, it is imperative that we have the right people in the right teams. We must continue to attract and retain a diverse workforce of capable leaders who reflect our core values of customer first, continuous improvement, accountability, collaboration and innovation, while aligning the goals of the organization to build a high-performance culture.

We are excited about our future. We believe that we have a strong plan to strengthen our Company, create consistent growth and increase our profitability for years to come. We are committed to improving the efficiency of our operations with continuous improvement measures and new technologies that will create new market opportunities, help us control costs and enable our business to drive long-term financial performance improvements.

For our shareholders, our customers and consumers, and our associates around the world we are grateful. Your continued support and encouragement helps us to inspire the moments that bring people together to eat, drink and celebrate. We thank you for being part of this journey.

Best regards,

REMEMBERING

John F. Meier

(1947-2017)

In March 2017, Libbey lost its beloved, long-time leader John Meier. Before retiring in 2011, John spent his entire 41-year career with Libbey and led the company as CEO for more than two decades. John became Libbey's first CEO when the company was spun off from Owens-Illinois in 1993. Under his leadership, the company expanded globally and grew from $350 million to $800 million in annual sales. In addition to his many accomplishments, John will forever be remembered as the courageous and compassionate leader who shaped the foundation of our company and its culture.

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

FORM 10-K

☑ **ANNUAL REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934**
For the fiscal year ended December 31, 2016

or

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

Commission file number 1-12084

Libbey Inc.

(Exact name of registrant as specified in its charter)

Delaware	**34-1559357**
(State or other jurisdiction of incorporation or organization)	*(IRS Employer Identification No.)*

300 Madison Avenue, Toledo, Ohio 43604
(Address of principal executive offices) (Zip Code)

419-325-2100
(Registrant's telephone number, including area code)

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

Title of Each Class	**Name of Each Exchange on Which Registered**
Common Stock, $.01 par value	NYSE MKT

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 Act. Yes ☐ No ☑

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

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

Indicate by check mark if disclosure of delinquent filers pursuant to Item 405 of Regulation S-K (§229.405 of this chapter) is not contained herein, and will not be contained, to the best of registrant's knowledge, in definitive proxy or information statements incorporated by reference in Part III of this Form 10-K or any amendment to this Form 10-K. ☑

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

Large Accelerated Filer ☐ Accelerated Filer ☑ Non-Accelerated Filer ☐ Smaller reporting company ☐
(Do not check if a smaller reporting company)

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

The aggregate market value (based on the consolidated tape closing price on June 30, 2016) of the voting stock beneficially held by non-affiliates of the registrant was approximately $342,869,963. For the sole purpose of making this calculation, the term "non-affiliate" has been interpreted to exclude directors and executive officers of the registrant. Such interpretation is not intended to be, and should not be construed to be, an admission by the registrant or such directors or executive officers that any such persons are "affiliates" of the registrant, as that term is defined under the Securities Act of 1934.

The number of shares of common stock, $.01 par value, of the registrant outstanding as of February 24, 2017 was 21,864,541.

DOCUMENTS INCORPORATED BY REFERENCE

Certain information required by Items 10, 11, 12, 13 and 14 of Form 10-K is incorporated by reference into Part III hereof from the registrant's Proxy Statement for the Annual Meeting of Shareholders to be held May 17, 2017 ("Proxy Statement").

Certain information required by Part II of this Form 10-K is incorporated by reference from registrant's 2016 Annual Report to Shareholders where indicated.

TABLE OF CONTENTS

PART I

Item 1.	BUSINESS	3
	EXECUTIVE OFFICERS OF THE REGISTRANT	9
Item 1A.	RISK FACTORS	11
Item 1B.	UNRESOLVED STAFF COMMENTS	22
Item 2.	PROPERTIES	22
Item 3.	LEGAL PROCEEDINGS	23
Item 4.	MINE SAFETY DISCLOSURES	23

PART II

Item 5.	MARKET FOR REGISTRANT'S COMMON EQUITY, RELATED STOCKHOLDER MATTERS, AND ISSUER PURCHASES OF EQUITY SECURITIES	23
Item 6.	SELECTED FINANCIAL DATA	25
Item 7.	MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS	26
Item 7A.	QUALITATIVE AND QUANTITATIVE DISCLOSURES ABOUT MARKET RISK	45
Item 8.	FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA	46
Item 9.	CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE	93
Item 9A.	CONTROLS AND PROCEDURES	93
Item 9B.	OTHER INFORMATION	94

PART III

Item 10.	DIRECTORS, EXECUTIVE OFFICERS AND CORPORATE GOVERNANCE	94
Item 11.	EXECUTIVE COMPENSATION	94
Item 12.	SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS	94
Item 13.	CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE	95
Item 14.	PRINCIPAL ACCOUNTING FEES AND SERVICES	95

PART IV

Item 15.	EXHIBITS AND FINANCIAL STATEMENT SCHEDULES	96
Item 16.	FORM 10-K SUMMARY	96

SIGNATURES 97

This Annual Report on Form 10-K, including "Management's Discussion and Analysis of Financial Condition and Results of Operations," contains forward-looking statements regarding future events and future results that are subject to the safe harbors created under the Securities Act of 1933, as amended, and the Securities Exchange Act of 1934, as amended. Libbey desires to take advantage of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. These statements are based on current expectations, estimates, forecasts and projections, and the beliefs and assumptions of our management. Words such as "expect," "anticipate," "target," "believe," "intend," "may," "planned," "potential," "should," "will," "would," variations of such words, and similar expressions are intended to identify these forward-looking statements. In addition, any statements that refer to projections of our future financial performance, our anticipated growth and trends in our businesses, and other characterizations of future events or circumstances are forward-looking statements. Readers are cautioned that these forward-looking statements are only predictions and are subject to risks, uncertainties and assumptions that are difficult to predict. Therefore, actual results may differ materially and adversely from those expressed in any forward-looking statements. We undertake no obligation to revise or update any forward-looking statements for any reason.

PART I

Item 1. Business

General

Libbey Inc. (Libbey or the Company) is a global leader in the design, production and sale of tableware and other products. We manufacture glass tableware and related products at our two plants in the United States as well as our plants located in Mexico (Libbey Mexico), the Netherlands (Libbey Holland), Portugal (Libbey Portugal) and China (Libbey China). We believe that our glass tableware manufacturing, distribution and service network is the largest in the Western Hemisphere and is among the largest in the world. We also source glass tableware, ceramic dinnerware, metal flatware, hollowware and serveware products globally. We sell our products in more than 100 countries across the globe. Our extensive line of tabletop and other products are sold globally under the Libbey®, Libbey Signature®, Masters Reserve®, World® Tableware, Syracuse® China, Crisa®, Royal Leerdam®, Crisal Glass® and other brand names primarily in the foodservice, retail and business-to-business channels. See note 19 to the Consolidated Financial Statements for segment and geographic information.

Libbey was incorporated in Delaware in 1987, but traces its roots back to The W. L. Libbey & Son Company, an Ohio corporation formed in 1888, when it began operations in Toledo, Ohio.

Our website can be found at www.libbey.com. We make available, free of charge, at this website all of our reports filed or furnished pursuant to Section 13(a) or 15(d) of the Securities Exchange Act of 1934, including our annual report on Form 10-K, our quarterly reports on Form 10-Q and our current reports on Form 8-K, as well as amendments to those reports. These reports are made available on our website as soon as reasonably practicable after their filing with, or furnishing to, the Securities and Exchange Commission and can also be found at www.sec.gov.

Our shares are traded on the NYSE MKT exchange under the ticker symbol LBY.

Strategic Initiatives

Our strategy is focused on the following three key areas that we believe are critical to achieving sustainable, profitable growth across all our market segments:

- improving our capabilities in new product development and innovation to drive growth
- getting closer to our customers and improving business relationships and
- simplifying our business to become more competitive in a challenging global marketplace

In order to improve our capabilities to drive growth through innovation, we have augmented our marketing organization to drive enhanced market insight and established improved new product development capabilities.

In the U.S. and Canada we believe we have competitive advantages, including leading market share and best-in-class service in the foodservice channel. We expect to extend these advantages by enhancing customer focus and introducing differentiated new products as we seek to increase our share in existing product categories, such as ceramic ware and metalware, and to extend our presence to an even broader range of foodservice venues than we have served historically. We are also an established foodservice supplier in the regions of Latin America; Europe, the Middle East and Africa (EMEA); and Asia Pacific, areas that we expect to benefit from our enhanced customer focus, new products and adjacencies tailored to increase share.

In the U.S. and Canada we are the casual glass beverageware leader in the retail channel and enjoy high brand recognition. We are working to achieve improved competitive positioning given challenging industry trends. Our product innovation and planned digital capability enhancements will provide important support to our growth efforts. We seek to continue to increase our share and profitability of our core Mexican retail channel by leveraging our leading market position and superior brand portfolio. Retail is also an important channel for our EMEA business where we compete with well recognized brands.

In the U.S. and Canada business-to-business channel, we are selectively developing supply relationships with customers in growing houseware product categories that include glass as a component such as candles, decorated beverageware and floral applications. This initiative extends beyond our global presence as a supplier of glassware that is decorated for promotions and our Latin American role as an OEM supplier to U.S. appliance manufacturers.

In each of our markets, we are making significant strides in enhancing our customer focus and responsiveness. We are seeking customer feedback, providing more consistent engagement and spending increased time to better understand our customers' current and future needs.

We are continuing our efforts to simplify our business and remove non-value-added complexity in order to improve profitability, cash generation and return on invested capital. To this end, we continue to focus on improving operating efficiencies, eliminating waste, reducing working capital and instilling a culture of continuous improvement in all aspects of our operations. For example, in 2016 we implemented a global product portfolio optimization initiative that included discontinuing under-performing stock-keeping units representing 20 percent of the global product portfolio. At the same time, we improved our product life-cycle management processes to improve the focus of our marketing teams and sales force and to reduce costs. In addition, we are reviewing our global production network for further opportunities to optimize our global network, reduce capital commitments and lower operating costs.

We are on a mission to become more market-driven as we seek to transform into one of the most innovative tabletop companies. In 2017, we will continue to create momentum executing on our growth, operational and organizational initiatives.

Products

Our products include glass tableware products that we produce at our six manufacturing facilities globally and glassware, ceramicware, metalware and other tabletop products that we source globally. Glass tableware products include products such as tumblers, stemware, mugs, bowls, vases, salt and pepper shakers, shot glasses, canisters, candleholders and other items. Other glass products include storageware, serveware, bakeware, handmade glass tableware and components sold to original equipment manufacturers (OEMs), such as blender jars, mixing bowls and washing machine windows. We also offer a wide range of ceramic dinnerware products. These include plates, bowls, platters, cups, saucers and other tabletop accessories. In addition, we offer an extensive selection of metal flatware, including knives, forks, spoons and serving utensils, and metal hollowware, which includes such items as serving trays, pitchers and other metal tabletop accessories.

In recent years we have invested in proprietary ClearFire® technology at our Shreveport, Louisiana facility to manufacture premium glass tableware suitable for fine dining and other uses. We sell these products in the foodservice channel under the Masters Reserve® brand and in retail under the Libbey Signature® brand.

We have developed a complete premium tabletop offering called the Artistry Collection™ that is targeted to serve fine dining establishments and event venues in the foodservice channel. It combines our Masters Reserve® brand glassware with other leading brands of fine tabletop products sourced through the following exclusive distribution agreements:

- Spiegelau and Nachtmann glassware and serveware products in the U.S. foodservice channel. Spiegelau is known for its fine stemware and other drinkware assortments. Nachtmann offers a variety of upscale serveware, decorative products, stemware and drinkware for finer dining establishments.

- Schönwald dinnerware products in the U.S. and Canada. Schönwald is one of the world's leading providers of high-end porcelain and bone china for food service.

- Reed & Barton flatware products in the U.S. and Canada. Reed & Barton is one of the oldest and largest privately-held tabletop and giftware companies.

Customers

We believe that our regional market segment organization allows us to better understand and serve our customers' needs.

In the U.S. and Canada, customers for our tableware products include approximately 500 foodservice distributors in the United States and Canada and around the world who sell primarily to restaurants, bars, hotels and other foodservice venues. In retail, we sell to mass merchants, department stores, retail distributors, national retail chains and specialty housewares stores. Additionally, in the business-to-business channel, we sell to a variety of customers, including companies using glass in candle and floral applications.

In Latin America, we sell to retail customers including mass merchants and wholesale distributors; to a wide variety of business-to-business customers who use glass products in promotions, catalogues, candles, food packing and various OEM uses; and to foodservice distributors.

In EMEA, we sell glassware to retailers, distributors and decorators that service the retail, foodservice and business-to-business channels, including large breweries and distilleries decorating products with company logos for promotional and resale purposes.

We also sell products in the Asia Pacific region primarily to distributors and wholesalers.

No single customer accounts for 10 percent or more of our sales, although the loss of any of our major customers could have a meaningful effect on us.

Competition

The markets for our products are highly competitive in all our geographic segments. Our competitors include: other glass tableware manufacturers, including large multinational companies such as Arc International (a French company) and Paşabahçe (a unit of Şişecam Holdings, a Turkish company), the Oneida Group (a U.S. company), AnHui DeLi Glassware Co., Ltd. (a Chinese company), Vidrieria Y Cristaleria De Lamiaco, S.A.- VICRILA (a Spanish company) and various other manufacturers in Europe, Asia Pacific and the Americas; ceramic dinnerware and metalware manufacturers throughout the world, including Homer Laughlin, the Oneida Group, Steelite and others; and a variety of sourcing or marketing companies. In addition, other products such as plastic and melamine compete with our glass and ceramic tabletop products. The principal competitive factors are our installed base, customer service, price, product quality, new product development, brand name, responsiveness, delivery time and breadth of product offerings.

Softer global demand and industry overcapacity among tabletop product manufacturers have led to intensified price competition and irrational pricing behavior in all channels of our distribution. In the U.S., the relative strength of the dollar versus other world currencies has improved the ease with which foreign manufacturers can sell products into the U.S. at competitive prices.

Sales, Marketing and Distribution

In 2016, approximately 76 percent of our sales were to customers located in North America (U.S., Canada and Mexico) and approximately 24 percent of our sales were to customers in other countries. We sell our products in over 100 countries around the world. We employ our own sales force to call on customers and distributors. In addition, we occasionally retain the services of manufacturer's representative organizations to assist in selling our products. We have marketing staff located at our corporate headquarters in Toledo, Ohio, as well as in Mexico, Portugal, the Netherlands and China.

We operate distribution centers located at or near each of our manufacturing facilities (see “Properties” below). In addition, we operate a distribution center in Laredo, Texas, and one in West Chicago, Illinois. The glass tableware manufacturing and distribution centers are strategically located to facilitate supplying significant quantities of our product to customers on a timely and cost effective basis.

The majority of our sales are in the foodservice, retail and business-to-business channels, which are further detailed below.

Foodservice

We have, according to our estimates, the leading market share in glass tableware sales in the U.S. and Canadian foodservice channel, placing us among the leading tabletop suppliers across the globe. A majority of our tabletop sales to foodservice

establishments are made through a network of foodservice distributors. Our strong foodservice distributor network and in-house sales force provide broad coverage of a wide variety of foodservice establishments including restaurants, bars, hotels and other travel and tourism venues.

Retail

Our primary customers in the retail channel include mass merchants, specialty housewares stores and value-oriented retailers in the U.S. and across the globe. Based on data from the Retail Tracking Services of NPD Group, we maintain the leading U.S. casual glass beverageware market share. We believe that our established relationships with major retailers, particularly in the U.S. and Canada, Latin America and EMEA, position us to successfully introduce differentiated new retail products to pursue increased share and profitability. We also operate outlet stores in the U.S. and Mexico and make sales via Internet retailers.

Business-to-Business

Libbey Holland and Libbey Portugal supply glass tableware to the business-to-business channel of distribution in Europe. Customers in this channel include marketers who decorate our glassware with company logos and resell these products to large breweries and distilleries, which redistribute the glassware for promotional purposes and resale. Our customers for products sold in the business-to-business channel in Latin America and the U.S. and Canada include drink companies and custom decorators of glassware for promotional purposes and resale. Additionally, our products sold in the business-to-business channel include products for candle and floral applications, blender jars and washing machine windows. The craft industries and gourmet food-packing companies are also among our business-to-business glassware consumers.

Seasonality

Our sales and operating income tend to be stronger in the last three quarters of each year and weaker in the first quarter of each year, primarily due to the impact of consumer buying patterns and production activity. This seasonal pattern causes accounts receivable to be higher in the second half of the year and lower during the first half of the year.

We typically build inventory during the first half of the year to allow for optimum customer service and timely delivery in the second half of the year, a higher demand period when orders may exceed short-term production capabilities. We also build inventory to service customers during periods of planned downtime for furnace rebuilds or maintenance. Accounts payable do not generally fluctuate significantly on a seasonal basis.

Although little information with respect to our competitors is publicly available, we believe that our experience with working capital is generally consistent with the experience of the industry as a whole.

Backlog

As of December 31, 2016, our backlog was approximately $89.7 million, compared to approximately $92.7 million at December 31, 2015. The decrease was primarily due to currency translation effects and reduced order backlog for our retail channel. Backlog includes orders confirmed with a purchase order for products scheduled to be shipped to customers in a future period. Because orders may be changed and/or canceled, we do not believe that our backlog is necessarily indicative of actual sales for any future period and expect that the majority of these orders will be fulfilled within the current year.

Manufacturing and Sourcing

In North America, we currently own and operate three glass tableware manufacturing plants, two of which are located in the United States (one in Toledo, Ohio, and one in Shreveport, Louisiana) and one of which is located in Monterrey, Mexico. In Europe, we own and operate two glass tableware manufacturing plants, one of which is located in Leerdam, the Netherlands, and the other of which is located in Marinha Grande, Portugal. In Asia, we own and operate a glass tableware production facility in Langfang, China.

The manufacture of our tableware products involves the use of automated processes and technologies, as well as manual production. We design much of our glass tableware production machinery, and we continuously refine it to incorporate technological advances to create a competitive advantage. We believe that our production machinery and equipment continue to be adequate for our needs for the foreseeable future, but we continue to invest to further improve our products, gain production efficiencies and reduce our cost profile.

Our glass tableware products generally are produced using one of two manufacturing methods, commonly referred to as "blown" or "pressed". In the case of certain stemware, we may use a combination of these methods. Most of our tumblers, stemware and other glass tableware products are "blown", meaning that they are produced by forming molten glass in molds with the use of compressed air. Our other glass tableware products and the stems of certain stemware are “pressed”, meaning that they are produced by pressing molten glass into the desired product shape.

To assist in the manufacturing process, we employ a team of engineers whose responsibilities include efforts to improve and upgrade our manufacturing facilities, equipment and processes. In addition, they provide engineering required to manufacture new products and implement the large number of innovative changes continuously being made to our product designs, sizes and shapes. See “Research and Development” below for additional information.

Ceramic dinnerware and metal flatware and hollowware are sourced primarily from the Asia Pacific region.

Materials

Our primary materials are sand, lime, soda ash, corrugated packaging and colorants. Historically, these materials have been available in adequate supply from multiple sources. However, there may be temporary shortages of certain materials due to weather or other factors, including disruptions in supply caused by material transportation or production delays. Such shortages have not had, and are not expected in the future to have, a material adverse effect on our operations. Natural gas is the primary source of energy in our production processes, and periodic variability in the price for natural gas has had and could continue to have an impact on our profitability. Historically, we have used natural gas hedging for a portion of our expected purchases to partially mitigate this impact in North America and Europe. We also experience fluctuations in the freight cost to deliver materials due primarily to the cost of diesel fuel to our facilities, and such changes may affect our earnings and cash flow.

Research and Development

Our research and development efforts focus on developing new, differentiated and innovative products to meet customers' and consumers’ needs. Our product development efforts begin with consumer insights, and we have been investing to strengthen these capabilities. Our focus is to increase the quality of our products, develop innovative new product offerings and enhance the profitability of our business through research and development, including adjacent technology, safety and risk mitigation techniques. We will continue to invest in strategic research and development projects that will further enhance our ability to compete in our core business.

In addition, our core competencies include our glass engineering excellence and world-class manufacturing development techniques. We employ a team of engineers, in addition to external consultants and university collaboration studies in sciences, to conduct research and development. Our expenditures on research and development activities related to new and/or improved products and processes were $4.3 million, $6.1 million and $6.2 million in 2016, 2015 and 2014, respectively. These costs were expensed as incurred.

Patents, Trademarks and Licenses

Based upon market research and surveys, we believe that our trade names and trademarks, as well as our product shapes and styles, enjoy a high degree of consumer recognition and are valuable assets. We believe that the Libbey®, Libbey Signature®, Masters Reserve®, Syracuse® China, World® Tableware, Crisa®, Royal Leerdam® and Crisal Glass® trade names and trademarks are material to our business.

We have rights under a number of patents that relate to a variety of products and processes. However, we do not consider that any patent or group of patents relating to a particular product or process is of material importance to our business as a whole.

Environmental Matters

Our operations, in common with those of industry generally, are subject to numerous existing laws and governmental regulations designed to protect the environment, particularly regarding plant waste, emissions and solid waste disposal and remediation of contaminated sites. We believe that we are in material compliance with applicable environmental laws, and we are not aware of any regulatory initiatives that we expect will have a material effect on our products or operations. See “Risk Factors-We are subject to various environmental legal requirements and may be subject to new legal requirements in the future; these requirements could have a material adverse effect on our operations.”

We have shipped, and we continue to ship, waste materials for off-site disposal. However, we are not named as a potentially responsible party with respect to any waste disposal site matters pending prior to June 24, 1993, the date of Libbey's initial public offering and separation from Owens-Illinois, Inc. (Owens-Illinois). Owens-Illinois has been named as a potentially responsible party or other participant in connection with certain waste disposal sites to which we also may have shipped wastes prior to June 24, 1993. We may bear some responsibility in connection with those shipments. Pursuant to an indemnification agreement between Owens-Illinois and Libbey, Owens-Illinois agreed to defend and hold us harmless against any costs or liabilities we may incur in connection with any such matters identified and pending as of June 24, 1993, and to indemnify us for any liability that results from these matters in excess of $3.0 million.

Syracuse China Environmental Matters

On October 10, 1995, pursuant to an Asset Purchase Agreement, or APA, Syracuse China Company, our wholly-owned subsidiary, acquired from The Pfaltzgraff Co. (now known as TPC York, Inc., which we refer to as "TPC York") and certain of its subsidiary corporations, the assets operated by them as Syracuse China.

By letter dated October 31, 2008, the DEC and U.S. Environmental Protection Agency, which we refer to as the EPA, made a demand upon Syracuse China and several other potentially responsible parties, or "PRPs," for recovery of approximately $12.5 million of direct and indirect costs allegedly expended by the DEC and EPA in connection with the lake bottom subsite (which we refer to as the Onondaga Lake Bottom subsite) of the Onondaga Lake Superfund Site. In February 2013, Syracuse China, TPC York and Honeywell International Inc., which we refer to as Honeywell, entered into an agreement to settle certain claims relating to the Onondaga Lake Bottom subsite, which Honeywell previously undertook to remediate. Under that Settlement Agreement, Honeywell has agreed to indemnify Syracuse China with respect to certain claims that may be made by any government or third party with respect to the Onondaga Lake Bottom subsite.

By letter dated October 30, 2009, the EPA notified Syracuse China and several other PRPs of potential liability for response costs in connection with the Lower Ley Creek subsite ("Ley Creek Subsite") of the Onondaga Lake Superfund Site. Since that date, the EPA has completed its Remedial Investigation (RI), Feasibility Study (FS), Risk Assessment (RA) and Proposed Remedial Action Plan (PRAP). The EPA issued its Record of Decision (RoD) on September 30, 2014. The RoD indicates that the EPA's estimate of the undiscounted cost of remediation ranges between approximately $17.0 million (assuming local disposal of contaminated sediments is feasible) and approximately $24.8 million (assuming local disposal is not feasible). However, the RoD acknowledges that the final cost of the cleanup will depend upon the actual volume of contaminated material, the degree to which it is contaminated, and where the excavated soil and sediment is properly disposed. In connection with the General Motors Corporation bankruptcy, the EPA recovered $22.0 million (which we refer to as the "GM Settlement Funds") from Motors Liquidation Company ("MLC"), the successor to General Motors Corporation. If the cleanup costs do not exceed the amount recovered by the EPA from MLC, Syracuse China may suffer no loss. If and to the extent the cleanup costs exceed the amount recovered by the EPA from MLC, it is not yet known whether other PRPs will be added to the current group of PRPs or how any excess costs may be allocated among the PRPs.

On March 3, 2015, the EPA issued to the PRPs notices and requests to negotiate performance of the remedial design (RD), work. The notices contemplate that any agreement to perform the RD work would be memorialized in an Administrative Order on Consent (AOC). On July 14, 2016, the PRPs entered into an AOC to perform the RD work. The EPA and PRPs anticipate that the RD work will produce additional information from which the feasibility of a local disposal option and the cleanup costs can be better determined. The EPA has declined to advance the GM Settlement Funds for the RD work, instead conditioning use of those funds to reimburse for the RD work upon the successful completion of the RD work and the finalization of an AOC to perform the remedial action work.

To the extent Syracuse China is liable for any costs in connection with the remediation of the Ley Creek Subsite, including without limitation costs to fund the RD work, and to the extent such costs are not reimbursed from the GM Settlement Funds, then pursuant to the APA Syracuse China and TPC York will share such costs up to an aggregate of $7.5 million. We believe that collection of the amounts for which TPC York is liable under that indemnification is probable.

In connection with the above proceedings, an estimated environmental liability of $0.9 million and a recoverable amount of $0.5 million in other long term assets have been recorded in the Consolidated Balance Sheet at December 31, 2016. An estimated liability of $1.1 million and a recoverable amount of $0.6 million in other long term assets have been recorded in the Consolidated Balance Sheet at December 31, 2015. An immaterial amount, $0.2 million and $0.3 million have been recorded in cost of sales in the Consolidated Statements of Operations for the years ended December 31, 2016, 2015 and 2014, respectively. Although we cannot predict the ultimate outcome of this proceeding, we believe that it will not have a material adverse impact on our financial condition, results of operations or liquidity.

Other

We regularly review the facts and circumstances of the various environmental matters affecting us, including those covered by indemnification. Although not free of uncertainties, we do not expect, based upon the number of parties involved at the sites and the estimated cost, based upon known technology and the experience of others, of undisputed work necessary for remediation, to incur material loss for new matters in the future. There can be no assurance, however, that indemnification agreements will be performed in accordance with their terms. We believe that any future expenditures for environmental matters will not have a material adverse effect on our financial position or results of operations.

In addition, occasionally the federal government and various state authorities have investigated possible health issues that may arise from the use of lead or other ingredients in enamels such as those used on the exterior surface of our decorated products. In that connection, Libbey Glass Inc. and numerous other glass tableware manufacturers, distributors and importers entered into a consent judgment on August 31, 2004 in connection with an action, Leeman v. Arc International North America, Inc. *et al*, Case No. CGC-003-418025 (Superior Court of California, San Francisco County) brought under California's so-called "Proposition 65." Proposition 65 requires businesses with ten or more employees to give a "clear and reasonable warning" prior to exposing any person to a detectable amount of a chemical listed by the state as covered by this statute. Lead is one of the chemicals covered by that statute. Pursuant to the consent judgment, Libbey Glass Inc. and the other defendants (including Anchor Hocking and Arc International North America, Inc.) agreed, over a period of time, to reformulate the enamels used to decorate the external surface of certain glass tableware items to reduce the lead content of those enamels. To the extent applicable to our products, we comply with these requirements.

Although we continue to modify our manufacturing processes and technologies in an effort to reduce our emissions and increase energy efficiency, capital expenditures for property, plant and equipment for environmental control activities were not material during 2016 or 2015 and are not expected to increase significantly in 2017.

Employees

We employed 6,237 persons at December 31, 2016. Approximately 71 percent of our employees are employed outside the U.S. The majority of our employees are paid hourly and covered by collective bargaining agreements. The total number of employees under a collective bargaining agreement expiring within one year is approximately 12 percent of Libbey's total workforce. Our collective bargaining agreements with unionized employees expire on June 30, 2017 in the Netherlands; December 15, 2017 in Shreveport, Louisiana; and September 30, 2019 in Toledo, Ohio. In Mexico collective bargaining agreements have no expiration, but wages are reviewed annually and benefits every two years. In Portugal and China we have no written collective bargaining agreement with our unionized employees, but there are consultations with the unions on various matters. We believe that our relations with our employees are good.

Executive Officers of the Registrant

Our executive officers have a wealth of business knowledge, experience and commitment to Libbey.

Name and Title	**Professional Background**
Annunciata Cerioli. . . . . Vice President, Chief Supply Chain Officer	Ms. Cerioli, 55, joined Libbey as Vice President, Chief Supply Chain Officer, on December 1, 2014. Ms. Cerioli came to Libbey from Borden Dairy Co., where she served as Senior Vice President Supply Chain since August 2011. Previously, Ms. Cerioli held various positions at the Kellogg Company (NYSE: K), which she joined in 1990. Ms Cerioli's most recent role at Kellogg was Senior Vice President Supply Chain for the Kellogg Morning Food Division, Kellogg's largest business unit, a position she held from October 2009 to January 2011. Other roles with Kellogg included Vice President, Manufacturing, Snacks Division from 2008 to 2009, Director of Manufacturing, Kellogg Europe from 2005 to 2008, and various earlier positions in the manufacturing, supply chain and human resources departments of Kellogg and its international affiliates and subsidiaries.

Name and Title	Professional Background
William A. Foley Chief Executive Officer and Chairman of the Board	Mr. Foley, 69, has been Chief Executive Officer and Chairman of the Board of Libbey since January 12, 2016. Before assuming the role as Chief Executive Officer and Chairman of the Board, Mr. Foley served as Independent Chairman of the Board since August 2011 and a Director since 1994. Mr. Foley served as Chairman and Chief Executive Officer of Blonder Accents, LLC from June 2011 until November 2011 and served as Chairman and Chief Executive Officer of Blonder Company from 2008 until June 2011. Previously, Mr. Foley was President and a director of Arhaus, Inc.; co-founder of Learning Dimensions LLC; Chairman and Chief Executive Officer of LESCO Inc.; and Chairman and Chief Executive Officer of Think Well Inc. Mr. Foley also fulfilled the roles of Vice President, General Manager for The Scotts Company Consumer Division, and Vice President and General Manager of Rubbermaid Inc.'s Specialty Products division. Mr. Foley spent the first 14 years of his career with Anchor Hocking Corp. in various positions, including Vice President of Sales & Marketing of the Consumer and Industrial Products Group. Mr. Foley is a member of the Board of Directors of Myers Industries, Inc. (NYSE: MYE) (since 2010) and is President of the Indiana University Foundation Board of Associates (since 2006).
Susan A. Kovach Vice President, General Counsel and Secretary	Ms. Kovach, 57, has been Vice President, General Counsel and Secretary of Libbey Inc. since July 2004, having joined Libbey in December 2003 as Vice President, Associate General Counsel and Assistant Secretary. Ms. Kovach was Of Counsel to Dykema Gossett PLLC from 2001 through November 2003. She served from 1997 to 2001 as Vice President, General Counsel and Corporate Secretary of Omega Healthcare Investors, Inc. (NYSE: OHI) and from 1998 to 2000 as Vice President, General Counsel and Corporate Secretary of Omega Worldwide, Inc., a NASDAQ-listed firm. Prior to joining Omega Healthcare Investors, Inc., Ms. Kovach was a partner in Dykema Gossett PLLC from 1995 through November 1997 and an associate in Dykema Gossett PLLC from 1985 to 1995.
Salvador Miñarro Villalobos Vice President, General Manager, U.S. and Canada	Mr. Miñarro, 46, has been Vice President, General Manager, U.S. and Canada since April 1, 2015. From August 2012 through March 2015, Mr. Miñarro was Vice President, General Manager, Latin America and Mexico. From November 2009 until August 2012, Mr. Miñarro was Managing Director, Libbey Mexico. From June 2006 until November 2009, Mr. Miñarro served as Commercial Director of Libbey Mexico. From 2004 until Libbey acquired the remaining 51% interest in the Vitrocrisa joint venture in June 2006, Mr. Miñarro was employed by Vitrocrisa S de RL de C.V. as Vice President, Sales and Marketing of the joint venture. Previous roles with the joint venture included Vice President of Sales for Vitrocrisa from 2001 to 2004 and Vice President, Administration and Finance for Vitrocrisa from 1998 to 2001. In addition, Mr. Miñarro served as corporate finance manager for Vitro, S.A. from 1996 to 1998.
Veronica (Ronni) L. Smith Interim Chief Financial Officer, Vice President, Corporate Controller and Assistant Treasurer	Ms. Smith, 52, has served as Interim Chief Financial Officer of Libbey Inc. since January 1, 2017. Ms. Smith also continues to serve as Libbey's Vice President, Corporate Controller and Assistant Treasurer. Since joining Libbey in May 2006 as Assistant Corporate Controller, Ms. Smith has served as Director of Accounting and, since March 2012, Vice President and Corporate Controller. Prior to joining Libbey, Ms. Smith was an accounting supervisor at Ford Motor Company (NYSE: F). Ms. Smith began her career as a staff auditor for Arthur Andersen in 1986.
Carol L. Summersgill Vice President, Human Resources	Ms. Summersgill, 51, has served as Vice President, Human Resources since September 1, 2016, having joined Libbey in May 2015 as Vice President, Human Resources, U.S. and Canada. Ms. Summersgill came to Libbey from philosophy, inc., a division of Coty Inc. (NYSE: COTY), where she served as Senior Vice President, Human Resources since 2011. Before joining philosophy, Ms. Summersgill was Vice President, Human Resources of Therma-Tru Doors, Inc. from 2003 to 2011. Ms. Summersgill's previous experience includes various positions of increasing responsibility in the supply chain and human resources functions at Whirlpool Corporation (NYSE: WHR).

Item 1A. Risk Factors

The following factors are the most significant factors that can impact year-to-year comparisons and may affect the future performance of our businesses. New risks may emerge, and management cannot predict those risks or estimate the extent to which they may affect our financial performance.

Risks associated with market conditions

Slowdowns or changes in trends in the retail, travel, restaurant and bar or entertainment industries may negatively impact demand for our products.

Our business is dependent on business and personal discretionary spending in the retail, travel, restaurant and bar or entertainment industries. Business and personal discretionary spending may decline during general economic downturns or during periods of uncertainty about economic conditions. In addition, austerity and other regulatory measures adopted by some governments may cause consumers in some markets that we serve to reduce or postpone spending. Consumers also may reduce or postpone spending in response to tighter credit, negative financial news, higher fuel and energy costs, higher tax rates and health care costs and/or declines in income or asset values. Additionally, expenditures in the travel, restaurant and bar or entertainment industries may decline after incidents of terrorism, during periods of geopolitical conflict in which travelers become concerned about safety issues, during periods of severe weather or during periods when travel or entertainment might involve health-related risks such as severe outbreaks, epidemics or pandemics of contagious disease.

Changes in trends, including those impacting the restaurant and bar industry and the retail channel of distribution, also may negatively impact demand for our products. For example, shifts from dining at full-service restaurants to dining at quick-serve restaurants and groceraunts, as well as a trend toward home delivery of meal kits, may result in reduced demand for our products in the foodservice channel of distribution. Similarly, the rapid shift in retail traffic from brick-and-mortar stores to internet sales may outpace our e-commerce capability, which we have only recently begun to develop.

An inability to meet the demand for new products may adversely impact our ability to compete effectively and to grow our business.

Our strategy depends in part on the timing and market acceptance of new product offerings and our ability to continually renew our pipeline of new products and bring those products to market. This ability may be adversely affected by difficulties or delays in product development, such as the inability to identify viable new products, obtain adequate intellectual property protection, or gain market acceptance of new products. There are no guarantees that new products will prove to be commercially successful or profitable.

An inability to develop new or expand existing customer relationships may adversely impact our ability to grow our business.

Our ability to grow our business depends in part on our ability to develop new customer relationships and to expand relationships with existing customers. Failure to develop and expand such relationships could have a material adverse effect on our business, results of operations and financial condition.

Changing industry and market conditions may dictate strategic decisions to restructure some business units and discontinue others. These decisions may require us to record material restructuring charges.

In the past, we have recorded restructuring charges related to involuntary employee terminations, various facility abandonments, and various other restructuring activities. We continually evaluate ways to reduce our operating expenses through new restructuring opportunities, including more effective utilization of our assets, workforce, and operating facilities. In addition, changing industry and market conditions may dictate strategic decisions to restructure some business units and discontinue others. As a result, there is a risk, which is increased during economic downturns and with expanded global operations, that we may incur material restructuring charges in the future.

We face intense competition and competitive pressures that could adversely affect demand for our products and our results of operations and financial condition.

Our business is highly competitive, with the principal competitive factors being customer service, price, product quality, new product development, brand name, delivery time and breadth of product offerings. Advantages or disadvantages in any of these competitive factors may be sufficient to cause the customer to consider changing providers of the kinds of products that we sell.

Competitors include other glass tableware manufacturers, including large multinational companies such as Arc International (a French company) and numerous manufacturers in Europe, Asia Pacific and the Americas; a variety of ceramic dinnerware and metalware manufacturers throughout the world; and a variety of sourcing or marketing companies. In addition, other products such as plastic and melamine compete with our glass tableware and ceramic dinnerware products.

Demand for our products may be adversely impacted by increased competitive pressures caused by the provision of subsidies by foreign countries to our competitors based in those countries; national and international boycotts and embargoes of other countries' or U.S. imports and/or exports; the raising of tariff rates on, or increase of non-tariff trade barriers that apply to, imports of our products to foreign countries; the lowering of tariff rates on imports into the U.S. of our foreign competitors' products; and other changes to international agreements that improve access to the U.S. market for our competitors.

In addition, the cost-competitiveness of our products may be adversely affected by inflationary pressures that cause us to increase the prices of our products in order to maintain their profitability. In that connection, some of our competitors may have greater financial and capital resources than we do and continue to invest heavily to achieve increased production efficiencies. Competitors may have incorporated more advanced technology in their manufacturing processes, including more advanced automation techniques. Our labor and energy costs also may be higher than those of some foreign producers of glass tableware.

The cost-competitiveness of our products, as compared to foreign competition, also may be reduced as a result of major fluctuations in the value of the euro, the Mexican peso, the Chinese yuan, which we refer to as the "RMB," or the Canadian dollar relative to the U.S. dollar and other major currencies. For example, over the last two years the U.S. dollar has appreciated substantially against the euro, the Mexican peso and the RMB, as a result of which the purchasing power of those currencies effectively has been be reduced compared to the U.S. dollar, making our U.S.-manufactured products more expensive in the euro zone, Mexico and China, respectively, compared to the products of local competitors, and making products manufactured by our foreign competitors in those locations more cost-competitive in the U.S. with our U.S. manufactured products.

Our Mexican pension and U.S. and non-U.S. postretirement welfare plans are unfunded; in the future, levels of funding of our U.S. pension plans could decline and our pension expense could materially increase.

We have not funded, and under Mexican law we are not obligated to fund, our Mexican pension plan. As of December 31, 2016, the unfunded amount of the projected benefit obligation for the Mexican pension plan was $28.2 million. In addition, although we have closed participation in our U.S. pension and post-retirement welfare plans, many of our employees participate in, and many of our former employees are entitled to benefits under, our U.S. and non-U.S. defined benefit pension plans and post-retirement welfare plans.

In connection with our employee pension and postretirement welfare plans, we are exposed to market risks associated with changes in the various capital markets. Changes in long-term interest rates affect the discount rate that is used to measure our obligations and related expense. Our total pension and postretirement welfare expense, including pension settlement charges, for all U.S. and non-U.S. plans was $8.4 million and $36.0 million for the fiscal years ended December 31, 2016 and 2015, respectively. We expect our total pension and postretirement welfare expense for all U.S. and non-U.S. plans to be $8.3 million in 2017. Volatility in the capital markets affects the performance of our pension plan asset performance and related pension expense. Based on 2016 year-end data, sensitivity to these key market risk factors is as follows:

- A change of 1 percent in the discount rate would change our annual pretax pension and postretirement welfare expense by approximately $3.5 million.

- A change of 1 percent in the expected long-term rate of return on plan assets would change annual pretax pension expense by approximately $3.2 million.

Declines in interest rates or the market value of securities held by our U.S. pension plan, or certain other changes, could materially reduce the funded status of those plans and affect our pension expense and the level and timing of minimum required contributions to the plans under applicable law.

Natural gas, the principal fuel we use to manufacture our products, is subject to fluctuating prices that could adversely affect our results of operations and financial condition.

Natural gas is the primary source of energy in most of our production processes. We do not have long-term contracts for natural gas and therefore are subject to market variables and widely fluctuating prices. Consequently, our operating results are strongly linked to the cost of natural gas. As of December 31, 2016, we had fixed price contracts in place for approximately 47.8 percent

of our estimated 2017 natural gas needs with respect to our North American manufacturing facilities and approximately 38.5 percent of our estimated 2017 natural gas needs with respect to our international manufacturing facilities. In some countries in which we operate, including China, our ability to put fixed priced contracts in place is limited. We spent $29.5 million and $35.3 million, respectively on natural gas for the year ended December 31, 2016 and 2015. We have no way of predicting to what extent natural gas prices will rise in the future. To the extent that we are not able to offset increases in natural gas prices, such as by passing along the cost to our customers, these increases could adversely impact our margins and operating performance.

The market price of our common stock is subject to volatility.

The market price of our common stock could be subject to wide fluctuations in response to numerous factors, many of which are beyond our control. These factors include market conditions within the industries in which we operate, as well as general economic and market conditions, such as recessions; seasonality of our business operations; the general state of the securities markets and the market for stocks of companies in our industry; trading volumes; sales by holders of large amounts of our common stock; short selling; actual or anticipated variations in our operational results and cash flow; actual or anticipated variations in our earnings relative to our competition; changes in financial estimates by securities analysts; governmental legislation or regulation; and currency and exchange rate fluctuations.

Operational Risks

If we are unable to renegotiate collective bargaining agreements successfully when they expire, organized strikes or work stoppages by unionized employees may have an adverse effect on our operating performance.

We are party to collective bargaining agreements that cover most of our manufacturing employees. The collective bargaining agreement for our unionized employees in the Netherlands is scheduled to expire on June 30, 2017; the agreement with our unionized employees in Shreveport, Louisiana, is scheduled to expire on December 15, 2017; and the collective bargaining agreements for our unionized employees in Toledo, Ohio, expire on September 30, 2019. The collective bargaining agreements covering our Mexican employees have no expiration, but wages are reviewed annually and benefits every two years. In Portugal and China we have no written collective bargaining agreement with our unionized employees, but there are consultations with the unions on various matters.

We may not be able to successfully negotiate new collective bargaining agreements without a labor disruption. If any of our unionized employees were to engage in a strike or work stoppage in connection with the negotiation of their existing collective bargaining agreements, or if we are unable in the future to negotiate acceptable agreements with our unionized employees in a timely manner, we could experience a significant disruption of operations. If we experience a work stoppage and we elect to engage replacement workers, we could experience increase costs. In addition, we could experience increased operating costs as a result of higher wages or benefits paid to union members upon the execution of new agreements with our labor unions. We also could experience operating inefficiencies as a result of preparations for disruptions in production, such as increasing production and inventories. Finally, companies upon which we are dependent for raw materials, transportation or other services could be affected by labor difficulties. These factors and any such disruptions or difficulties could have an adverse impact on our operating performance and financial condition.

In addition, we are dependent on the cooperation of our largely unionized workforce to implement and adopt our productivity initiatives that are critical to our ability to improve our production efficiency. The effect of strikes and other slowdowns may adversely affect the degree and speed with which we can adopt optimization objectives.

If we are unable to increase output or achieve operating efficiencies, the profitability of our business may be materially and adversely affected.

We may not be successful in increasing output at our lower-cost manufacturing facilities or gaining operating efficiencies that may be necessary in order to ensure that our products and their prices remain competitive.

Unexpected equipment failures may lead to production curtailments or shutdowns.

Our manufacturing processes are dependent upon critical glass-producing equipment, such as furnaces, forming machines and lehrs. This equipment may incur downtime as a result of unanticipated failures, accidents, natural disasters or other *force majeure* events. We may in the future experience facility shutdowns or periods of reduced production as a result of such failures or events. Unexpected interruptions in our production capabilities would adversely affect our productivity and results of operations for the affected period. We also may face shutdowns if we are unable to obtain enough energy in the peak demand periods.

A loss of the services of key personnel could have a material adverse effect on our business.

Our continued success depends to a large degree upon our ability to attract and retain key management executives, as well as upon a number of members of technology, operations and sales and marketing staffs. The loss of some of our key executives or key members of our operating staff, or an inability to attract or retain other key individuals, could materially adversely affect us.

We rely on increasingly complex information systems for management of our manufacturing, distribution, sales and other functions. If our information systems fail to perform these functions adequately, or if we experience an interruption in their operation, our business and results of operations could suffer.

All of our major operations, including manufacturing, distribution, sales and accounting, are dependent upon our complex information systems. Our information systems are vulnerable to damage or interruption from:

- earthquake, fire, flood, hurricane and other natural disasters;
- power loss, computer systems failure, internet and telecommunications or data network failure; and
- hackers, computer viruses or software bugs.

Any damage or significant disruption in the operation of such systems or the failure of our information systems to perform as expected could disrupt our business; result in decreased sales, increased overhead costs, excess inventory and product shortages; and otherwise adversely affect our operations, financial performance and condition. We take significant steps to mitigate the potential impact of each of these risks, but there can be no assurance that these procedures would be completely successful.

In addition, although we take steps to secure our management information systems, including our computer systems, intranet and internet sites, email and other telecommunications and data networks, the security measures we have implemented may not be effective and our systems may be vulnerable to theft, loss, damage and interruption from a number of potential sources and events, including unauthorized access or security breaches and cyber attacks. Our reputation, brand, and financial condition could be adversely affected if, as a result of a significant cyber event or otherwise, our operations are disrupted or shutdown; our confidential, proprietary information is stolen or disclosed; data is manipulated or destroyed; we incur costs or are required to pay fines in connection with stolen customer, employee, or other confidential information; we must dedicate significant resources to system repairs or increase cyber security protection; or we otherwise incur significant litigation or other costs.

A severe outbreak, epidemic or pandemic of a contagious disease in a location where we have a facility could adversely impact our operations and financial condition.

Our facilities may be impacted by the outbreak of certain public health issues, including epidemics, pandemics and other contagious diseases. If a severe outbreak were to occur where we have facilities, it could adversely impact our operations and financial condition.

We may not be able to effectively integrate future businesses we acquire or joint ventures into which we enter.

Any future acquisitions that we might make or joint ventures into which we might enter are subject to various risks and uncertainties, including:

- the inability to integrate effectively the operations, products, technologies and personnel of the acquired companies (some of which may be spread out in different geographic regions) and to achieve expected synergies;
- the potential disruption of existing business and diversion of management's attention from day-to-day operations;
- the inability to maintain uniform standards, controls, procedures and policies or correct deficient standards, controls, procedures and policies, including internal controls and procedures sufficient to satisfy regulatory requirements of a public company in the U.S.;
- the incurrence of contingent obligations that were not anticipated at the time of the acquisitions;
- the failure to obtain necessary transition services such as management services, information technology services and others;

- the need or obligation to divest portions of the acquired companies; and
- the potential impairment of relationships with customers.

In addition, we cannot provide assurance that the integration and consolidation of newly acquired businesses or joint ventures will achieve any anticipated cost savings and operating synergies. The inability to integrate and consolidate operations and improve operating efficiencies at newly acquired businesses or joint ventures could have a material adverse effect on our business, financial condition and results of operations.

Financial risks

Our level of debt may limit our operating and financial flexibility.

As of December 31, 2016, we had $412.3 million aggregate principal amount of debt outstanding. Although our ABL Facility credit agreement and Term Loan B Senior Secured Credit Agreement generally do not contain financial covenants, the credit agreements contain other covenants that limit our operational and financial flexibility, such as by:

- limiting the additional indebtedness that we may incur;
- limiting certain business activities, investments and payments, and
- limiting our ability to dispose of certain assets.

These covenants may limit our ability to engage in activities that may be in our long-term best interests.

In addition, our levels of indebtedness could:

- limit our ability to withstand business and economic downturns and/or place us at a competitive disadvantage compared to our competitors that have less debt, because of the high percentage of our operating cash flow that is dedicated to servicing our debt;
- limit our ability to make capital investments in order to expand our business;
- limit our ability to invest operating cash flow in our business and future business opportunities, because we use a substantial portion of these funds to service debt and because our covenants restrict the amount of our investments;
- limit our ability to obtain additional debt or equity financing for working capital, capital expenditures, product development, debt service requirements, acquisitions or other purposes;
- make it more difficult for us to satisfy our financial obligations;
- limit our ability to pay dividends; and
- limit our ability to attract and retain talent.

If cash generated from operations is insufficient to satisfy our liquidity requirements, if we cannot service our debt, or if we fail to meet our covenants, we could have substantial liquidity problems. In those circumstances, we might have to discontinue payment of dividends and/or share repurchases, sell assets, delay planned investments, obtain additional equity capital or restructure our debt. Depending on the circumstances at the time, we may not be able to accomplish any of these actions on favorable terms or at all.

In addition, our failure to comply with the covenants contained in our loan agreements could result in an event of default that, if not cured or waived, could result in the acceleration of all of our indebtedness.

Our variable rate indebtedness subjects us to interest rate risk that could cause our debt service obligations to increase significantly.

Borrowings under our Senior Secured Term Loan B are at variable rates of interest and expose us to interest rate risk. Although we have entered into a forward interest-rate swap to fix the interest rate on $220.0 million of our Senior Secured Term Loan B, if

interest rates were to increase, our debt service obligations on the variable rate indebtedness would increase even if the amount borrowed were to remain the same. As a result, our net income and cash flows would decrease.

If we are unable to control or pass on to our customers increases in key input costs, including the cost of raw materials, sourced products, utilities, packaging and freight, the profitability of our business may be materially and adversely affected.

Sand, soda ash, lime and corrugated packaging materials are the principal materials we use to make our products. We also rely heavily on natural gas, electricity, water and other utilities. In addition, we obtain glass tableware, ceramic dinnerware, metal flatware and hollowware from third parties. Increases in the costs of these commodities or products may result from inflationary pressures as well as temporary shortages due to disruptions in supply caused by weather, transportation, production delays or other factors. If we experience shortages in commodities or sourced products, we may be forced to procure them from alternative suppliers, and we may not be able to do so on terms as favorable as our current terms or at all.

In addition, the cost of U.S. dollar-denominated purchases (including for raw materials) for our operations in the euro zone, Mexico and China may increase due to appreciation of the U.S. dollar against the euro, the Mexican peso or the RMB, respectively.

If we are unsuccessful in managing our costs or in passing cost increases through to our customers through increased prices, our financial condition and results of operations may be materially and adversely affected.

The profitability of our business may be materially and adversely impacted if we are unable to fully absorb the high levels of fixed costs associated with our business.

The high levels of fixed costs of operating glass production plants encourage high levels of output, even during periods of reduced demand, which can lead to excess inventory levels and exacerbate the pressure on profit margins. In addition, significant portions of our selling, administrative and general expenses are fixed costs that neither increase nor decrease proportionately with sales. Our profitability is dependent, in part, on our ability to spread fixed costs over an increasing number of products sold and shipped, and if we reduce our rate of production our costs per unit increase, negatively impacting our gross margins. Decreased demand or the need to reduce inventories can lead to capacity adjustments that reduce our ability to absorb fixed costs and, as a result, may materially impact our profitability.

We face inventory risk.

We identify slow-moving and obsolete inventories and estimate appropriate loss provisions accordingly. In connection with our 2016 initiative to optimize our product portfolio, we recorded a charge of $5.7 million within cost of sales for the year ended December 31, 2016. No assurance can be given that we will not incur additional inventory charges. Such charges could materially adversely affect our financial condition and operating results.

Fluctuation of the currencies in which we conduct operations could adversely affect our financial condition, results of operations and cash flows.

Our reporting currency is the U.S. dollar. A significant portion of our net sales, costs, assets and liabilities are denominated in currencies other than the U.S. dollar, primarily the euro, the Mexican peso, the RMB and the Canadian dollar. In our consolidated financial statements, we translate local currency financial results into U.S. dollars based on the exchange rates prevailing during the reporting period. During times of a strengthening U.S. dollar, the reported revenues and earnings of our international operations will be reduced because the local currencies will translate into fewer U.S. dollars. This could have a material adverse effect on our financial condition, results of operations and cash flow.

In addition, changes in the value, relative to the U.S. dollar, of the various currencies in which we conduct operations, including the euro, the Mexican peso and the RMB, may result in significant changes in the indebtedness of our non-U.S. subsidiaries.

Downgrades of our credit ratings could adversely impact us.

Our credit ratings are important to our cost of capital. The major debt rating agencies routinely evaluate our debt based on a number of factors, including our financial strength and business risk as well as transparency with rating agencies and timeliness of financial reporting. A downgrade in our debt rating could result in increased interest and other expenses on future borrowings. Downgrades in our debt rating could also restrict our access to capital markets.

If we have an asset impairment in a business segment, our net earnings and net worth could be materially and adversely affected by a write-down of goodwill, intangible assets or fixed assets.

We have recorded a significant amount of goodwill, which represents the excess of cost over the fair value of the net assets of the business acquired; other identifiable intangible assets, including trademarks and trade names; and fixed assets. Impairment of goodwill, identifiable intangible assets or fixed assets may result from, among other things, deterioration in our performance, adverse market conditions, adverse changes in applicable laws or regulations, including changes that restrict the activities of or affect the products sold by our business, and a variety of other factors. Under U.S. GAAP, we are required to charge the amount of any impairment immediately to operating income. In 2016 and 2015, we did not have any impairment related to goodwill, intangible assets or fixed assets. As of December 31, 2016, we had goodwill and other identifiable intangible assets of $179.3 million and net fixed assets of $256.4 million.

We conduct an impairment analysis at least annually related to goodwill and other indefinite lived intangible assets. This analysis requires our management to make significant judgments and estimates, primarily regarding expected financial performance, expected growth rates, the terminal value calculation for cash flow and the discount rate, identifying similar companies with comparable business factors and assessing comparable multiples. We determine expected financial performance and growth rates based on internally developed forecasts considering our future financial plans. We establish the terminal cash flow value based on expected growth rates, capital spending trends and investment in trade working capital to support anticipated sales growth. We estimate the discount rate used based on an analysis of comparable company weighted average costs of capital that considered market assumptions obtained from independent sources. We identified similar companies with comparable business factors such as size, growth, profitability, risk and return on investment. We identified comparable multiples that we felt were most relevant to Libbey. The estimates that our management uses in this analysis could be materially impacted by factors such as specific industry conditions, changes in cash flow from operations and changes in growth trends. In addition, the assumptions our management uses are management's best estimates based on projected results and market conditions as of the date of testing. Significant changes in these key assumptions could result in indicators of impairment when completing the annual impairment analysis. We assess our fixed assets for possible impairment whenever events or changes in circumstances indicate that the carrying value of these assets may not be recoverable. We remain subject to future financial statement risk in the event that goodwill, other identifiable intangible assets or fixed assets become impaired. For further discussion of key assumptions in our critical accounting estimates, see "Management's Discussion and Analysis of Financial Condition and Results of Operations-Critical Accounting Estimates."

The changes in the fair value of derivatives used as hedges would be reflected in our earnings if we have not elected hedge accounting, if our hedges do not qualify as highly effective or if we do not believe that forecasted transactions would occur.

We have derivative financial instruments to hedge our interest rate risk. In addition, in order to mitigate the variation in our operating results due to commodity price fluctuations, we have derivative financial instruments that hedge certain commodity price risks associated with forecasted future natural gas requirements and foreign exchange rate risks associated with transactions denominated in some currencies other than the U.S. dollar. The results of our hedging practices could be positive, neutral or negative in any period, depending on price changes of the hedged exposures. We account for derivatives in accordance with Financial Accounting Standards Board Accounting Standards Codification Topic 815, "Derivatives and Hedging." These derivatives qualify for hedge accounting if the hedges are highly effective and we have designated and documented contemporaneously the hedging relationships involving these derivative instruments. If we do not elect hedge accounting, if our hedges do not qualify as highly effective or if we do not believe that forecasted transactions would occur, the changes in the fair value of the derivatives used as hedges will impact our results of operations and could significantly impact our earnings.

If counterparties to our hedge and interest rate swap agreements fail to perform, the applicable agreements would not protect us from fluctuations in pricing of the applicable commodity or interest rates, as the case may be.

If the counterparties to our derivative financial instruments that hedge commodity price risks or interest rates were to fail to perform, we would no longer be protected from fluctuations in the pricing of the applicable commodities or in interest rates, and the impact of these fluctuations would impact our results of operations and financial condition.

Our business requires significant capital investment and maintenance expenditures that we may be unable to fulfill.

Our operations are capital intensive, requiring us to maintain a large fixed cost base. Our total capital expenditures were $34.6 million and $48.1 million for the years ended December 31, 2016 and 2015, respectively.

Our business may not generate sufficient operating cash flow and external financing sources may not be available in an amount sufficient to enable us to make anticipated capital expenditures.

Charges related to our employee pension and postretirement welfare plans may adversely affect our results of operations and financial condition.

As part of our pension expense, we incurred pension settlement charges of $0.2 million and $21.6 million during 2016 and 2015, respectively. The 2015 charges were triggered by the unwinding of direct ownership of our Dutch defined benefit plan. For further discussion of these charges, see note 9 to our Consolidated Financial Statements for the year ended December 31, 2016. We may incur further expenses related to our employee pension and postretirement welfare plans that could have a material adverse effect on our results of operations and financial condition.

If our investments in new technology and other capital expenditures do not yield expected returns, our results of operations could be adversely affected.

The manufacture of our tableware products involves the use of automated processes and technologies. We designed much of our glass tableware production machinery internally and have continued to develop and refine this equipment to incorporate advancements in technology. We will continue to invest in equipment and make other capital expenditures to further improve our production efficiency and reduce our cost profile. To the extent that these investments do not generate targeted levels of returns in terms of efficiency or improved cost profile, our financial condition and results of operations could be adversely affected.

Governmental conversion controls over the foreign currencies in which we operate could affect our ability to convert the earnings of our foreign subsidiaries into U.S. dollars.

While the Mexican government does not currently restrict, and for many years has not restricted, the right or ability of Mexican or foreign persons or entities to convert pesos into U.S. dollars or to transfer other currencies out of Mexico, in the future the Mexican government could institute restrictive exchange rate policies or governmental controls over the convertibility of pesos into U.S. dollars. Restrictive exchange rate or conversion policies could limit our ability to transfer or convert the peso earnings of our Mexican subsidiary into U.S. dollars, upon which we rely in part to satisfy our debt obligations through intercompany loans.

In addition, the government of China imposes controls on the convertibility of RMB into foreign currencies and, in certain cases, the remittance of currency out of China. Shortages in the availability of foreign currency may restrict the ability of Libbey China to remit sufficient foreign currency to make payments to us. Under existing Chinese foreign exchange regulations, payments of current account items, including profit distributions, interest payments and expenditures from trade-related transactions, can be made in foreign currencies without prior approval from the Chinese State Administration of Foreign Exchange by complying with certain procedural requirements. However, approval from appropriate government authorities is required where RMB are to be converted into foreign currencies and remitted out of China to pay capital expenses such as the repayment of bank loans denominated in foreign currencies. In the future, the Chinese government could institute restrictive exchange rate policies for current account transactions. These policies could adversely affect our results of operations and financial condition.

Our ability to recognize the benefit of deferred tax assets is dependent upon future taxable income and the timing of temporary difference reversals.

We recognize the expected future tax benefit from deferred tax assets when realization of the tax benefit is considered more likely than not. Otherwise, a valuation allowance is applied against deferred tax assets. Assessing the recoverability of deferred tax assets requires management to make significant estimates related to expectations of future taxable income and the timing of reversals of temporary differences. To the extent that these factors differ significantly from estimates, our ability to realize the deferred tax assets could be impacted. Additionally, future changes in tax laws could impact our ability to obtain the future tax benefits represented by our deferred tax assets. As of December 31, 2016 and 2015, those jurisdictions having a net deferred tax asset position where no valuation allowances are recorded had balances of $39.9 million and $48.6 million, respectively.

International risks

We are subject to risks associated with operating in foreign countries.

We operate manufacturing and other facilities throughout the world. As a result of our international operations, we are subject to risks associated with operating in foreign countries, including:

- difficulties in staffing and managing multinational operations;
- changes in government policies and regulations;

- limitations on our ability to enforce legal rights and remedies;
- political, social and economic instability and uncertainties arising from the global geopolitical environment, including the United Kingdom referendum in favor of exiting the European Union and the evolving U.S. political, regulatory and economic landscape following the 2016 elections;
- drug-related violence, particularly in Mexico;
- war, civil disturbance or acts of terrorism;
- taking of property by nationalization or expropriation without fair compensation;
- imposition or increase of withholding and other taxes on remittances and other payments by foreign subsidiaries;
- ineffective intellectual property protection;
- disadvantages of competing against companies from countries that are not subject to U.S. laws and regulations including the U.S. Foreign Corrupt Practices Act ("FCPA");
- potentially adverse tax consequences;
- impositions or increase of investment and other restrictions or requirements by foreign governments; and
- limitations on our ability to achieve the international growth contemplated by our strategy.

High levels of inflation in countries in which we operate or sell our products could adversely affect our operating results and cash flows.

Increases in inflation caused by or associated with currency devaluations or other economic conditions may result in reduced discretionary spending by consumers and therefore reduced demand for our products, as well as higher input costs for our businesses, as a result of which our results of operations and financial condition may be negatively impacted.

Legal and Regulatory Risks

Increasing legal and regulatory complexity will continue to affect our operations and results in potentially material ways.

Our legal and regulatory environment worldwide exposes us to complex compliance, litigation and similar risks that affect our operations and results in ways that potentially may be material. In many of our markets, including the U.S. and Europe, we are subject to increasing regulation, which has increased our cost of doing business. In developing markets, including in China, we face the risks associated with new and untested laws and judicial systems. Among the more important regulatory and litigation risks we face and must manage are the following:

- The cost, compliance and other risks associated with the often conflicting and highly prescriptive regulations we face, especially in the U.S., where inconsistent standards imposed by local, state and federal authorities can increase our exposure to litigation or governmental investigations or proceedings;
- The impact of new, potential or changing regulation that can affect our business plans, such as those relating to the content and safety of our products, as well as the risks and costs of our labeling and other disclosure practices;
- The risks and costs to us and our supply chain of increased focus by U.S. and overseas governmental authorities and non-governmental organizations on environmental matters, such as climate change, the reduction of greenhouse gases and water consumption, including as a result of initiatives that effectively impose a tax on carbon emissions;
- The impact of litigation trends, particularly in our major markets; the relative level of our defense costs, which vary from period to period depending on the number, nature and procedural status of pending proceedings; and the cost and other effects of settlements or judgments, which may require us to make disclosures or take other actions that may affect perceptions of our brand and products;

- The increasing costs and other effects of compliance with U.S. and overseas regulations affecting our workforce and labor practices, including regulations relating to wage and hour practices, immigration, healthcare, retirement and other employee benefits and unlawful workplace discrimination;

- The cost and disruption of responding to governmental audits, investigations or proceedings (including audits of abandoned and unclaimed property, tax audits and audits of pension plans and our compliance with wage and hour laws), whether or not they have merit, and the cost to resolve or contest the results of any such governmental audits, investigations or proceedings;

- The legal and compliance risks associated with information technology, such as the costs of compliance with privacy, consumer protection and other laws, the potential costs associated with alleged security breaches (including the loss of consumer confidence that may result and the risk of criminal penalties or civil liability to consumers or employees whose data is alleged to have been collected or used inappropriately) and potential challenges to the associated intellectual property rights or to our use of that intellectual property; and

- The impact of changes in financial reporting requirements, accounting standards, pronouncements, principles or practices, including with respect to our critical accounting policies and estimates, changes in tax accounting or tax laws (or authoritative interpretations relating to any of these matters), and the impact of settlements of pending or any future adjustments proposed by any taxing authorities in connection with our tax audits, all of which will depend on their timing, nature and scope.

- The impact of new accounting standards or pronouncements, which could adversely affect our operating results or cause unanticipated fluctuations in our results in future periods. The accounting rules and regulations with which we must comply are complex and continually changing. In addition, many companies' accounting policies are being subjected to heightened scrutiny by regulators and the public. While we believe that our financial statements have been prepared in accordance of U.S. generally accepted accounting principles, we cannot predict the impact of future changes to accounting principles or to our accounting policies on our financial statements going forward.

We are subject to various environmental legal requirements and may be subject to new legal requirements in the future; these requirements could have a material adverse effect on our operations.

Our operations and properties, both in the U.S. and abroad, are subject to extensive laws, ordinances, regulations and other legal requirements relating to environmental protection, including legal requirements governing investigation and clean-up of contaminated properties as well as water discharges, air emissions, waste management and workplace health and safety. These legal requirements frequently change and vary among jurisdictions. For example, Chinese restrictions on air emissions have continued to evolve in the face of the extreme air pollution in China. Compliance with these requirements, or the failure to comply with these requirements, may have a material adverse effect on operations.

We have incurred, and expect to incur, costs to comply with environmental legal requirements, including requirements limiting greenhouse gas emissions, and these costs could increase in the future. Many environmental legal requirements provide for substantial fines, orders (including orders to cease operations) and criminal sanctions for violations. Also, certain environmental laws impose strict liability and, under certain circumstances, joint and several liability on current and prior owners and operators of these sites, as well as persons who sent waste to them, for costs to investigate and remediate contaminated sites. These legal requirements may apply to conditions at properties that we presently or formerly owned or operated, as well as at other properties for which we may be responsible, including those at which wastes attributable to us were disposed. A significant order or judgment against us, the loss of a significant permit or license or the imposition of a significant fine may have a material adverse effect on operations.

Our products are subject to various health and safety requirements and may be subject to new health and safety requirements in the future; these requirements could have a material adverse effect on our operations.

Our products are subject to certain legal requirements relating to health and safety. These legal requirements frequently change and vary among jurisdictions. Compliance with these requirements, or the failure to comply with these requirements, may have a material adverse effect on our operations. If any of our products becomes subject to new regulations, or if any of our products becomes specifically regulated by additional governmental or other regulatory entities, the cost of compliance could be material. For example, the U.S. Consumer Product Safety Commission, or CPSC, regulates many consumer products, including glass tableware products that are externally decorated with certain ceramic enamels. New regulations or policies by the CPSC could require us to change our manufacturing processes, which could materially raise our manufacturing costs. In addition, such new regulations could reduce sales of our glass tableware products. Furthermore, a significant order or judgment against us by any

governmental or regulatory entity relating to health or safety matters, or the imposition of a significant fine relating to such matters, may have a material adverse effect on our operations.

We are subject to complex corporate governance, public disclosure and accounting requirements to which most of our competitors are not subject.

We are subject to changing rules and regulations of federal and state government, as well as the stock exchange on which our common stock is listed. These entities, including the Public Company Accounting Oversight Board ("PCAOB"), the Securities and Exchange Commission ("SEC") and the NYSE MKT exchange, have issued a significant number of new and increasingly complex requirements and regulations over the course of the last several years and continue to develop additional regulations and requirements in response to laws enacted by the U.S. Congress. For example, the Sarbanes-Oxley Act of 2002 and the rules and regulations subsequently implemented by the SEC and the PCAOB, imposed and may impose further compliance burdens and costs on us. Also, in July 2010, the Dodd-Frank Wall Street Reform and Protection Act (the "Dodd-Frank Act") was signed into law. The Dodd-Frank Act includes significant corporate governance and executive compensation-related provisions that require the SEC to adopt additional rules and regulations in these areas. Our efforts to comply with new requirements of law and regulation are likely to result in an increase in expenses and a diversion of management's time from other business activities. Also, those laws, rules and regulations may make it more difficult and expensive for us to attract and retain key employees and directors and to maintain director and officer liability insurance, and we may be required to accept reduced coverage or incur substantially higher costs to maintain coverage.

Our competitors generally are not subject to these rules and regulations, because they do not have securities that are publicly traded on a U.S. securities exchange. As a result, our competitors generally are not subject to the risks identified above. In addition, the public disclosures that we are required to provide pursuant to these rules and regulations may furnish our competitors with greater competitive information regarding our operations and financial results than we are able to obtain regarding their operations and financial results, thereby placing us at a competitive disadvantage.

Estimates and assumptions that we make in accounting for our results from operations are dependent on future results, involve significant judgments, may be imprecise and may differ materially from actual results.

Several estimates and assumptions are made that affect the accounting for and recognition of assets, liabilities, revenues and expenses. These estimates and assumptions must be made due to certain information used in preparation of our financial statements which is dependent on future events, cannot be calculated with a high degree of precision from data available or is not capable of being readily calculated based on generally accepted methodologies. We believe that accounting for long-lived assets, goodwill, pension benefit plans, contingencies and litigation, and income taxes involves significant judgments and estimates used in the preparation of our consolidated financial statements. Actual results for all estimates could differ materially from the estimates and assumptions that we use, which could have a material adverse effect on our financial condition and results of operations.

Our financial results and operations may be adversely affected by violations of anti-bribery laws.

The FCPA and similar anti-bribery laws in other jurisdictions generally prohibit companies and their intermediaries from making improper payments to non-U.S. officials for the purpose of obtaining or retaining business. Our policies mandate compliance with these anti-bribery laws. We operate in many parts of the world that have experienced governmental corruption to some degree and, in certain circumstances, strict compliance with anti-bribery laws may conflict with local customs and practices. We cannot assure you that our internal controls and procedures always will protect us from the reckless or criminal acts committed by our employees or agents. If we were found to be liable for FCPA violations (either due to our own acts or our inadvertence or due to the acts or inadvertence of others), we could be liable for criminal or civil penalties or other sanctions, which could have a material adverse effect on our business.

Our failure to protect our intellectual property or prevail in any intellectual property litigation could materially and adversely affect our competitive position, reduce net sales or otherwise harm our business.

Our success depends in part on our ability to protect our intellectual property rights. We rely on a combination of patent, trademark, copyright and trade secret laws, licenses, confidentiality and other agreements to protect our intellectual property rights. However, this protection may not be fully adequate. Our intellectual property rights may be challenged or invalidated, an infringement suit by us against a third party may not be successful and/or third parties could adopt trademarks similar to our own. In particular, third parties could design around or copy our proprietary furnace, manufacturing and mold technologies, which are important contributors to our competitive position in the glass tableware industry. We may be particularly susceptible to these challenges in countries where protection of intellectual property is not strong. In addition, we may be accused of infringing or violating the intellectual

property rights of third parties. Any such claims, whether or not meritorious, could result in costly litigation and divert the efforts of our personnel. Our failure to protect our intellectual property or prevail in any intellectual property litigation could materially and adversely affect our competitive position, reduce net sales or otherwise harm our business.

Our financial results may be adversely impacted by product liability claims, recalls or other litigation that is determined adversely to us.

We are involved in various routine legal proceedings arising in the ordinary course of our business. We do not consider any pending legal proceeding as material. However, our financial results could be adversely affected by monetary judgments and the cost to defend legal proceedings in the future, including product liability claims related to the products we manufacture. Although we maintain product liability insurance coverage, potential product liability claims are subject to a self-insured retention or could be excluded under the terms of the policy.

Item 1B. Unresolved Staff Comments

None.

Item 2. Properties

At December 31, 2016 we occupied the following square footage at plants and warehouse/distribution facilities:

	U.S. & Canada		Latin America		EMEA		Other	
Location	**Owned**	**Leased**	**Owned**	**Leased**	**Owned**	**Leased**	**Owned**	**Leased**
Toledo, Ohio:								
Manufacturing	733,800	—						
Warehousing/Distribution	713,100	408,200						
Shreveport, Louisiana:								
Manufacturing	525,000	—						
Warehousing/Distribution	166,000	646,000						
Monterrey, Mexico:								
Manufacturing			684,000	—				
Warehousing/Distribution			563,700	462,800				
Leerdam, Netherlands:								
Manufacturing					141,000	—		
Warehousing/Distribution					127,000	442,000		
Laredo, Texas:								
Warehousing/Distribution	149,000	163,000						
West Chicago, Illinois:								
Warehousing/Distribution	—	249,000						
Marinha Grande, Portugal:								
Manufacturing					217,000	—		
Warehousing/Distribution					193,000	—		
Langfang, China:								
Manufacturing							221,400	—
Warehousing/Distribution							234,000	128,600

These facilities have an aggregate floor space of 7.2 million square feet. We own approximately 65 percent and lease approximately 35 percent of this floor space. In addition to the facilities listed above, our headquarters (Toledo, Ohio), some warehouses (various locations), sales offices (various locations), showrooms (in Toledo, Ohio and New York) and various outlet stores are located in leased space. We also utilize various warehouses as needed on a month-to-month basis.

All of our principal facilities are currently being utilized for their intended purpose. In the opinion of management, all of these facilities are well maintained and adequate for our planned operational requirements.

Item 3. Legal Proceedings

We are involved in various routine legal proceedings arising in the ordinary course of our business. In addition, the Company and its subsidiaries are subject to examination by various countries' tax authorities. These examinations may lead to proposed or assessed adjustments to our taxes. For a detailed discussion on tax contingencies, see note 8, Income Taxes, to the Consolidated Financial Statements included in Part II, Item 8 of this Annual Report, which is incorporated herein by reference.

Item 4. Mine Safety Disclosures

Not applicable.

PART II

Item 5. Market For Registrant's Common Equity, Related Stockholder Matters, and Issuer Purchases of Equity Securities

Common Stock and Dividends

Libbey Inc. common stock is listed for trading on the NYSE MKT exchange under the symbol **LBY**. The price range for the Company's common stock as reported by the NYSE MKT exchange and dividends declared for our common stock were as follows:

	2016			2015		
	Price Range		Cash Dividend Declared	Price Range		Cash Dividend Declared
	High	Low		High	Low	
First Quarter	$ 21.25	$ 14.75	$0.115	$ 40.00	$ 29.99	$0.110
Second Quarter	$ 18.99	$ 14.90	$0.115	$ 42.04	$ 37.25	$0.110
Third Quarter	$ 19.06	$ 15.20	$0.115	$ 41.67	$ 31.51	$0.110
Fourth Quarter	$ 20.76	$ 15.21	$0.115	$ 35.75	$ 21.21	$0.110

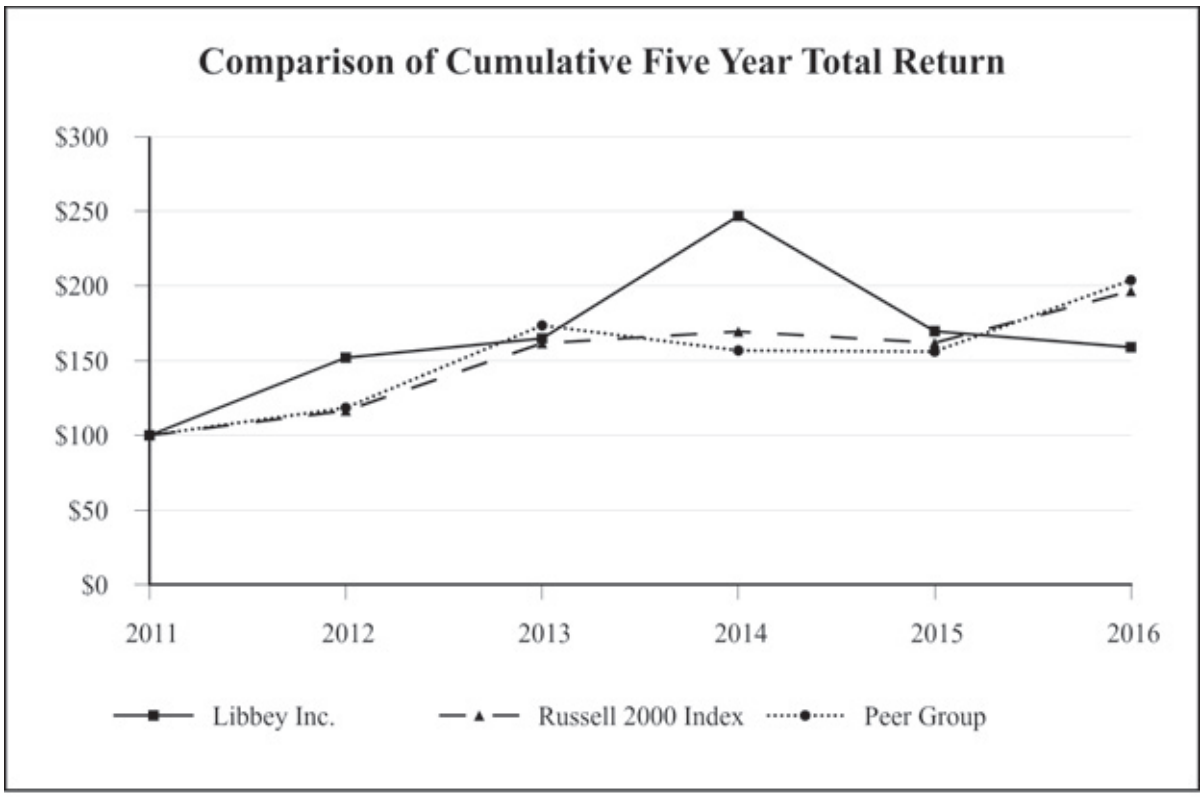
The closing market price of our common stock on February 24, 2017 was $16.25 per share.

On February 24, 2017, there were 737 registered common shareholders of record. From February 2009 through year-end 2014, no dividends were paid. The declaration of future dividends is within the discretion of the Board of Directors of Libbey and depends upon, among other things, business conditions, earnings and the financial condition of Libbey.

Comparison of Cumulative Total Returns

The graph below compares the total stockholder return on our common stock to the cumulative total return for the Russell 2000 Index (“Russell 2000”), a small-cap index, and a peer group that we use for executive compensation purposes, as disclosed in the proxy statement for our 2017 Annual Meeting of shareholders. The index reflects the year-end market value of an investment in the stock of each company in the index, including additional shares assumed to have been acquired with cash dividends, if any.

The graph assumes an $100 investment in our common stock on January 1, 2011, and also assumes investments of $100 in each of the Russell 2000 and the peer group, respectively, on January 1, 2011. The value of these investments on December 31 of each year from 2011 through 2016 is shown in the table below the graph.



Company/Index	Base Period Dec 2011	Indexed Returns Years Ending				
		Dec 2012	Dec 2013	Dec 2014	Dec 2015	Dec 2016
Libbey Inc.	100	151.88	164.84	246.78	169.64	158.93
Russell 2000 Index	100	116.35	161.52	169.43	161.95	196.45
Peer Group	100	118.33	173.49	156.65	155.96	203.80

Issuer Purchases of Equity Securities

Following is a summary of the 2016 fourth quarter activity in our share repurchase program:

Period	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as part of Publicly Announced Plans or Programs	Maximum Number of Shares that May Yet Be Purchased Under the Plans or Programs
October 1 to October 31, 2016	—	$ —	—	941,250
November 1 to November 30, 2016	—	$ —	—	941,250
December 1 to December 31, 2016	—	$ —	—	941,250
Total	—	$ —	—	941,250

Item 6. Selected Financial Data

Selected financial information is as follows:

Year ended December 31, (dollars in thousands, except percentages, per-share amounts and employees)	2016[d] [e]	2015[d] [e] [f]	2014[d] [e]	2013[d] [e]	2012[d] [e]
Operating Results:					
Net sales	$ 793,420	$ 822,345	$ 852,492	$ 818,811	$ 825,287
Gross profit [d]	$ 166,294	$ 176,328	$ 203,145	$ 189,417	$ 195,185
Gross profit margin	21.0%	21.4 %	23.8%	23.1%	23.7%
Selling, general and administrative expenses [d]	$ 120,984	$ 132,607	$ 121,909	$ 109,981	$ 113,896
Income from operations (IFO) [d]	$ 45,310	$ 43,721	$ 81,236	$ 74,577	$ 81,289
IFO margin	5.7%	5.3 %	9.5%	9.1%	9.8%
Other income (expense) [e]	$ 3,362	$ 2,880	$ (44,840)	$ (871)	$ (30,887)
Earnings before interest and income taxes (EBIT) [d] [e]	$ 48,672	$ 46,601	$ 36,396	$ 73,706	$ 50,402
EBIT margin	6.1%	5.7 %	4.3%	9.0%	6.1%
Interest expense	$ 20,888	$ 18,484	$ 22,866	$ 32,006	$ 37,727
Income before income taxes [d] [e]	$ 27,784	$ 28,117	$ 13,530	$ 41,700	$ 12,675
Provision (benefit) for income taxes [f]	$ 17,711	$ (38,216)	$ 8,567	$ 13,241	$ 5,709
Effective tax rate	63.7%	(135.9)%	63.3%	31.8%	45.0%
Net income [d] [e] [f]	$ 10,073	$ 66,333	$ 4,963	$ 28,459	$ 6,966
Net income margin	1.3%	8.1 %	0.6%	3.5%	0.8%
Per-Share Amounts:					
Diluted net income [d] [e] [f]	$ 0.46	$ 2.99	$ 0.22	$ 1.31	$ 0.33
Dividends declared	$ 0.46	$ 0.44	$ —	$ —	$ —
Other Information:					
Adjusted EBITDA [b] [g]	$ 109,781	$ 116,131	$ 123,389	$ 135,317	$ 132,139
Adjusted EBITDA margin	13.8%	14.1 %	14.5%	16.5%	16.0%
Employees	6,237	6,543	6,553	6,437	6,663
Balance Sheet Data:					
Total assets	$ 818,169	$ 852,444	$ 822,938	$ 820,475	$ 789,919
Total liabilities	$ 673,050	$ 704,062	$ 745,484	$ 689,666	$ 765,443
Trade Working Capital [a]	$ 183,540	$ 200,846	$ 178,449	$ 173,050	$ 172,687
% of net sales	23.1%	24.4 %	20.9%	21.1%	20.9%
Total borrowings - net	$ 407,840	$ 431,019	$ 437,930	$ 402,388	$ 454,210
Cash Flow Data:					
Net cash provided by operating activities	$ 82,643	$ 66,099	$ 81,871	$ 72,729	$ 8,497
Net cash used in investing activities	$ (34,604)	$ (48,129)	$ (52,019)	$ (49,326)	$ (32,073)
Free Cash Flow [c]	$ 48,039	$ 17,970	$ 29,852	$ 23,403	$ (23,576)
Net cash provided by (used in) financing activities	$ (34,715)	$ (26,404)	$ (9,745)	$ (49,142)	$ 32,272

(a) Defined as net inventory plus net accounts receivable, excluding receivable on furnace malfunction insurance claim, less accounts payable.

(b) We believe that Adjusted EBITDA (adjusted earnings before interest, taxes, depreciation and amortization), a non-GAAP financial measure, is a useful metric for evaluating our financial performance. For reasons why we use this measure and certain limitations, see "Non-GAAP Measures" on page 31 in the "Discussion of 2016 vs. 2015 Results of Operations".

(c) We believe that Free Cash Flow (the sum of net cash provided by operating activities and net cash used in investing activities), is a useful metric for evaluating our liquidity. For reasons why we use this metric and certain limitations, see "Free Cash Flow" on page 38 in the "Cash Flow" discussion.

(d) Includes special items of $14,483, $27,036 and $(1,833) in 2016, 2015 and 2014, respectively and disclosed in notes 7, 9, 18 and 19 to the Consolidated Financial Statements. In 2013, we incurred $6,544 for restructuring charges (including depreciation expense of $1,699), $6,272 for furnace malfunction (including depreciation expense of $(166)), $2,252 in pension settlement charges, $1,781 for abandoned property and $736 for executive retirement. In 2012, we incurred charges of $5,150 for severance and $4,306 for pension settlement and curtailment charges.

(e) Includes $1,860, $218, $(1,247), $(916) and $265 in 2016, 2015, 2014, 2013 and 2012, respectively, for income (expense) related to hedge ineffectiveness on our natural gas contracts and interest rate swap, as well as, mark-to-market adjustments on our natural gas contracts that have been de-designated and those for which we did not elect hedge accounting. It also includes $(47,191), $(2,518) and $(31,075) for (loss) on redemption of debt in 2014, 2013 and 2012, respectively. In 2013, we incurred a net gain of $1,844 on a furnace malfunction at our Toledo, Ohio manufacturing facility.

(f) Includes a tax benefit of $(43,805) in the fourth quarter of 2015 related to the reversal of substantially all of the remaining valuation allowance recorded against U.S. deferred tax assets.

(g) Excludes items noted in (d) and (e) above.

Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations

Forward Looking Statements

This document and supporting schedules contain statements that are not historical facts and constitute projections, forecasts or forward-looking statements. For a description of the forward-looking statements and risk factors that may affect our performance, see the "Risk Factors" section above.

Additionally, for an understanding of the significant factors that influenced our performance during the past three years, the following should be read in conjunction with the audited Consolidated Financial Statements and Notes.

General Overview

Headquartered in Toledo, Ohio, we believe that we have the largest manufacturing, distribution and service network among glass tableware manufacturers in the Western Hemisphere and that we are one of the largest glass tableware manufacturers in the world. Our tabletop product portfolio consists of an extensive line of high quality, machine-made glass tableware, including casual glass beverageware, in addition to ceramic dinnerware, metal flatware, hollowware and serveware. We sell our products to foodservice, retail, and business-to-business customers in over 100 countries, with our sales to customers in North America accounting for approximately 76 percent of our total sales. We believe we are the largest manufacturer and marketer of casual glass beverageware in North America for the foodservice and retail channels. Additionally, we are a manufacturer and marketer of casual glass beverageware in EMEA and Asia Pacific regions.

Our reporting segments align with our regionally focused organizational structure, which we believe enables us to better serve customers across the globe. Under this structure, we report financial results for U.S. and Canada, Latin America, EMEA and Other. Sales and Segment EBIT are based on the geographical destination of the sale. Our three reportable segments are defined below. Our operating segment that does not meet the criteria to be a reportable segment is disclosed as Other.

U.S. & Canada—includes sales of manufactured and sourced tableware having an end market destination in the U.S and Canada, excluding glass products for OEMs, which remain in the Latin America segment.

Latin America—includes primarily sales of manufactured and sourced glass tableware having an end market destination in Latin America including glass products for OEMs that have an end market destination outside of Latin America.

EMEA—includes primarily sales of manufactured and sourced glass tableware having an end market destination in Europe, the Middle East and Africa.

Other—includes primarily sales of manufactured and sourced glass tableware having an end market destination in Asia Pacific.

Executive Overview

During 2016, we operated in a competitive environment with slow economic growth and a strengthening U.S. dollar. Global industry capacity has exceeded demand. Additionally, several of our competitors throughout the world continue to experience financial difficulty. As a result of these factors, our business was impacted by one of the most intense competitive environments ever and we expect it to extend into 2017.

The U.S. economy remained tepid during 2016; the strong U.S. dollar resulted in more imports from competitors. We observed the tenth consecutive quarter of decline in U.S. foodservice traffic, as reported by third party research firms Knapp-Track and Blackbox. NPD Group continues to report full year 2016 downward trends for U.S. retail point-of-sale data for the glass beverageware category. Many brick and mortar retail stores continued to report lower sales or marginal sales gains year-over-year in their latest quarter and fiscal year. After the 2016 Christmas season, many large retailers have announced plans to shut down stores and reduce overhead costs. Management expects the trends experienced in the U.S. foodservice and retail distribution channels in 2016 to continue into 2017. Although the Latin American economy experienced little growth during 2016 due to the effects of declining oil prices, strengthening of the U.S. dollar and reductions in governmental spending in Brazil, Colombia and Mexico, we experienced retail growth through additional market share from competitors while facing export challenges and difficult macroeconomics. The Mexican economy continues to advance at a slow pace following the volatility in the peso exchange rate that has been negatively impacted by the U.S. presidential election results and with the United Kingdom's election to withdraw from the European Union in a national referendum in June 2016 (Brexit). The European economy continues to experience slow growth, high unemployment and dynamic competition. China's competitive environment continues to be challenging and the economic growth rates remain low, similar to those in 2015.

Our net sales for the year of $793.4 million were 3.5 percent lower than the prior year, or down 1.1 percent on a constant currency basis; the adverse currency impact was $19.6 million in 2016 due primarily to the Mexican peso. Net sales were negatively impacted by a number of factors, including foreign currency and lower-than-expected U.S. retail sales, unfavorable macro-economic and geopolitical environments, aggressive competitor actions and the work stoppage at our Toledo, Ohio, facility in the fourth quarter of 2016. Our foodservice channel experienced net sales growth in 2016 of 0.6 percent (1.7 percent growth on a constant currency basis). Our U.S. and Canada foodservice sales grew 2.3 percent, in spite of the fact that U.S. restaurant traffic trends declined year-over-year for the tenth consecutive quarter, as reported by third party research firms Knapp-Track and Blackbox. Globally, retail volume increased in 2016 as compared to 2015, but currency and competitive pressures drove our retail channel sales to decline 4.8 percent (1.3 percent decline on a constant currency basis). The business-to-business channel is impacted by the general economic trends in each region and is dependent on customer demands.

In early October 2016, we experienced a two week work stoppage at our Toledo manufacturing facility. During this time we were operating the plant, but at a lower capacity utilization. The lower production volume impact, shipping costs and other direct incremental expenses associated with the Toledo work stoppage negatively impacted gross profit by $4.2 million in the fourth quarter of 2016. Additionally, increased shipping backlog and product shortages impacted net sales and reduced profitability. We estimate the lost revenues to be between $7.0 million and $9.0 million, which reduced income before taxes by approximately $3.0 million to $4.0 million. Total estimated impact to income before tax is between $7.0 million and $8.0 million.

We remain focused on our goals of strengthening relationships with customers, improving marketing capabilities in new product development and innovation to drive growth, and simplifying our business to operate more efficiently. During 2016 we accomplished the following:

- Implemented a new product development process to build a sustainable pipeline of new products.
- Enhanced our marketing team.
- Expanded our Artistry Collection™ which is facilitating our entry into the Travel and Tourism sector evidenced by our recent partnering with a major global hotel chain where we will provide Artistry banquet stemware and dinnerware for more than 600 of their properties.
- Actively developed our "top-to-top" customer relationships.
- Optimized our product portfolio management system by reducing our SKUs by 20 percent. Our product portfolio optimization initiative resulted in a 2016 pretax charge of $5.7 million, or $4.2 million on an after tax basis.
- Started our furnace consolidation effort, which will better utilize existing capacity while reducing manufacturing costs.

While we are focused on taking advantage of opportunities we see in our markets to drive long-term growth, we need to continue to improve both our operational and organizational excellence. Therefore, in 2017 we plan to start our implementation of several technology upgrades and will be making investments that will be critical to expanding our future growth opportunities and improving the effectiveness of our supply chain.

In 2016, our balanced capital allocation strategy featured an $0.115 per share quarterly dividend, optional Term Loan B payments of $20.0 million, repurchasing 111,292 shares for $2.0 million and reinvestment in the business. We will continue to take a balanced approach to our capital allocation in 2017 and remain committed to our dividend policy, under which we announced a two percent increase in 2017. However, given the softness in our markets, we believe it is prudent to continue prioritizing debt reduction with our excess capital over the near term.

Results of Operations

The following table presents key results of our operations for the years 2016, 2015 and 2014:

Year ended December 31, **(dollars in thousands, except percentages and per-share amounts)**	**2016**	**2015**	**2014**
Net sales	$ 793,420	$ 822,345	$ 852,492
Gross profit [(1)]	$ 166,294	$ 176,328	$ 203,145
Gross profit margin	*21.0%*	*21.4%*	*23.8%*
Income from operations (IFO) [(1)(2)]	$ 45,310	$ 43,721	$ 81,236
IFO margin	*5.7%*	*5.3%*	*9.5%*
Net income [(1)(2)(3)]	$ 10,073	$ 66,333	$ 4,963
Net income margin	*1.3%*	*8.1%*	*0.6%*
Diluted net income per share	$ 0.46	$ 2.99	$ 0.22
Adjusted earnings before interest, taxes, depreciation and amortization (Adjusted EBITDA)[(4)]	$ 109,781	$ 116,131	$ 123,389
Adjusted EBITDA margin	*13.8%*	*14.1%*	*14.5%*

(1) 2016 includes $5.7 million million in product portfolio optimization charges, $4.2 million related to a work stoppage at the Toledo, Ohio, manufacturing facility, and $0.1 million in pension settlement charges. 2015 includes $17.0 million in pension settlement charges due to unwinding direct ownership of our Dutch defined benefit pension plan and $0.2 million in charges for an environmental obligation related to our assessment of Syracuse China Company as a potentially responsible party with respect to the Lower Ley Creek sub-site of the Onondaga Lake Superfund site. 2014 includes a net gain of $4.8 million related to the insurance settlement for the 2013 furnace malfunction at our Toledo, Ohio, manufacturing facility; $1.0 million of charges related to discontinuing production of certain glassware in North America and reducing manufacturing capacity at our Shreveport, Louisiana, facility; and $0.3 million in charges for an environmental obligation related to our assessment of Syracuse China Company as a potentially responsible party with respect to the Lower Ley Creek sub-site of the Onondaga Lake Superfund site. (See notes 7, 9, 18 and 19 to the Consolidated Financial Statements.)

(2) In addition to item (1) above, 2016 includes $4.5 million related to executive terminations and $0.1 million of pension settlement charges. 2015 includes $4.6 million in pension settlement charges due to unwinding direct ownership of our Dutch defined benefit pension plan, and $4.3 million of charges related to reorganization to support our growth strategy and $0.9 million of charges related to executive terminations. 2014 includes $0.8 million of pension settlement charges and $0.9 million for executive retirement. (See notes 9 and 19 to the Consolidated Financial Statements.)

(3) In addition to item (2) above, 2016 and 2015 include income of $1.9 million and $0.2 million, respectively, related to derivatives. 2014 includes a loss of $47.2 million related to the write-off of unamortized finance fees and call premium payments on the $405.0 million Senior Secured Notes redeemed in April and May 2014, and the write-off of the debt carrying value adjustment related to the termination of the $45.0 million interest rate swap; and $1.2 million related to hedge ineffectiveness primarily on natural gas contracts in Mexico. (See notes 6, 13, 17 and 19 to the Consolidated Financial Statements.)

(4) We believe that Adjusted EBITDA and the associated margin, non-GAAP financial measures, are useful metrics for evaluating our financial performance, as they are measures that we use internally to assess our performance. For certain limitations and a reconciliation from net income to Adjusted EBITDA, see the "Non-GAAP Measures" and "Adjusted EBITDA" sections below in the Discussion of Results of Operations and the reasons we believe these non-GAAP financial measures are useful.

Discussion of 2016 vs. 2015 Results of Operations

Net Sales

The following table summarizes net sales by operating segment:

Year ended December 31, (dollars in thousands)	2016	2015	Increase/(Decrease) $ Change	Increase/(Decrease) % Change	Currency Effects	Constant Currency Sales Growth (Decline) [1]
U.S. & Canada	$ 488,162	$ 497,728	$ (9,566)	(1.9)%	$ (139)	(1.9)%
Latin America	151,406	167,069	(15,663)	(9.4)%	(16,976)	0.8 %
EMEA	119,750	122,664	(2,914)	(2.4)%	(414)	(2.0)%
Other	34,102	34,884	(782)	(2.2)%	(2,060)	3.7 %
Consolidated	$ 793,420	$ 822,345	$ (28,925)	(3.5)%	$ (19,589)	(1.1)%

(1) We believe the constant currency sales growth (decline), a non-gaap measure, is a useful metric for evaluating our financial performance. See the "Non-GAAP Measures" section below for the reasons we believe this non-GAAP metric is useful and how it is derived.

Net Sales — U.S. & Canada

Net sales in U.S. & Canada were $488.2 million, compared to $497.7 million in 2015, a decrease of 1.9 percent. The backlog as a result of the Toledo, Ohio work stoppage in the fourth quarter of 2016 resulted in lost revenues of approximately $7.0 million to $9.0 million. The retail channel incurred a 10.2 percent decrease, or $15.0 million, due to weaker volume and an unfavorable mix. Partially offsetting the reduction in retail, was an increase in our foodservice channel where net sales have increased 2.3 percent, or $6.0 million, in spite of the continuing decline in U.S. restaurant traffic. The majority of the increase was related to an increase in volume, partially offset by a decline in mix. Business-to-business net sales were flat in comparison to prior year.

Net Sales — Latin America

Net sales in Latin America were $151.4 million, compared to $167.1 million in 2015, a decrease of 9.4 percent (an increase of 0.8 percent excluding currency fluctuation). The sales decrease was primarily due to the devaluation of the peso. Net sales in our business-to-business channel decreased 18.7 percent, or $15.2 million, driven by the unfavorable currency and lower unit sales. Partially offsetting this was an increase in our retail channel of 1.5 percent, or $1.1 million. On a constant currency basis, our retail channel increased by 14.4 percent, primarily as a result of increased volume.

Net Sales — EMEA

Net sales in EMEA were $119.8 million, compared to $122.7 million in 2015, a decrease of 2.4 percent (a decrease of 2.0 percent excluding currency fluctuation). The sales decrease was due to weaker volumes in the business-to-business and foodservice channels, as we experienced the negative impacts from the macro-economy and increased competition. Partially offsetting the decline was a volume increase in the retail channel. Our strategy does not anticipate significant revenue growth in our EMEA segment. We continue to focus on opportunities to expand margins in a challenging economic environment.

Gross Profit

Gross profit was $166.3 million in 2016, compared to $176.3 million in the prior year, a decrease of $10.0 million. Gross profit as a percentage of net sales decreased to 21.0 percent, compared to 21.4 percent in the prior year. The primary drivers of the $10.0 million decrease in gross profit were $16.3 million of unfavorable manufacturing activity (including $9.8 million for additional downtime and $4.2 million related to the two-week work stoppage at our Toledo, Ohio, manufacturing facility in the fourth quarter of 2016), a negative currency impact of $5.9 million primarily related to the Mexican peso, $5.9 million of additional depreciation expense driven by increased capital investments in prior years (including investment in our new ClearFire® technology) and the $5.7 million charge related to our product portfolio optimization initiative to simplify and improve our operations. Partially offsetting these unfavorable items were lower pension settlement charges of $16.9 million (2015 included $17.0 million related to the unwinding of our Dutch defined benefit pension plan), favorable input costs of $3.9 million mainly related to natural gas pricing, favorable benefit cost of $1.8 million mainly related to lower pension and healthcare expense. Manufacturing activity includes the impact of fluctuating production activities and associated manufacturing costs, including warehousing costs, freight, and repairs and maintenance.

Income From Operations

Income from operations for the year ended December 31, 2016 increased $1.6 million, to $45.3 million, compared to $43.7 million in the prior year. Income from operations as a percentage of net sales was 5.7 percent for the year ended December 31, 2016, compared to 5.3 percent in the prior year. The increase in income from operations is the result of lower selling, general and administrative expenses of $11.6 million partially offset by the lower gross profit of $10.0 million as discussed above. The reduction in selling, general and administrative expenses were driven by 2015 costs that did not repeat in 2016 related to the 2015 reorganization charge of $4.3 million and $4.6 million in pension settlement charges related to the liquidation of our Dutch pension plan. In 2016, we also incurred lower marketing expenses of $4.1 million and had less research and development expense of $1.9 million, as compared to 2015. Partially offsetting these favorable drivers was an increase in executive termination costs of $3.6 million.

Net Income and Diluted Net Income Per Share

We recorded net income of $10.1 million, or $0.46 per diluted share, in 2016, compared to $66.3 million, or $2.99 per diluted share, in 2015. Net income as a percentage of net sales was 1.3 percent in 2016, compared to 8.1 percent in the prior year. The decrease in net income and diluted net income per share is due to the factors discussed in Income From Operations above, as well as the $55.9 million increase in the provision for income taxes and the $2.4 million increase in interest expense. The increase of $55.9 million in provision for income taxes is the result of recording a tax benefit in 2015 of $55.8 million related to management's decision in the fourth quarter that a valuation allowance against its U.S. deferred tax assets was no longer necessary in addition to changes in the valuation allowance throughout the year caused principally by utilization of net operating loss carry forwards to offset current year pre-tax income. The higher interest expense is primarily a result of the interest rate swap becoming effective in January 2016. The effective tax rate was 63.7 percent for 2016, compared to (135.9) percent in the prior year. The change in the effective tax rate was driven by the release of the U.S. valuation allowance in 2015. The 2016 effective tax rate is impacted by a reserve for uncertain tax positions, an unbenefited pre-tax loss in the Netherlands due to a valuation allowance and a smaller proportion of pre-tax income in lower tax rate jurisdictions. Other less material factors were foreign withholding tax and non-taxable foreign translation gains. See note 8, Income Taxes, to the Consolidated Financial Statements for further details on the effective tax rate.

Segment Earnings Before Interest and Income Taxes (Segment EBIT)

The following table summarizes Segment EBIT[(1)] by operating segments:

Year ended December 31, (dollars in thousands)	2016	2015	$ Change	Segment EBIT Margin 2016	Segment EBIT Margin 2015
U.S. & Canada	$ 77,916	$ 80,406	$ (2,490)	16.0 %	16.2%
Latin America	$ 10,731	$ 22,017	$ (11,286)	7.1 %	13.2%
EMEA	$ (1,002)	$ 1,251	$ (2,253)	(0.8)%	1.0%

(1) Segment EBIT represents earnings before interest and taxes and excludes amounts related to certain items we consider not representative of ongoing operations as well as certain retained corporate costs and other allocations that are not considered by management when evaluating performance. See note 19 to the Consolidated Financial Statements for a reconciliation of Segment EBIT to net income.

Segment EBIT — U.S. & Canada

Segment EBIT decreased to $77.9 million in 2016, compared to $80.4 million in 2015. Segment EBIT as a percentage of net sales for U.S. & Canada decreased to 16.0 percent in 2016, compared to 16.2 percent in the prior year. The primary drivers of the $2.5 million decrease in Segment EBIT were unfavorable manufacturing activity of $7.4 million primarily due to additional planned downtime to control inventory levels and unfavorable transactional currency of $0.9 million. Partially offsetting these decreases were a favorable sales impact of $4.5 million and favorable input costs of $1.2 million mainly related to natural gas pricing. The net sales impact equals net sales less the associated inventory at standard cost rates.

Segment EBIT — Latin America

Segment EBIT decreased to $10.7 million in 2016, compared to $22.0 million in 2015. Segment EBIT as a percentage of net

sales for Latin America decreased to 7.1 percent in 2016, compared to 13.2 percent in the prior year. The primary drivers of the $11.3 million decrease in Segment EBIT were an unfavorable currency impact of $5.0 million, an unfavorable sales impact of $4.4 million as a result of a weaker mix of product sold, additional depreciation expense of $4.3 million driven by increased capital investments in prior years and adjusting asset lives on furnaces, the non-repeating recovery of payroll taxes in 2015 of $0.7 million, and increased legal and professional fees of $0.6 million. These decreases were partially offset by favorable manufacturing activity of $3.7 million.

Segment EBIT — EMEA

Segment EBIT decreased to a loss of $(1.0) million in 2016, compared to income of $1.3 million in 2015. Segment EBIT as a percentage of net sales for EMEA decreased to (0.8) percent in 2016, compared to 1.0 percent in the prior year. The primary drivers of the $2.3 million decrease in Segment EBIT were unfavorable manufacturing activity of $4.6 million driven by our furnace consolidation efforts started in 2016 and additional depreciation expense of $0.9 million. Partially offsetting these decreases were the favorable impact from lower input costs of $1.4 million primarily related to natural gas, favorable sales impact of $1.0 million and a reduction of $0.8 million in selling, general and administrative labor costs.

Adjusted EBITDA

Adjusted EBITDA decreased by $6.4 million in 2016, to $109.8 million, compared to $116.1 million in 2015. As a percentage of net sales, Adjusted EBITDA was 13.8 percent for 2016, compared to 14.1 percent in 2015. The key contributors to the decrease in Adjusted EBITDA were those factors discussed above under Discussion of 2016 vs. 2015 Results of Operations and the elimination of the special items noted below in the reconciliation of net income to Adjusted EBITDA.

Year ended December 31, (dollars in thousands)	**2016**	**2015**
Net income	$ 10,073	$ 66,333
Add:		
Interest expense	20,888	18,484
Provision (benefit) for income taxes	17,711	(38,216)
Depreciation and amortization	48,486	42,712
Add: Special items before interest and taxes:		
Pension settlement (see note 9) [1]	168	21,693
Product portfolio optimization [2]	5,693	—
Work Stoppage [3]	4,162	—
Reorganization charges [4]	—	4,316
Executive terminations	4,460	870
Derivatives (see note 13) [5]	(1,860)	(218)
Environmental obligation [6]	—	157
Adjusted EBITDA	$ 109,781	$ 116,131

(1) The 2015 pension settlement charges relate to the unwinding in our EMEA region of direct ownership of the Dutch defined benefit pension plan.

(2) Product portfolio optimization relates to inventory reductions to simplify and improve our operations.

(3) Work stoppage relates to the lower production volume impact, shipping costs and other direct incremental expenses associated with the two-week Toledo, Ohio, work stoppage in the fourth quarter of 2016.

(4) Management reorganization to support our growth strategy.

(5) Derivatives relate to hedge ineffectiveness on our natural gas contracts as well as mark-to-market adjustments on our natural gas contracts that have been de-designated and those for which we did not elect hedge accounting.

(6) Environmental obligation relates to our assessment of Syracuse China Company as a potentially responsible party with respect to the Lower Ley Creek sub-site of the Onondaga Lake Superfund site.

Non-GAAP Measures

We sometimes refer to amounts, associated margins and other data derived from consolidated financial information but not required by GAAP to be presented in financial statements. Certain of these data are considered "non-GAAP financial measures" under Securities and Exchange Commission (SEC) Regulation G. Our non-GAAP measures are used by analysts,

investors and other interested parties to compare our performance with the performance of other companies that report similar non-GAAP measures. Libbey believes these non-GAAP measures provide meaningful supplemental information regarding financial performance by excluding certain expenses and benefits that may not be indicative of core business operating results. We believe the non-GAAP measures, when viewed in conjunction with U.S. GAAP results and the accompanying reconciliations, enhance the comparability of results against prior periods and allow for additional transparency of financial results and business outlook. In addition, we use non-GAAP data internally to assess performance and facilitate management's internal comparison of our financial performance to that of prior periods, as well as trend analysis for budgeting and planning purposes. The presentation of our non-GAAP measures is not intended to be considered in isolation or as a substitute for, or superior to, the financial information prepared and presented in accordance with U.S. GAAP. Furthermore, our non-GAAP measures may not be comparable to similarly titled measures reported by other companies and may have limitations as an analytical tool.

We define Adjusted EBITDA as net income plus interest expense, provision for income taxes, depreciation and amortization, and special items that Libbey believes are not reflective of our core operating performance. The most directly comparable U.S. GAAP financial measure is net income.

We present Adjusted EBITDA because we believe it is used by analysts, investors and other interested parties in comparing our performance across reporting periods on a consistent basis by excluding items that we do not believe are indicative of our core business operating results. Adjusted EBITDA also allows for a measure of comparability to other companies with different capital and legal structures, which accordingly may be subject to different interest rates and effective tax rates, and to companies that may incur different depreciation and amortization expenses or impairment charges. In addition, we use Adjusted EBITDA internally to measure profitability.

Adjusted EBITDA has limitations as an analytical tool. Some of these limitations are:

- Adjusted EBITDA does not reflect changes in, or cash requirements for, our working capital needs;
- Adjusted EBITDA does not reflect the significant interest expense, or the cash requirements necessary to service interest or principal payments, on our debts;
- Although depreciation and amortization are non-cash charges, the assets being depreciated and amortized will often have to be replaced in the future, and Adjusted EBITDA does not reflect any cash requirements for such replacements of capital expenditures or contractual commitments;
- Adjusted EBITDA does not reflect the impact of certain cash charges resulting from matters we consider not to be indicative of our ongoing operations; and
- Other companies in our industry may calculate Adjusted EBITDA differently than we do, limiting its usefulness as a comparative measure.

Because of these limitations, Adjusted EBITDA should not be considered in isolation or as a substitute for performance measures calculated in accordance with U.S. GAAP.

Constant Currency

We translate revenue and expense accounts in our non-U.S. operations at current average exchange rates during the year. References to "constant currency," "excluding currency impact" and "adjusted for currency" are considered non-GAAP measures. Constant currency references regarding net sales reflect a simple mathematical translation of local currency results using the comparable prior period’s currency conversion rate. Constant currency references regarding Segment EBIT, Adjusted EBITDA and Adjusted EBITDA Margin comprise a simple mathematical translation of local currency results using the comparable prior period's currency conversion rate plus the transactional impact of changes in exchange rates from revenues, expenses and assets and liabilities that are denominated in a currency other than the functional currency. We believe this non-GAAP constant currency information provides valuable supplemental information regarding our core operating results, better identifies operating trends that may otherwise by masked or distorted by exchange rate changes and provides a higher degree of transparency of information used by management in its evaluation of our ongoing operations. These non-GAAP measures should be viewed in addition to, and not as an alternative to, the reported results prepared in accordance with GAAP. Our currency market risks include currency fluctuations relative to the U.S. dollar, Canadian dollar, Mexican peso, Euro and RMB.

Discussion of 2015 vs. 2014 Results of Operations

Net Sales

The following table summarizes net sales by operating segment:

Year ended December 31, (dollars in thousands)	2015	2014	Increase/(Decrease) $ Change	Increase/(Decrease) % Change	Currency Effects	Constant Currency Sales Growth (Decline) [1]
U.S. & Canada	$ 497,728	$ 482,094	$ 15,634	3.2 %	$ (811)	3.4 %
Latin America	167,069	190,079	(23,010)	(12.1)%	(20,575)	(1.3)%
EMEA	122,664	147,587	(24,923)	(16.9)%	(22,883)	(1.4)%
Other	34,884	32,732	2,152	6.6 %	(686)	8.7 %
Consolidated	$ 822,345	$ 852,492	$ (30,147)	(3.5)%	$ (44,955)	1.7 %

(1) We believe the constant currency sales growth (decline), a non-gaap measure, is a useful metric for evaluating our financial performance. See the "Non-GAAP Measures" section above for the reasons we believe this non-GAAP metric is useful and how it is derived.

Net Sales — U.S. & Canada

Net sales in the U.S. & Canada were $497.7 million, compared to $482.1 million in 2014, an increase of 3.2 percent. The primary contributor was a 7.5 percent increase, or $18.4 million, in sales in our foodservice channel due to a stronger volume and favorable mix in spite of the continuing decline in U.S. restaurant traffic. In addition, net sales increased 1.1 percent, or $1.0 million, in our business-to-business channel. Partially offsetting these increases was a 2.5 percent decrease, or $3.7 million, in retail sales due to weaker volume.

Net Sales — Latin America

Net sales in Latin America were $167.1 million, compared to $190.1 million in 2014, a decrease of 12.1 percent (a decrease of 1.3 percent excluding currency fluctuation). The sales decrease was primarily due to the devaluation of the peso and weaker retail volumes.

Net Sales — EMEA

Net sales in EMEA were $122.7 million, compared to $147.6 million in 2014, a decrease of 16.9 percent (a decrease of 1.4 percent excluding currency fluctuation). The sales decrease was due to the devaluation of the euro and lower volume in all channels, as we were experiencing the negative impacts from the macro-economy and increased competition. Partially offsetting the reduction in volume was a favorable price and mix impact.

Gross Profit

Gross profit was $176.3 million in 2015, compared to $203.1 million in the prior year, a decrease of $26.8 million. Gross profit as a percentage of net sales decreased to 21.4 percent, compared to 23.8 percent in the prior year. The primary drivers of the $26.8 million decrease in gross profit were a negative currency impact of $15.4 million primarily related to the Mexican peso, $17.0 million in pension settlement charges primarily related to the unwinding of our Dutch defined benefit pension plan, $4.8 million related to the non-repeating net insurance proceeds in 2014 from the furnace malfunction at our Toledo, Ohio, manufacturing facility, an increase of $5.0 million in benefit related expenses (including $3.3 million of pension and healthcare costs), and $4.0 million of additional depreciation expense in 2015. Partially offsetting these unfavorable factors were a favorable $13.5 million net sales impact mainly due to a better price and mix in our U.S. & Canada segment and favorable input costs of $5.3 million for natural gas and electricity.

Income From Operations

Income from operations for the year ended December 31, 2015 decreased $37.5 million, to $43.7 million, compared to $81.2 million in the prior year. Income from operations as a percentage of net sales was 5.3 percent for the year ended December 31, 2015, compared to 9.5 percent in the prior year. The decrease in income from operations is the result of the decrease in gross profit of $26.8 million (discussed above), an increase of $7.3 million in investments to increase commercial and marketing capabilities and increased advertising expense, $4.3 million in reorganization charges, and a $4.4 million increase in pension

expense driven by the unwinding of our Dutch defined benefit pension plan. Partially offsetting these unfavorable impacts was a favorable currency impact of $4.7 million on selling, general and administrative expenses.

Net Income and Diluted Net Income Per Share

We recorded net income of $66.3 million, or $2.99 per diluted share, in 2015, compared to $5.0 million, or $0.22 per diluted share, in 2014. Net income as a percentage of net sales was 8.1 percent in 2015, compared to 0.6 percent in the prior year. The increase in net income and diluted net income per share is generally due to the factors discussed in Income From Operations above, the non-repeating loss on redemption of debt in 2014 of $47.2 million, a favorable change in income taxes of $46.8 million and a reduction in interest expense of $4.4 million. The favorable income tax benefit includes a tax benefit of $55.8 million related to management's decision in the fourth quarter that a valuation allowance against its U.S. deferred tax assets was no longer necessary in addition to changes in the valuation allowance throughout the year caused principally by utilization of net operating loss carry forwards to offset current year pretax income. The decrease in interest expense is primarily driven by a lower interest rate from the debt refinancing completed in the second quarter of 2014. The effective tax rate was (135.9) percent for 2015 compared to 63.3 percent in 2014. The change in the effective tax rate was primarily driven by the release of the U.S. valuation allowance. Other less material factors were foreign earnings with differing statutory tax rates, foreign withholding tax, accruals related to uncertain tax positions, non-taxable foreign translation gains, and other activity in jurisdictions with recorded valuation allowances.

Segment Earnings Before Interest and Income Taxes (Segment EBIT)

The following table summarizes Segment EBIT[(1)] by operating segments:

Year ended December 31, (dollars in thousands)	2015	2014	$ Change	Segment EBIT Margin 2015	Segment EBIT Margin 2014
U.S. & Canada	$ 80,406	$ 72,546	$ 7,860	16.2%	15.0%
Latin America	$ 22,017	$ 32,909	$ (10,892)	13.2%	17.3%
EMEA	$ 1,251	$ 5,726	$ (4,475)	1.0%	3.9%

(1) *Segment EBIT represents earnings before interest and taxes and excludes amounts related to certain items we consider not representative of ongoing operations as well as certain retained corporate costs and other allocations that are not considered by management when evaluating performance. See note 19 to the Consolidated Financial Statements for a reconciliation of Segment EBIT to net income.*

Segment EBIT — U.S. & Canada

Segment EBIT increased to $80.4 million in 2015 compared to $72.5 million in 2014. Segment EBIT as a percentage of net sales for U.S. & Canada increased to 16.2 percent in 2015, compared to 15.0 percent in the prior year. The primary drivers of the $7.9 million increase in Segment EBIT were a favorable sales impact of $17.1 million primarily driven by sales price, mix and volume and the non-repeat of 2014 non-income tax assessments of $0.8 million. The favorable sales impact above is partially offset by an increase of $3.0 million in expense for investments to increase our commercial and marketing capabilities and increased advertising, $2.5 million increase in pension and healthcare costs, $2.1 million in increased costs related to external warehousing and repair and maintenance expense, and $2.9 million related to new glass technology ramp-up in our Shreveport, Louisiana, facility.

Segment EBIT — Latin America

Segment EBIT decreased to $22.0 million in 2015, compared to $32.9 million in 2014. Segment EBIT as a percentage of net sales for Latin America decreased to 13.2 percent in 2015, compared to 17.3 percent in the prior-year. The primary drivers of the $10.9 million decrease in Segment EBIT were an unfavorable currency impact of $10.7 million and an unfavorable sales impact of $3.4 million. These unfavorable items were partially offset by favorable input costs of $3.4 million driven by lower prices of natural gas and electricity.

Segment EBIT — EMEA

Segment EBIT decreased to $1.3 million in 2015, compared to $5.7 million in 2014. Segment EBIT as a percentage of net sales for EMEA decreased to 1.0 percent in 2015, compared to 3.9 percent in the prior-year. The primary drivers of the

$4.5 million decrease in Segment EBIT were unfavorable manufacturing activity of $4.1 million and increased pension costs of $1.1 million, offset by favorable natural gas price of $0.6 million.

Adjusted EBITDA

Adjusted EBITDA decreased by $7.3 million in 2015, to $116.1 million, compared to $123.4 million in 2014. As a percentage of net sales, Adjusted EBITDA was 14.1 percent for 2015, compared to 14.5 percent in 2014. The key contributors to the decrease in Adjusted EBITDA were those factors discussed above under Discussion of 2015 vs. 2014 Results of Operations and the elimination of the special items noted below in the reconciliation of net income to Adjusted EBITDA.

Year ended December 31, (dollars in thousands)	**2015**	**2014**
Net income	$ 66,333	$ 4,963
Add:		
Interest expense	18,484	22,866
Provision (benefit) for income taxes	(38,216)	8,567
Depreciation and amortization	42,712	40,388
Add: Special items before interest and taxes:		
Loss on redemption of debt (see note 6) [(1)]	—	47,191
Pension settlement (see note 9) [(2)]	21,693	774
Furnace malfunction (see note 18) [(3)]	—	(4,782)
Restructuring charges (see note 7) [(4)]	—	985
Reorganization charges [(5)]	4,316	—
Executive terminations	870	875
Environmental obligation (see note 18) [(6)]	157	315
Derivatives (see note 13) [(7)]	(218)	1,247
Adjusted EBITDA	$ 116,131	$ 123,389

(1) Loss on redemption of debt for 2014 includes the write-off of unamortized finance fees and call premium payments on the $405.0 million Senior Secured Notes redeemed in April and May 2014, and the write-off of the debt carrying value adjustment related to the termination of the $45.0 million interest rate swap.

(2) The 2015 pension settlement charges relate to the unwinding in our EMEA region of direct ownership of the Dutch defined benefit pension plan. The pension settlement charge for 2014 relates to excess lump sum distributions.

(3) Furnace malfunction in 2014 relates to a $10.7 million insurance recovery, net of a loss of production of $5.9 million, at our Toledo, Ohio, manufacturing facility.

(4) Restructuring charges relate to discontinuing production of certain glassware in North America and reducing manufacturing capacity at our Shreveport, Louisiana, facility.

(5) Reorganization charges relate to management reorganization to support our growth strategy.

(6) Environmental obligation relates to our assessment of Syracuse China Company as a potentially responsible party with respect to the Lower Ley Creek sub-site of the Onondaga Lake Superfund site.

(7) Derivatives relate to hedge ineffectiveness on our natural gas contracts and interest rate swap, as well as, mark-to-market adjustments on our natural gas contracts that have been de-designated and those for which we did not elect hedge accounting.

We sometimes refer to data derived from consolidated financial information but not required by GAAP to be presented in financial statements. Certain of these data are considered "non-GAAP financial measures" under SEC Regulation G. We believe that certain non-GAAP data provide investors with a more complete understanding of underlying results in our core business and trends. In addition, we use non-GAAP data internally to assess performance. Although we believe that the non-GAAP financial measures presented enhance investors' understanding of our business and performance, these non-GAAP measures should not be considered an alternative to GAAP. For our definition of these non-GAAP measures and certain limitations, see the Non-GAAP Measures section in the Discussion of 2016 vs. 2015 Results of Operations above.

Capital Resources and Liquidity

Historically, cash flows generated from operations, cash on hand and our borrowing capacity under our ABL Facility have enabled us to meet our cash requirements, including capital expenditures and working capital requirements. Under the ABL

Facility at December 31, 2016, we had no borrowings, $7.0 million outstanding in letters of credit and $0.5 million in rent reserves, resulting in $88.4 million of unused availability. In addition, we had $61.0 million of cash on hand at December 31, 2016, compared to $49.0 million of cash on hand at December 31, 2015. Of our total cash on hand at December 31, 2016 and 2015, $32.3 million and $27.0 million, respectively, were held in foreign subsidiaries. Except for our Chinese and Canadian subsidiaries, we plan to indefinitely reinvest the earnings of all foreign subsidiaries to support ongoing operations, capital expenditures, debt service, and continued growth plans outside the United States. Our Chinese subsidiaries' cash balance was $11.8 million as of December 31, 2016. Local law currently prevents distribution of this cash as a dividend because 100 percent of our Chinese subsidiaries' distributable income was paid as a dividend in the fourth quarter of 2015; however, additional amounts may become distributable based on future income.

Based on our operating plans and current forecast expectations, we anticipate that our level of cash on hand, cash flows from operations and our borrowing capacity under our ABL Facility will provide sufficient cash availability to meet our ongoing liquidity needs.

Balance Sheet and Cash Flows

Cash and Equivalents

See the cash flow section below for a discussion of our cash balance.

Trade Working Capital

The following table presents our trade working capital components:

December 31, (dollars in thousands, except percentages and DSO, DIO, DPO and DWC)	2016	2015
Accounts receivable — net	$ 85,113	$ 94,379
DSO [(1)]	*39.2*	*41.9*
Inventories — net	$ 170,009	$ 178,027
DIO [(2)]	*78.2*	*79.0*
Accounts payable	$ 71,582	$ 71,560
DPO [(3)]	*32.9*	*31.8*
Trade working capital [(4)]	$ 183,540	$ 200,846
DWC [(5)]	*84.4*	*89.1*
Percentage of net sales	*23.1%*	*24.4%*

(1) Days sales outstanding (DSO) measures the number of days it takes to turn receivables into cash.

(2) Days inventory outstanding (DIO) measures the number of days it takes to turn inventory into cash.

(3) Days payable outstanding (DPO) measures the number of days it takes to pay the balances of our accounts payable.

(4) Trade Working Capital is defined as net accounts receivable plus net inventories less accounts payable. See below for further discussion as to the reasons we believe this non-GAAP financial measure is useful.

(5) Days trade working capital (DWC) measures the number of days it takes to turn our Trade Working Capital into cash.

DSO, DIO, DPO and DWC are calculated using the last twelve months' net sales as the denominator and are based on a 365-day year.

We believe that Trade Working Capital is important supplemental information for investors in evaluating liquidity in that it provides insight into the availability of net current resources to fund our ongoing operations. Trade Working Capital is a measure used by management in internal evaluations of cash availability and operational performance.

Trade Working Capital is used in conjunction with and in addition to results presented in accordance with U.S. GAAP. Trade Working Capital is neither intended to represent nor be an alternative to any measure of liquidity and operational performance recorded under U.S. GAAP. Trade Working Capital may not be comparable to similarly titled measures reported by other companies.

Trade working capital (as defined above) decreased by $17.3 million in 2016, compared to 2015. During 2016 we made it a priority to improve our working capital management, including by executing our product portfolio optimization initiative to reduce inventory and simplify and improve our operations. Our decrease in trade working capital is primarily due to reduction

in inventories resulting from strategic initiatives, decreased accounts receivable related to timing of collections and lower sales, and flat accounts payable. The impact of currency (primarily driven by the euro and peso) decreased total trade working capital by $4.4 million at December 31, 2016, in comparison to December 31, 2015. As a result of these factors, trade working capital as a percentage of net sales improved to 23.1 percent at December 31, 2016, compared to the 24.4 percent at December 31, 2015.

Borrowings

The following table presents our total borrowings:

(dollars in thousands)	Interest Rate	Maturity Date	December 31, 2016	December 31, 2015
Borrowings under ABL Facility	floating	April 9, 2019	$ —	$ —
Term Loan B	floating (1)	April 9, 2021	409,000	433,400
AICEP Loan	0.00%	January, 2017 to July 30, 2018	3,320	3,451
Total borrowings			412,320	436,851
Less — unamortized discount and finance fees			4,480	5,832
Total borrowings — net (1) (2)			$ 407,840	$ 431,019

(1) *See "Derivatives" below and note 13 to the Consolidated Financial Statements.*
(2) *Total borrowings-net includes long-term debt due within one year and long-term debt as stated on the Consolidated Balance Sheets.*
(3) *See "Contractual Obligations" below for scheduled payments by period.*

We had total borrowings of $412.3 million at December 31, 2016, compared to total borrowings of $436.9 million at December 31, 2015. The $24.5 million decrease in borrowings was a result of $20.0 million in optional prepayments that were in addition to the $1.1 million quarterly amortization payments of our Term Loan B.

Of our total borrowings, $189.0 million, or approximately 45.8 percent, was subject to variable interest rates at December 31, 2016 as a result of converting $220.0 million of Term Loan B debt to a fixed rate using an interest rate swap. The swap is effective January 2016 through January 2020 and maintains a 4.85 percent fixed interest rate. For further discussion on the interest rate swap, see note 13 to the Consolidated Financial Statements. A change of one percentage point in such rates would result in a change in interest expense of approximately $1.9 million on an annual basis.

Included in interest expense are the amortization of discounts and other financing fees. These items amounted to $1.4 million, $1.4 million and $1.5 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Cash Flow

Year ended December 31, (dollars in thousands)	2016	2015	2014
Net cash provided by operating activities	$ 82,643	$ 66,099	$ 81,871
Net cash used in investing activities	$ (34,604)	$ (48,129)	$ (52,019)
Net cash used in financing activities	$ (34,715)	$ (26,404)	$ (9,745)

Discussion of 2016 vs. 2015 Cash Flow

Our net cash provided by operating activities was $82.6 million in 2016, compared to $66.1 million in 2015, or an increase of $16.5 million. Contributing to the increase in cash flow from operations was a favorable cash flow impact of $30.1 million related to accounts receivable, inventories and accounts payable, which excludes a $5.8 million non-cash inventory reserve primarily related to the product portfolio optimization initiative. Also increasing cash flow from operations was the reduction of pension and non-pension payments of $6.5 million. Partially offsetting the cash flow increases were an increase in interest payments of $5.0 million, an increase in payments for reorganization and severance activity of $3.2 million, an increase in income tax payments of $2.0 million, a cash settled RSU payment of $2.3 million paid in conjunction with our former CEO's departure from the Company and an increase in customer incentive payments of $2.5 million.

Our net cash used in investing activities was $(34.6) million and $(48.1) million in 2016 and 2015, respectively, primarily representing capital expenditures. 2015 capital expenditures included capital investments for our new ClearFire® technology.

Net cash used in financing activities was $(34.7) million in 2016, compared to $(26.4) million in 2015, or a change of $8.3 million. 2016 reflects the impact of Term Loan B payments of $(24.4) million, dividends of $(10.1) million, and the purchase of treasury shares of $(2.0) million, offset by proceeds from stock option exercises of $1.4 million and the related excess tax benefit of $0.4 million. 2015 reflects the impact of treasury share purchases of $(15.3) million, dividends of $(9.6) million, Term Loan B payments of $(4.4) million, and other debt repayments of $(3.3) million, offset by proceeds from stock options exercised of $3.3 million and the related excess tax benefit of $2.8 million.

At December 31, 2016, our cash balance was $61.0 million, an increase of $12.0 million from $49.0 million at December 31, 2015.

Discussion of 2015 vs. 2014 Cash Flow

Our net cash provided by operating activities was $66.1 million in 2015, compared to $81.9 million in 2014, or a decrease of $15.8 million. Contributing to the decrease in cash provided by operating activities were an unfavorable change in Trade Working Capital (accounts receivable, inventories and accounts payable) of $14.2 million, the non-repeating insurance proceeds related to the furnace malfunction of $13.3 million, and higher pension and non-pension payments of $2.2 million. These were partially offset by a favorable change in prepaids of $8.1 million (primarily related to prepaid value added tax), lower interest payments of $3.8 million, lower tax payments of $1.7 million, and the non-repeating terminated interest rate swap payment of $1.1 million.

Our net cash used in investing activities was $(48.1) million and $(52.0) million in 2015 and 2014, respectively, primarily representing capital expenditures. 2014 capital expenditures were partially offset by the receipt of proceeds from the furnace malfunction insurance recovery of $2.4 million.

Net cash used in financing activities was $(26.4) million in 2015, compared to $(9.7) million in 2014, or a change of $16.7 million. 2015 reflects the impact of treasury share purchases of $(15.3) million, dividends of $(9.6) million, Term Loan B payments of $(4.4) million, and other debt repayments of $(3.3) million, offset by proceeds from stock options exercised of $3.3 million and the related excess tax benefit of $2.8 million. 2014 reflects the impact of the refinancing of the Senior Secured Notes with the Term Loan B of $(10.4) million, the Term Loan B payments of $(2.2) million, the purchase of treasury shares of $(1.1) million, and net other debt repayments of $(0.6) million, offset by the proceeds from stock option exercises of $4.6 million.

At December 31, 2015, our cash balance was $49.0 million, a decrease of $11.0 million from $60.0 million at December 31, 2014.

Free Cash Flow

The following table presents key drivers to our non-GAAP Free Cash Flow for 2016, 2015 and 2014.

Year ended December 31, (dollars in thousands)	**2016**	**2015**	**2014**
Net cash provided by operating activities	$ 82,643	$ 66,099	$ 81,871
Net cash used in investing activities	(34,604)	(48,129)	(52,019)
Free Cash Flow [(1)]	$ 48,039	$ 17,970	$ 29,852

(1) We define Free Cash Flow as the sum of net cash provided by operating activities and net cash used in investing activities. The most directly comparable U.S. GAAP financial measure is net cash provided by operating activities.

(2) 2016 and 2014 excludes $1.3 million and $2.3 million, respectively, for capital expenditures incurred but not yet paid. 2015 includes $2.7 million for capital expenditures paid in 2015 but incurred in a prior year.

We believe that Free Cash Flow is important supplemental information for investors in evaluating cash flow performance in that it provides insight into the cash flow available to fund such things as debt service, acquisitions and other strategic investment opportunities. It is a measure we use to internally evaluate the overall liquidity of the business. Free Cash Flow does not represent residual cash flows available for discretionary expenditures due to our mandatory debt service requirements.

Free Cash Flow is used in conjunction with and in addition to results presented in accordance with U.S. GAAP. Free Cash Flow is neither intended to represent nor be an alternative to the measure of net cash provided by operating activities recorded under U.S. GAAP. Free Cash Flow may not be comparable to similarly titled measures reported by other companies.

Our Free Cash Flow was $48.0 million during 2016, compared to $18.0 million in 2015, an increase of $30.1 million. The primary contributors to this change were the $16.5 million favorable cash flow impact from operating activities in 2016 and a favorable change of $13.5 million in investing activities, as discussed above.

Our Free Cash Flow was $18.0 million during 2015, compared to $29.9 million in 2014, a reduction of $11.9 million. The primary contributors to this change were the $15.8 million unfavorable cash flow impact from operating activities in 2015, partially offset by a favorable change of $3.9 million in investing activities, as discussed above.

Derivatives

We use natural gas swap contracts related to forecasted future North American natural gas requirements. The objective of these commodity contracts is to limit the fluctuations in prices paid due to price movements in the underlying commodity. We consider our forecasted natural gas requirements in determining the quantity of natural gas to hedge. We combine the forecasts with historical observations to establish the percentage of forecast eligible to be hedged, typically ranging from 40 percent to 70 percent of our anticipated requirements up to eighteen months in the future. The fair values of these instruments are determined from market quotes. At December 31, 2016, we had commodity contracts for 2,590,000 million British Thermal Units (BTUs) of natural gas with a fair market value of a $1.5 million asset. We have hedged a portion of our forecasted transactions through December 2018. At December 31, 2015, we had commodity futures contracts for 3,000,000 million BTUs of natural gas with a fair market value of a $2.2 million liability. The counterparties for these derivatives were rated BBB+ or better as of December 31, 2016, by Standard & Poor's.

We have an interest rate swap agreement with respect to $220.0 million of our floating rate Term Loan B debt in order to fix a series of our future interest payments. The interest rate swap matures on January 9, 2020 and maintains a fixed interest rate of 4.85 percent, including the credit spread. At December 31, 2016, the Term Loan B debt held a floating interest rate of 3.75 percent. If the counterparty to the interest rate swap agreement were to fail to perform, the interest rate swap would no longer provide the desired results. However, we do not anticipate nonperformance by the counterparty. The counterparty held a Standard & Poor's rating of A+ as of December 31, 2016.

The fair market value of our interest rate swap agreement is based on the market standard methodology of netting the discounted expected future variable cash receipts and the discounted future fixed cash payments. The variable cash receipts are based on an expectation of future interest rates derived from observed market interest rate forward curves. The fair market value of the interest rate swap agreement was a $2.0 million liability at December 31, 2016 and a $2.4 million liability at December 31, 2015.

Contractual Obligations

The following table presents our existing contractual obligations at December 31, 2016 and related future cash requirements:

	Payments Due by Year				
Contractual Obligations[1] (dollars in thousands)	**Total**	**2017**	**2018-2019**	**2020-2021**	**2022 and thereafter**
Borrowings	$ 412,320	$ 5,009	$ 11,511	$ 395,800	$ —
Interest payments[2]	72,273	17,927	35,353	18,993	—
Long-term operating leases	96,325	14,491	25,827	20,016	35,991
Pension and nonpension[3]	7,551	7,551	—	—	—
Purchase obligations[4]	40,864	30,535	9,453	763	113
Long-term incentive plans	2,366	1,233	1,133	—	—
Total obligations	$ 631,699	$ 76,746	$ 83,277	$ 435,572	$ 36,104

(1) Amounts reported in local currencies have been translated at 2016 exchange rates.

(2) The obligations for interest payments are based on December 31, 2016 debt levels and interest rates.

(3) This amount represents 2017 expected contributions to our global pension and nonpension benefit plans. We have not estimated pension contributions beyond 2017 due to the significant impact that return on plan assets and changes in discount rates might have on such amounts.

(4) The purchase obligations consist principally of contracted amounts for energy, raw materials and fixed assets. The amount excludes purchase orders in the ordinary course of business that may be canceled. We do not believe such purchase orders will adversely affect our liquidity position.

In addition to the above, we have commercial commitments secured by letters of credit and guarantees. Our letters of credit outstanding at December 31, 2016, totaled $7.0 million.

We are unable to make a reasonably reliable estimate as to when cash settlement with taxing authorities may occur for our unrecognized tax benefits. Therefore, our liability for unrecognized tax benefits of $3.5 million at December 31, 2016 is not included in the table above. See note 8 to the Consolidated Financial Statements for additional information.

CRITICAL ACCOUNTING ESTIMATES

The preparation of financial statements and related disclosures in conformity with U.S. generally accepted accounting principles requires us to make judgments, estimates and assumptions that affect the reported amounts in the Consolidated Financial Statements and accompanying notes. Note 2 to the Consolidated Financial Statements describes the significant accounting policies and methods used in their preparation. The areas described below are affected by critical accounting estimates and are impacted significantly by judgments and assumptions in the preparation of the Consolidated Financial Statements. Actual results could differ materially from the amounts reported based on these critical accounting estimates.

Revenue Recognition

Revenue is recognized when products are shipped and title and risk of loss have passed to the customer. Revenue is recorded net of returns, discounts and sales incentive programs offered to customers. We offer various incentive programs to a broad base of customers, and we record accruals for these as sales occur. These programs typically offer incentives for purchase activities by customers that include growth objectives. Criteria for payment include the achievement by customers of certain purchase targets and the purchase by customers of particular product types. Management regularly reviews the adequacy of the accruals based on current customer purchases, targeted purchases and payout levels.

Slow-Moving and Obsolete Inventory

We identify slow-moving or obsolete inventories and estimate appropriate loss provisions accordingly. We recognize inventory loss provisions based upon excess and obsolete inventories driven primarily by future demand forecasts. At December 31, 2016, our inventories were $170.0 million, with loss provisions of $9.5 million, compared to inventories of $178.0 million and loss provisions of $5.3 million at December 31, 2015. The increase in inventory loss provisions at December 31, 2016 is due to our second quarter 2016 initiative to optimize our product portfolio to reduce inventory and simplify and improve our operations.

Asset Impairment

Fixed Assets

We assess our property, plant and equipment for possible impairment in accordance with FASB ASC Topic 360, "Property Plant and Equipment" ("FASB ASC 360"), whenever events or changes in circumstances indicate that the carrying value of the assets may not be recoverable or a revision of remaining useful lives is necessary. Such indicators may include economic and competitive conditions, changes in our business plans or management's intentions regarding future utilization of the assets or changes in our commodity prices. An asset impairment would be indicated if the sum of the expected future net pretax cash flows from the use of an asset (undiscounted and without interest charges) is less than the carrying amount of the asset. An impairment loss would be measured based on the difference between the fair value of the asset and its carrying value. The determination of fair value is based on an expected present value technique in which multiple cash flow scenarios that reflect a range of possible outcomes and a risk-free rate of interest are used to estimate fair value or on a market appraisal. Projections used in the fair value determination are based on internal estimates for sales and production levels, capital expenditures necessary to maintain the projected production levels, and remaining useful life of the assets. These projections are prepared at the lowest level at which we have access to cash flow information and complete financial data for our operations, which is generally at the plant level.

Determination as to whether and how much an asset is impaired involves significant management judgment involving highly uncertain matters, including estimating the future success of product lines, future sales volumes, future selling prices and costs, alternative uses for the assets, and estimated proceeds from disposal of the assets. However, the impairment reviews and calculations are based on estimates and assumptions that take into account our business plans and long-term investment decisions. There were no indicators of impairment noted in 2016 and 2015 that required an impairment analysis to be performed for the Company's property, plant and equipment.

In accordance with FASB ASC 360, we also perform an impairment analysis for our definite useful lived intangible assets when factors indicating impairment are present. There were no indicators of impairment noted in 2016 or 2015 that would require an impairment analysis to be performed for our definite useful lived intangible assets.

Goodwill and Indefinite Life Intangible Assets

Goodwill at December 31, 2016 was $164.1 million, representing approximately 20.1 percent of total assets. Goodwill represents the excess of cost over fair value of assets acquired for each reporting unit. Our reporting units represent the lowest level of the business for which financial statements are prepared internally, and may represent a single facility (operating component) or a group of plants under a common management team. Goodwill impairment tests are completed for each reporting unit as of October 1 of each year, or more frequently in certain circumstances where impairment indicators arise.

When performing our test for impairment, we measured each reporting unit's fair value using a combination of "Market" and "Income" approaches. In the Market approach, the "Guideline Company" method is used, which focuses on comparing the Company's risk profile and growth prospects to reasonably similar publicly traded companies. Key assumptions used for the Guideline Company method are guideline companies, comparable multiples, as well as consideration of control premiums. Under the Income approach, a discounted cash flow method is used, which includes a terminal value, and is based on internal financial projection estimates. Discount rates use the weighted average cost of capital for companies within our peer group, adjusted for specific company risk premium factors. Under each approach, the fair value is then compared to the carrying value. To the extent that fair value exceeds the carrying value, no impairment exists. However, to the extent the carrying value exceeds the fair value, we compare the implied fair value of goodwill to its book value to determine if an impairment should be recorded.

As of October 1, 2016, 2015 and 2014, our reviews did not indicate an impairment of goodwill. Based on the results of our 2016 annual impairment test, the estimated fair values of all three reporting units that have goodwill were substantially in excess of their carrying values with the exception of our Latin America reporting unit. The Latin America reporting unit, which has goodwill of $125.7 million allocated to it, had an estimated fair value exceeding its carrying value by approximately 50 percent. Management considers several factors to be significant when estimating fair value including expected financial outlook of the business, changes in the Company's stock price, the impact of changing market conditions on financial performance and expected future cash flows, foreign currency impacts, the geopolitical environment and other factors. Deterioration in any of these factors may result in a lower fair value assessment, which could lead to impairment charges in the future.

Subsequent to the October 1, 2016 test, events occurred, including a further decline in the value of the peso and a shift in the geopolitical environment, which were indicators of potential impairment at December 31, 2016. As such, a test was performed as of December 31, 2016 which resulted in no impairment to goodwill. Based on results of the December 31, 2016 impairment test, the estimated fair value of our Latin America reporting unit still exceeded its carrying value, however, the excess decreased to approximately 30 percent. We performed a sensitivity analysis on the Latin America reporting unit's income approach calculation as of December 31, 2016. Assuming all other factors remain constant, either the discount rate could be increased by a factor of 15% or we could have a sustained miss of the forecasted profitability by 15% and the fair value of the reporting unit would still exceed its carrying value. The estimated fair value of our other two reporting units that have goodwill continued to substantially exceed their carrying values, by a minimum of approximately 100%.

Individual indefinite life intangible assets are also evaluated for impairment on an annual basis, or more frequently in certain circumstances where impairment indicators arise. Total indefinite life intangible assets at December 31, 2016 were $11.9 million, representing 1.5 percent of total assets. When performing our test for impairment, we use a discounted cash flow method (based on a relief from royalty calculation) to compute the fair value, which is then compared to the carrying value of the indefinite life intangible asset. To the extent that fair value exceeds the carrying value, no impairment exists. This was done as of October 1st for each year presented. As of October 1, 2016, 2015 and 2014, our review did not indicate an impairment of indefinite life intangible assets.

Self-Insurance Reserves

We use self-insurance mechanisms to provide for potential liabilities related to workers' compensation and employee health care benefits that are not covered by third-party insurance. Workers' compensation accruals are recorded at the estimated ultimate payout amounts based on individual case estimates. In addition, we record estimates of incurred-but-not-reported losses based on actuarial models.

Although we believe that the estimated liabilities for self-insurance are adequate, the estimates described above may not be indicative of current and future losses. In addition, the actuarial calculations used to estimate self-insurance liabilities are based on numerous assumptions, some of which are subjective. We will continue to adjust our estimated liabilities for self-insurance, as deemed necessary, in the event that future loss experience differs from historical loss patterns.

Pension Assumptions

We have pension plans covering the majority of our employees. For a description of these plans, see note 9 to the Consolidated Financial Statements.

The assumptions used to determine the benefit obligations were as follows:

	U.S. Plans		Non-U.S. Plans	
	2016	2015	2016	2015
Discount rate	4.18% to 4.23%	4.60% to 4.73%	9.30%	8.10%
Rate of compensation increase	Not applicable	Not applicable	4.30%	4.30%

The assumptions used to determine net periodic pension costs were as follows:

	U.S. Plans			Non-U.S. Plans		
	2016	2015	2014	2016	2015	2014
Discount rate	4.66% to 4.73%	4.17% to 4.29%	4.83% to 5.12%	8.10%	2.30% to 7.60%	3.70% to 8.50%
Expected long-term rate of return on plan assets	7.25%	7.25%	7.25%	—%	4.00%	4.10%
Rate of compensation increase	Not applicable	Not applicable	Not applicable	4.30%	2.00% to 4.30%	2.00% to 4.30%

Two critical assumptions, discount rate and expected long-term rate of return on plan assets, are important elements of plan expense and asset/liability measurement. We evaluate these critical assumptions on our annual measurement date of December 31st. Other assumptions involving demographic factors such as retirement age, mortality and turnover are evaluated periodically and are updated to reflect our experience. Actual results in any given year often will differ from actuarial assumptions because of demographic, economic and other factors.

The discount rate enables us to estimate the present value of expected future cash flows on the measurement date. The rate used reflects a rate of return on high-quality fixed income investments that match the duration of expected benefit payments at our December 31 measurement date. The discount rate at December 31st is used to measure the year-end benefit obligations and the earnings effects for the subsequent year. A lower discount rate increases the present value of benefit obligations and increases pension expense.

To determine the expected long-term rate of return on plan assets, we consider the current and expected asset allocations, as well as historical and expected returns on various categories of plan assets. Our determination of the reasonableness of our expected long-term rate of return on plan assets at December 31st is highly quantitative by nature and used to measure the earnings effects for the subsequent year. We evaluate the current asset allocations and expected returns under four sets of conditions: a maximum time available for each asset class; a common history where all asset class returns are computed with the same overall start date of January 1990; a 10-year historical return; and forecasted returns using the Black-Litterman method. Based upon the current asset allocation mix and the Black-Litterman method, the forecasted return is 6.65 percent. The actual return on plan assets from July 1, 1993 (inception) through December 31, 2016 was 8.31 percent and 8.15 percent for the U.S. hourly and salary pension plans, respectively.

Since over 85 percent of the plan assets are actively managed, we adjust the baseline forecasted return for the anticipated return differential from active over passive investment management and for any other items not already captured. We believe that the combination of long-term historical returns, along with the forecasted returns and manager alpha, supports the 7.0 percent rate of return assumption for 2017 based on the current asset allocation.

Sensitivity to changes in key assumptions based on year-end data is as follows:

- A change of 1.0 percent in the discount rate would change our annual pretax pension expense by approximately $3.3 million.
- A change of 1.0 percent in the expected long-term rate of return on plan assets would change annual pretax pension expense by approximately $3.2 million.

Nonpension Postretirement Assumptions

We use various actuarial assumptions, including the discount rate and the expected trend in health care costs, to estimate the costs and benefit obligations for our retiree welfare plan. The discount rate is determined based on high-quality fixed income investments that match the duration of expected retiree medical benefits at our December 31 measurement date. The discount rate at December 31 is used to measure the year-end benefit obligations and the earnings effects for the subsequent year. The discount rates used to determine the accumulated postretirement benefit obligation and net postretirement benefit cost were as follows:

	U.S. Plans			Non-U.S. Plans		
	2016	2015	2014	2016	2015	2014
Accumulated postretirement benefit obligation	4.05%	4.56%	4.10%	3.48%	3.69%	3.61%
Net postretirement benefit cost	4.56%	4.10%	4.74%	3.69%	3.61%	4.36%

The weighted average assumed health care cost trend rates at December 31 were as follows:

	U.S. Plans		Non-U.S. Plans	
	2016	2015	2016	2015
Initial health care trend	6.75%	7.00%	6.75%	7.00%
Ultimate health care trend	5.00%	5.00%	5.00%	5.00%
Year the ultimate trend rate is reached	2024	2024	2024	2024

Sensitivity to change in key assumptions is as follows:

- A change of 1.0 percent in the discount rate would change the nonpension postretirement expense by $0.2 million.
- A change of 1.0 percent in the health care trend rate would not have a material impact upon the nonpension postretirement expense.

Income Taxes

We are subject to income taxes in the U.S. and various foreign jurisdictions. Management judgment is required in evaluating our tax positions and determining our provision for income taxes. Throughout the course of business, there are numerous transactions and calculations for which the ultimate tax determination is uncertain. When management believes certain tax positions may be challenged despite our belief that the tax return positions are supportable, we establish reserves for tax uncertainties based on estimates of whether additional taxes will be due. We adjust these reserves taking into consideration changing facts and circumstances, such as an outcome of a tax audit. The income tax provision includes the impact of reserve provisions and changes to reserves that are considered appropriate. Accruals for tax contingencies are provided for in accordance with the requirements of FASB ASC Topic 740 "Income Taxes".

Income taxes are accounted for under the asset and liability method. Deferred income tax assets and liabilities are recognized for estimated future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and tax attribute carry-forwards. Deferred income tax assets and liabilities are measured using enacted tax rates in effect for the year in which those temporary differences are expected to be recovered or settled. FASB ASC 740 "Income Taxes," requires that a valuation allowance be recorded when it is more likely than not that some portion or all of the deferred income tax assets will not be realized. Deferred income tax assets and liabilities are determined separately for each tax jurisdiction in which we conduct our operations or otherwise incur taxable income or losses.

As of December 31, 2015, management has considered the evidence, both positive and negative, in assessing the realizability of our deferred tax assets in the U.S. The positive evidence, including achievement of cumulative income in recent years and expectations for sustainable future income, was strong enough to conclude that it is more likely than not that nearly all of our deferred tax assets are realizable and the valuation allowance was reduced accordingly.

Our European operations in the Netherlands incurred an operating loss in 2016, continues to be in cumulative loss positions in recent years, and has a history of tax loss carry-forwards expiring unused. In addition, European economic conditions continue to be unfavorable. Accordingly, management believes it is not more likely than not that a portion of the deferred tax assets related to these operations will be realized and valuation allowance continues to be recorded as of December 31, 2016.

The Company and its subsidiaries are subject to examination by various countries' tax authorities. These examinations may lead to proposed or assessed adjustments to our taxes. See note 8, Income Taxes, to the Consolidated Financial Statements for a detailed discussion on tax contingencies.

Legal and Other Contingencies

We are involved from time to time in various legal proceedings and claims, including commercial or contractual disputes, product liability claims and environmental and other matters, that arise in the normal course of business. We routinely assess the likelihood of any adverse judgments or outcomes related to these matters, as well as ranges of probable losses, by consulting with internal personnel principally involved with such matters and with our outside legal counsel handling such matters. We have accrued for estimated losses in accordance with U.S. GAAP for those matters where we believe that the likelihood that a loss has occurred is probable and the amount of the loss is reasonably estimable. The determination of the amount of such reserves is based on knowledge and experience with regard to past and current matters and consultation with internal personnel principally involved with such matters and with our outside legal counsel handling such matters. The amount of such reserves may change in the future due to new developments or changes in circumstances. The inherent uncertainty related to the outcome of these matters can result in amounts materially different from any provisions made with respect to their resolution. Although we cannot predict the ultimate outcome of any of our proceedings, we believe that they will not have a material adverse impact on our financial condition, results of operations or liquidity.

See note 18 of the Consolidated Financial Statements for a discussion of environmental and other litigation matters.

New Accounting Standards

See note 2 of the Consolidated Financial Statements for a summary of the new accounting standards.

Item 7A. Qualitative and Quantitative Disclosures about Market Risk

Currency

We are exposed to market risks due to changes in currency values, although the majority of our revenues and expenses are denominated in the U.S. dollar. The currency market risks include devaluations and other major currency fluctuations relative to the U.S. dollar, Canadian dollar, Euro, RMB or Mexican peso that could reduce the cost competitiveness of our products compared to foreign competition.

Interest Rates

We are exposed to market risks associated with changes in interest rates on our debt. We had $189.0 million of debt subject to variable interest rates at December 31, 2016. A change of one percentage point in such rates would result in a change in interest expense of approximately $1.9 million on an annual basis.

We have an interest rate swap agreement with respect to $220.0 million of our floating rate Term Loan B debt in order to fix a series of our future interest payments. The interest rate swap matures on January 9, 2020 and maintains a fixed interest rate of 4.85 percent, including the credit spread. At December 31, 2016, the Term Loan B debt held a floating interest rate of 3.75 percent. If the counterparty to the interest rate swap agreement were to fail to perform, the interest rate swap would no longer provide the desired results. However, we do not anticipate nonperformance by the counterparty. The counterparty held a Standard & Poor's rating of A+ as of December 31, 2016.

Natural Gas

We are also exposed to market risks associated with changes in the price of natural gas. We use natural gas swap contracts related to forecasted future natural gas requirements of our manufacturing operations in North America. The objective of these commodity contracts is to limit the fluctuations in prices paid due to price movements in the underlying commodity. We consider the forecasted natural gas requirements of our manufacturing operations in determining the quantity of natural gas to hedge. We combine the forecasts with historical observations to establish the percentage of forecast to be hedged, typically ranging from 40 percent to 70 percent of our anticipated requirements up to six quarters in the future. For our natural gas requirements that are not hedged or have been de-designated, we are subject to changes in the price of natural gas, which affect our earnings. If the counterparties to these natural gas swap contracts were to fail to perform, we would no longer be protected from natural gas fluctuations by the futures contracts. However, we do not anticipate nonperformance by these counterparties. All counterparties were rated BBB+ or better by Standard and Poor’s as of December 31, 2016.

Retirement Plans

We are exposed to market risks associated with changes in the various capital markets. Changes in long-term interest rates affect the discount rate that is used to measure our benefit obligations and related expense. Changes in the equity and debt securities markets affect the performance of our pension plans' asset performance and related pension expense. Sensitivity to these key market risk factors is as follows:

- A change of 1.0 percent in the discount rate would change our annual pretax pension and nonpension postretirement expense by approximately $3.5 million.
- A change of 1.0 percent in the expected long-term rate of return on plan assets would change annual pretax pension expense by approximately $3.2 million.

Item 8. Financial Statements and Supplementary Data

	Page
Reports of Independent Registered Public Accounting Firm	47
Consolidated Balance Sheets at December 31, 2016 and 2015	50
For the years ended December 31, 2016, 2015 and 2014:	
Consolidated Statements of Operations	51
Consolidated Statements of Comprehensive Income (Loss)	52
Consolidated Statements of Shareholders' Equity	53
Consolidated Statements of Cash Flows	54
Notes to Consolidated Financial Statements:	55
Note 1. Description of the Business	55
Note 2. Significant Accounting Policies	55
Note 3. Balance Sheet Details	59
Note 4. Purchased Intangible Assets and Goodwill	59
Note 5. Property, Plant and Equipment	61
Note 6. Borrowings	61
Note 7. Restructuring Charges	64
Note 8. Income Taxes	65
Note 9. Pension	69
Note 10. Nonpension Postretirement Benefits	74
Note 11. Net Income per Share of Common Stock	76
Note 12. Employee Stock Benefit Plans	76
Note 13. Derivatives	81
Note 14. Comprehensive Income (Loss)	85
Note 15. Fair Value	86
Note 16. Operating Leases	86
Note 17. Other Income	87
Note 18. Contingencies	87
Note 19. Segments and Geographic Information	88
Selected Quarterly Financial Data (unaudited)	91

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Libbey Inc.
Toledo, Ohio

We have audited the accompanying consolidated balance sheet of Libbey Inc. and subsidiaries (the "Company") as of December 31, 2016 and 2015, and the related consolidated statements of operations, comprehensive income (loss), shareholders' equity, and cash flows for each of the two years in the period ended December 31, 2016. Our audits also included the financial statement schedule listed in the Index at Item 15. These financial statements and financial statement schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on the financial statements and financial statement schedule based on our audits.

We conducted our audits in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, such consolidated financial statements present fairly, in all material respects, the financial position of Libbey Inc. and subsidiaries as of December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the two years in the period ended December 31, 2016, in conformity with accounting principles generally accepted in the United States of America. Also, in our opinion, such financial statement schedule, when considered in relation to the basic consolidated financial statements taken as a whole, presents fairly, in all material respects, the information set forth therein.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the Company's internal control over financial reporting as of December 31, 2016, based on the criteria established in Internal Control - Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission and our report dated March 3, 2017 expressed an unqualified opinion on the Company's internal control over financial reporting.

/s/ *DELOITTE & TOUCHE LLP*

Detroit, Michigan
March 3, 2017

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Libbey Inc.
Toledo, Ohio

We have audited the internal control over financial reporting of Libbey Inc. and subsidiaries (the "Company") as of December 31, 2016, based on criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission. 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 Report of Management. Our responsibility is to express an opinion on the Company's internal control over financial reporting based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether effective internal control over financial reporting was maintained in all material respects. Our audit included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, 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.

A company's internal control over financial reporting is a process designed by, or under the supervision of, the company's principal executive and principal financial officers, or persons performing similar functions, and effected by the company's board of directors, management, and other personnel 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 the inherent limitations of internal control over financial reporting, including the possibility of collusion or improper management override of controls, material misstatements due to error or fraud may not be prevented or detected on a timely basis. Also, projections of any evaluation of the effectiveness of the internal control over financial reporting to future periods are subject to the risk that the controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

In our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the criteria established in *Internal Control - Integrated Framework (2013)* issued by the Committee of Sponsoring Organizations of the Treadway Commission.

We have also audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated financial statements and financial statement schedule as of and for the year ended December 31, 2016 of the Company and our report dated March 3, 2017 expressed an unqualified opinion on those financial statements and financial statement schedule.

/s/ *DELOITTE & TOUCHE LLP*

Detroit, Michigan
March 3, 2017

Report of Independent Registered Public Accounting Firm

The Board of Directors and Shareholders of Libbey Inc.

We have audited the accompanying consolidated statements of operations, comprehensive income (loss), shareholders' equity, and cash flows of Libbey Inc. for the year ended December 31, 2014. Our audit also included the financial statement schedule listed in the Index at Item 15. These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audit.

We conducted our audit in accordance with the standards of the Public Company Accounting Oversight Board (United States). Those standards require that we plan and perform the audit to obtain reasonable assurance about whether the financial statements are free of material misstatement. An audit includes examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements. An audit also includes assessing the accounting principles used and significant estimates made by management, as well as evaluating the overall financial statement presentation. We believe that our audit provides a reasonable basis for our opinion.

In our opinion, the financial statements referred to above for Libbey Inc. present fairly, in all material respects, the consolidated results of its operations and its cash flows for the year ended December 31, 2014, in conformity with U.S. generally accepted accounting principles. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

/s/ Ernst & Young LLP

Toledo, Ohio
March 13, 2015 except for Note 19, as to which the date is February 29, 2016

Libbey Inc.
Consolidated Balance Sheets

December 31, (dollars in thousands, except share amounts)	2016	2015
ASSETS		
Cash and cash equivalents	$ 61,011	$ 49,044
Accounts receivable — net	85,113	94,379
Inventories — net	170,009	178,027
Prepaid and other current assets	16,777	19,326
Total current assets	332,910	340,776
Pension asset	—	977
Purchased intangible assets — net	15,225	16,364
Goodwill	164,112	164,112
Deferred income taxes	40,016	48,662
Other assets	9,514	9,019
Total other assets	228,867	239,134
Property, plant and equipment — net	256,392	272,534
Total assets	$ 818,169	$ 852,444
LIABILITIES AND SHAREHOLDERS' EQUITY		
Accounts payable	$ 71,582	$ 71,560
Salaries and wages	27,018	27,266
Accrued liabilities	41,807	45,179
Accrued income taxes	1,384	4,009
Pension liability (current portion)	2,461	2,297
Non-pension postretirement benefits (current portion)	4,892	4,903
Derivative liability	1,928	4,265
Long-term debt due within one year	5,009	4,747
Total current liabilities	156,081	164,226
Long-term debt	402,831	426,272
Pension liability	43,934	44,274
Non-pension postretirement benefits	55,373	55,282
Deferred income taxes	1,859	2,822
Other long-term liabilities	12,972	11,186
Total liabilities	673,050	704,062
Contingencies (Note 18)		
Shareholders' equity:		
Common stock, par value $.01 per share, 50,000,000 shares authorized, 21,864,541 shares issued in 2016 (21,843,851 shares issued in 2015)	219	218
Capital in excess of par value	329,722	330,756
Treasury stock	—	(4,448)
Retained deficit	(59,625)	(57,912)
Accumulated other comprehensive loss	(125,197)	(120,232)
Total shareholders' equity	145,119	148,382
Total liabilities and shareholders' equity	$ 818,169	$ 852,444

See accompanying notes

Libbey Inc.
Consolidated Statements of Operations

Year ended December 31, (dollars in thousands, except per share amounts)	2016	2015	2014
Net sales	$ 793,420	$ 822,345	$ 852,492
Freight billed to customers	2,790	2,885	3,400
Total revenues	796,210	825,230	855,892
Cost of sales	629,916	648,902	652,747
Gross profit	166,294	176,328	203,145
Selling, general and administrative expenses	120,984	132,607	121,909
Income from operations	45,310	43,721	81,236
Loss on redemption of debt	—	—	(47,191)
Other income	3,362	2,880	2,351
Earnings before interest and income taxes	48,672	46,601	36,396
Interest expense	20,888	18,484	22,866
Income before income taxes	27,784	28,117	13,530
Provision (benefit) for income taxes	17,711	(38,216)	8,567
Net income	$ 10,073	$ 66,333	$ 4,963
Net income per share:			
Basic	$ 0.46	$ 3.04	$ 0.23
Diluted	$ 0.46	$ 2.99	$ 0.22
Weighted average shares:			
Basic	21,880	21,817	21,716
Diluted	22,049	22,159	22,184
Dividends declared per share	$ 0.46	$ 0.44	$ —

See accompanying notes

Libbey Inc.
Consolidated Statements of Comprehensive Income (Loss)

Year ended December 31, (dollars in thousands)	2016	2015	2014
Net income	$ 10,073	$ 66,333	$ 4,963
Other comprehensive income (loss):			
Pension and other postretirement benefit adjustments, net of tax	(1,395)	33,201	(49,725)
Change in fair value of derivative instruments, net of tax	1,345	(1,235)	(1,846)
Foreign currency translation adjustments, net of tax	(4,915)	(13,751)	(13,716)
Other comprehensive income (loss), net of tax	(4,965)	18,215	(65,287)
Comprehensive income (loss)	$ 5,108	$ 84,548	$ (60,324)

See accompanying notes

Libbey Inc.
Consolidated Statements of Shareholders' Equity

(dollars in thousands, except share amounts)	Common Stock Shares	Treasury Stock Shares	Common Stock Amount	Capital in Excess of Par Value	Treasury Stock Amount	Retained Deficit	Accumulated Other Comprehensive Loss	Total
Balance December 31, 2013	21,316,480	—	$ 213	$ 323,367	$ —	$ (119,611)	$ (73,160)	$ 130,809
Net income						4,963		4,963
Other comprehensive income (loss)							(65,287)	(65,287)
Stock compensation expense				3,932				3,932
Stock issued	527,371		5	4,409				4,414
Stock withheld for employee taxes				(317)				(317)
Purchase of treasury shares		34,985			(1,060)			(1,060)
Balance December 31, 2014	21,843,851	34,985	218	331,391	(1,060)	(114,648)	(138,447)	77,454
Net income						66,333		66,333
Other comprehensive income (loss)							18,215	18,215
Income tax effect from share-based compensation arrangements				2,797				2,797
Stock compensation expense				5,873				5,873
Stock issued from treasury		(336,741)		(8,509)	11,887			3,378
Stock withheld for employee taxes				(796)				(796)
Dividends						(9,597)		(9,597)
Purchase of treasury shares		412,473			(15,275)			(15,275)
Balance December 31, 2015	21,843,851	110,717	218	330,756	(4,448)	(57,912)	(120,232)	148,382
Net income						10,073		10,073
Other comprehensive income (loss)							(4,965)	(4,965)
Income tax effect from share-based compensation arrangements				(534)				(534)
Stock compensation expense				3,724				3,724
Stock issued	20,690	(222,009)	1	(3,329)	6,448	(1,716)		1,404
Stock withheld for employee taxes				(895)				(895)
Dividends						(10,070)		(10,070)
Purchase of treasury shares		111,292			(2,000)			(2,000)
Balance December 31, 2016	21,864,541	—	$ 219	$ 329,722	$ —	$ (59,625)	$ (125,197)	$ 145,119

See accompanying notes

Libbey Inc.
Consolidated Statements of Cash Flows

Year ended December 31, (dollars in thousands)	2016	2015	2014
Operating activities:			
Net income	$ 10,073	$ 66,333	$ 4,963
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	48,486	42,712	40,388
Loss on asset sales and disposals	287	567	674
Change in accounts receivable	8,660	(6,312)	(1,808)
Change in inventories	5,979	(12,006)	(10,828)
Change in accounts payable	(481)	(3,466)	5,088
Accrued interest and amortization of discounts and finance fees	(1,086)	1,291	2,039
Call premium on senior notes	—	—	37,348
Write-off of finance fees on senior notes	—	—	9,086
Pension & non-pension postretirement benefits, net	(2,513)	18,865	(879)
Restructuring	—	—	(289)
Accrued liabilities & prepaid expenses	4,032	4,140	(7,222)
Income taxes	6,296	(45,003)	885
Share-based compensation expense	4,766	5,917	5,283
Excess tax benefit from share-based compensation arrangements	(366)	(2,797)	—
Other operating activities	(1,490)	(4,142)	(2,857)
Net cash provided by operating activities	82,643	66,099	81,871
Investing activities:			
Additions to property, plant and equipment	(34,604)	(48,136)	(54,393)
Proceeds from furnace malfunction insurance recovery	—	—	2,350
Proceeds from asset sales and other	—	7	24
Net cash used in investing activities	(34,604)	(48,129)	(52,019)
Financing activities:			
Borrowings on ABL credit facility	6,000	62,900	83,000
Repayments on ABL credit facility	(6,000)	(62,900)	(83,000)
Other repayments	(350)	(3,267)	(5,863)
Other borrowings	339	—	5,214
Payments on 6.875% senior notes	—	—	(405,000)
Proceeds from Term Loan B	—	—	438,900
Repayments on Term Loan B	(24,400)	(4,400)	(2,200)
Call premium on senior notes	—	—	(37,348)
Stock options exercised	1,400	3,338	4,571
Excess tax benefit from share-based compensation arrangements	366	2,797	—
Debt issuance costs and other	—	—	(6,959)
Dividends	(10,070)	(9,597)	—
Treasury shares purchased	(2,000)	(15,275)	(1,060)
Net cash used in financing activities	(34,715)	(26,404)	(9,745)
Effect of exchange rate fluctuations on cash	(1,357)	(2,566)	(2,271)
Increase (decrease) in cash	11,967	(11,000)	17,836
Cash & cash equivalents at beginning of year	49,044	60,044	42,208
Cash & cash equivalents at end of year	$ 61,011	$ 49,044	$ 60,044
Supplemental disclosure of cash flow information:			
Cash paid during the year for interest, net of capitalized interest	$ 21,553	$ 16,545	$ 20,302
Cash paid during the year for income taxes	$ 7,559	$ 5,516	$ 7,228

See accompanying notes

1. Description of the Business

Libbey is a leading global manufacturer and marketer of glass tableware products. We produce glass tableware in five countries and sell to customers in over 100 countries. We design and market, under our Libbey®, Libbey Signature®, Masters Reserve®, Crisa®, Royal Leerdam®, World® Tableware, Syracuse® China and Crisal Glass® brand names (among others), an extensive line of high-quality glass tableware, ceramic dinnerware, metal flatware, hollowware and serveware items for sale primarily in the foodservice, retail and business-to-business markets. Our sales force presents our tabletop products to the global marketplace in a coordinated fashion. We own and operate two glass tableware manufacturing plants in the United States as well as glass tableware manufacturing plants in Mexico (Libbey Mexico), the Netherlands (Libbey Holland), Portugal (Libbey Portugal) and China (Libbey China). In addition, we import tabletop products from overseas in order to complement our line of manufactured items. The combination of manufacturing and procurement allows us to compete in the global tabletop market by offering an extensive product line at competitive prices.

2. Significant Accounting Policies

Basis of Presentation The Consolidated Financial Statements include Libbey Inc. and its majority-owned subsidiaries (collectively, Libbey or the Company). Our fiscal year end is December 31st. All material intercompany accounts and transactions have been eliminated. The preparation of financial statements and related disclosures in conformity with United States generally accepted accounting principles (U.S. GAAP) requires management to make estimates and assumptions that affect the amounts reported in the Consolidated Financial Statements and accompanying notes. Actual results could differ materially from management's estimates.

Revenue Recognition Revenue is recognized when products are shipped and title and risk of loss have passed to the customer. Revenue is recorded net of returns, discounts and incentives offered to customers. We estimate returns, discounts and incentives at the time of sale based on the terms of the agreements, historical experience and forecasted sales. We continually evaluate the adequacy of these methods used to estimate returns, discounts and incentives. Taxes collected from customers are excluded from revenues and credited directly to obligations to the appropriate governmental agencies.

Cost of Sales Cost of sales includes cost to manufacture and/or purchase products, warehouse, shipping and delivery costs and other costs.

Cash and Cash Equivalents We consider all highly liquid investments purchased with an original or remaining maturity of less than three months at the date of purchase to be cash equivalents. Cash and cash equivalents are maintained with various financial institutions.

Accounts Receivable and Allowance for Doubtful Accounts We record trade receivables when revenue is recorded in accordance with our revenue recognition policy and relieve accounts receivable when payments are received from customers. The allowance for doubtful accounts is established through charges to the provision for bad debts. We regularly evaluate the adequacy of the allowance for doubtful accounts based on historical trends in collections and write-offs, our judgment as to the probability of collecting accounts and our evaluation of business risk. This evaluation is inherently subjective, as it requires estimates that are susceptible to revision as more information becomes available. Accounts are determined to be uncollectible when the debt is deemed to be worthless or only recoverable in part and are written off at that time through a charge against the allowance. Generally, we do not require collateral on our accounts receivable.

Inventory Valuation Inventories are valued at the lower of cost or market. The last-in, first-out (LIFO) method is used for our U.S. glass inventories, which represented 29.1 percent and 32.0 percent of our total inventories in 2016 and 2015, respectively. The remaining inventories are valued using either the first-in, first-out (FIFO) or average cost method. For those inventories valued on the LIFO method, the excess of FIFO cost over LIFO, was $12.9 million and $12.3 million in 2016 and 2015, respectively. Cost includes the cost of materials, direct labor, in-bound freight and the applicable share of manufacturing overhead.

Purchased Intangible Assets and Goodwill Financial Accounting Standards Board Accounting Standards Codification™ ("FASB ASC") Topic 350 - "Intangibles-Goodwill and other" ("FASB ASC 350") requires goodwill and purchased indefinite life intangible assets to be reviewed for impairment annually, or more frequently if impairment indicators arise. Intangible assets with lives restricted by contractual, legal or other means will continue to be amortized over their useful lives. As of

October 1st of each year, we update our separate impairment evaluations for both goodwill and indefinite life intangible assets. For further disclosure on goodwill and intangibles, see note 4.

Software We account for software in accordance with FASB ASC 350. Software represents the costs of internally developed and purchased software packages for internal use. Capitalized costs include software packages, installation and/or internal labor costs. These costs generally are amortized over a five-year period.

Property, Plant and Equipment Property, plant and equipment are stated at cost less accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives of the assets, generally 3 to 14 years for equipment and furnishings and 10 to 40 years for buildings and improvements. Maintenance and repairs are expensed as incurred.

Long-lived assets to be held and used are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of such assets may not be recoverable. Measurement of an impairment loss for long-lived assets that we expect to hold and use is based on the fair value of the asset. Long-lived assets to be disposed of are reported at the lower of carrying amount or fair value less costs to sell. See note 5 for further disclosure.

Self-Insurance Reserves Self-insurance reserves reflect the estimated liability for group health and workers' compensation claims not covered by third-party insurance. We accrue estimated losses based on actuarial models and assumptions as well as our historical loss experience. Workers' compensation accruals are recorded at the estimated ultimate payout amounts based on individual case estimates. In addition, we record estimates of incurred-but-not-reported losses based on actuarial models.

Pension and Nonpension Postretirement Benefits We account for pension and nonpension postretirement benefits in accordance with FASB ASC Topic 715 - "Compensation-Retirement Benefits" ("FASB ASC 715"). FASB ASC 715 requires recognition of the over-funded or under-funded status of pension and other postretirement benefit plans on the balance sheet. Under FASB ASC 715, gains and losses, prior service costs and credits and any remaining prior transaction amounts that have not yet been recognized through net periodic benefit cost are recognized in accumulated other comprehensive loss, net of tax effect where appropriate.

The U.S. pension plans cover most hourly U.S.-based employees (excluding new hires at Shreveport after December 15, 2008 and at Toledo after September 30, 2010) and those salaried U.S.-based employees hired before January 1, 2006. Effective January 1, 2013, we ceased annual company contribution credits to the cash balance accounts in our Libbey U.S. Salaried Pension Plan and SERP. The non-U.S. pension plans cover the employees of our wholly-owned subsidiaries in Mexico and the Netherlands (until December 2015). In December 2015, we unwound direct ownership of our defined benefit pension plan in the Netherlands. For further discussion see note 9.

We also provide certain postretirement health care and life insurance benefits covering substantially all U.S. and Canadian salaried employees hired before January 1, 2004 and a majority of our union hourly employees (excluding employees hired at Shreveport after December 15, 2008 and at Toledo after September 30, 2010). Employees are generally eligible for benefits upon reaching a certain age and completion of a specified number of years of creditable service. Benefits for most hourly retirees are determined by collective bargaining. Under a cross-indemnity agreement, Owens-Illinois, Inc. assumed liability for the nonpension postretirement benefit of our retirees who had retired as of June 24, 1993. Therefore, the benefits related to these retirees are not included in our liability. For further discussion see note 10.

Income Taxes Income taxes are accounted for under the asset and liability method. Deferred income tax assets and liabilities are recognized for estimated future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and tax attribute carry-forwards. Deferred income tax assets and liabilities are measured using enacted tax rates in effect for the year in which those temporary differences are expected to be recovered or settled. FASB ASC Topic 740, “Income Taxes,” requires that a valuation allowance be recorded when it is more likely than not that some portion or all of the deferred income tax assets will not be realized. Deferred income tax assets and liabilities are determined separately for each tax paying component in which we conduct our operations or otherwise incur taxable income or losses. For further discussion see note 8.

Derivatives We account for derivatives in accordance with FASB ASC Topic 815 "Derivatives and Hedging" ("FASB ASC 815"). We hold derivative financial instruments to hedge certain of our interest rate risks associated with long-term debt, commodity price risks associated with forecasted future natural gas requirements and foreign exchange rate risks associated with occasional transactions denominated in a currency other than the U.S. dollar. These derivatives (except for the foreign currency contracts and natural gas hedges in Mexico) qualify for hedge accounting since the hedges are highly effective, and we have designated and documented contemporaneously the hedging relationships involving these derivative instruments.

While we intend to continue to meet the conditions for hedge accounting, if hedges do not qualify as highly effective or if we do not believe that forecasted transactions would occur, the changes in the fair value of the derivatives used as hedges would be reflected in earnings. Cash flows from hedges of debt, short-term forward exchange contracts, currency swaps, interest rate swaps, and natural gas contracts are classified as operating activities. See additional discussion at note 13.

Environmental In accordance with U.S. GAAP accounting standards, we recognize environmental clean-up liabilities on an undiscounted basis when loss is probable and can be reasonably estimated. The cost of the clean-up is estimated by financial and legal specialists based on current law. Such estimates are based primarily upon the estimated cost of investigation and remediation required, and the likelihood that, where applicable, other potentially responsible parties will not be able to fulfill their commitments at the sites where the Company may be jointly and severally liable.

Foreign Currency Translation Assets and liabilities of non-U.S. subsidiaries that operate in a local currency environment, where that local currency is the functional currency, are translated to U.S. dollars at exchange rates in effect at the balance sheet date, with the resulting translation adjustments directly recorded to a separate component of accumulated other comprehensive loss. Income and expense accounts are translated at average exchange rates during the year. The effect of exchange rate changes on transactions denominated in currencies other than the functional currency is recorded in other income. For further detail see note 17.

Stock-Based Compensation Expense We account for stock-based compensation expense in accordance with FASB ASC Topic 718, “Compensation — Stock Compensation,” ("FASB ASC 718") and FASB ASC Topic 505-50, “Equity-Based Payments to Non-Employees”("FASB ASC 505-50"). Stock-based compensation cost is measured based on the fair value of the equity instruments issued. FASB ASC 718 and 505-50 apply to all of our outstanding unvested stock-based payment awards.

Treasury Stock Treasury Stock purchases are recorded at cost. During 2016, 2015 and 2014, we purchased 111,292, 412,473 and 34,985 shares of treasury stock at an average price of $17.97, $37.03 and $30.30, respectively. At December 31, 2016, we had 941,250 shares of common stock available for repurchase, as authorized by our Board of Directors.

Research and Development Research and development costs are charged to selling, general and administrative expense in the Consolidated Statements of Operations when incurred. Expenses for 2016, 2015 and 2014, respectively, were $4.3 million, $6.1 million and $6.2 million.

Advertising Costs We expense all advertising costs as incurred. The expenses for 2016, 2015 and 2014, respectively, were $5.7 million, $10.7 million and $4.1 million.

Computation of Income Per Share of Common Stock Basic net income per share of common stock is computed using the weighted average number of shares of common stock outstanding during the period. Diluted net income per share of common stock is computed using the weighted average number of shares of common stock outstanding and dilutive potential common share equivalents during the period.

Reclassifications Certain amounts in prior years' financial statements have been reclassified to conform to the presentation used in the year ended December 31, 2016, including the reclassification of pension assets in the fair value hierarchy table in accordance with adopting ASU 2015-07 at December 31, 2016. See below and note 9.

New Accounting Standards

In May 2014, the FASB issued Accounting Standards Update No. 2014-09, "Revenue From Contracts With Customers", as amended by ASU's 2015-14, 2016-08, 2016-10, 2016-11, 2016-12 and 2016-20, (ASU 2014-09), which outlines a single comprehensive model for entities to use in accounting for revenue arising from contracts with customers and supersedes most current revenue recognition guidance, including industry-specific guidance. ASU 2014-09 is based on the principle that an entity should recognize revenue to depict the transfer of goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. ASU 2014-09 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 fulfill a contract. Entities have the option of using either a full retrospective or a modified retrospective approach for the adoption of the new standard. This update is effective for interim and annual reporting periods beginning after December 15, 2017. We plan to adopt this standard in the first quarter of 2018 using the modified retrospective method, whereby the cumulative effect of applying the standard is recognized at the date of initial application. We have substantially completed our evaluation of significant contracts and the review of our current accounting policies and practices to identify potential differences that would result from applying the requirements of ASU 2014-09 to our revenue contracts. In addition, we have identified, and are in the

process of implementing, appropriate changes to business processes, systems and controls to support recognition and disclosure under the new standard. We do not expect the adoption of ASU 2014-09 to have a material impact on the amount and timing of revenue recognized in our Consolidated Financial Statements.

In August 2014, the FASB issued Accounting Standards Update No. 2014-15, "Presentation of Financial Statements-Going Concern" (ASU 2014-15), which establishes management's responsibility, in connection with preparing financial statements for each annual and interim reporting period, to evaluate whether there is substantial doubt about an entity's ability to continue as a going concern. ASU 2014-15 also provides guidance to determine whether to disclose information about relevant conditions and events when there is substantial doubt about an entity's ability to continue as a going concern. This update is effective for the annual reporting period ending after December 15, 2016, and for interim and annual periods thereafter. Early application was permitted. We adopted ASU 2014-15 as of December 31, 2016, and it had no impact on our balance sheet, results of operations, cash flows or disclosures at December 31, 2016.

In May 2015, the FASB issued Accounting Standards Update 2015-07, "Disclosures for Investments in Certain Entities that Calculate Net Asset Value Per Share (or its Equivalent)" (ASU 2015-07), which removes the requirement to categorize within the fair value hierarchy investments for which fair values are estimated using the net asset value (NAV) practical expedient provided by FASB ASC Topic 820, Fair Value Measurement. Disclosures about investments in certain entities that calculate NAV per share are limited under ASU 2015-07 to those investments for which the entity has elected to estimate the fair value using the NAV practical expedient. ASU 2015-07 is effective for entities for fiscal years beginning after December 15, 2015 and interim periods within, with retrospective application to all periods presented. Early application was permitted. We adopted ASU 2015-07 as of January 1, 2016. The guidance impacted the presentation of our pension assets that use NAV as a practical expedient (see note 9, Pension).

In February 2016, the FASB issued Accounting Standards Update No. 2016-02, "Leases (Topic 842)" (ASU 2016-02), which requires a lessee to recognize assets and liabilities for leases with lease terms of more than 12 months on the balance sheet. Leases will be classified as either finance or operating leases, with classification affecting the pattern of expense recognition in the income statement. The new guidance also clarifies the definition of a lease and disclosure requirements. ASU 2016-02 is effective for fiscal years beginning after December 15, 2018, with early application permitted. Lessees and lessors must apply a modified retrospective transition approach for leases existing at, or entered into after, the beginning of the earliest comparative period presented in the financial statements. The modified retrospective approach does not require any transition accounting for leases that expired before the earliest comparative period presented. We are currently evaluating the impact of this standard and anticipate the new guidance will significantly impact our Consolidated Financial Statements as we have a significant number of leases. See note 16, Operating Leases, for our minimum lease commitments under non-cancellable operating leases.

In March 2016, the FASB issued Accounting Standards Update No. 2016-09, "Compensation - Stock Compensation (Topic 718): Improvements to Employee Share-Based Payment Accounting" (ASU 2016-09). Areas for simplification in this update involve several aspects of accounting for share-based payment transactions, including the income tax consequences, classification of awards as either equity or liabilities, and classification on the statement of cash flows. ASU 2016-09 is effective for interim and annual reporting periods beginning after December 15, 2016, with early application permitted. When we adopt this in the first quarter of 2017, there will be an adjustment to retained earnings as of January 1, 2017, an immaterial impact to the Consolidated Statements of Operations, and a reclass between operating and financing activities on the previously reported Consolidated Statements of Cash Flows that will increase cash provided by operating activities and decrease cash used in financing activities.

In June 2016, the FASB issued Accounting Standards Update No. 2016-13. "Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments" (ASU 2016-13). This standard introduces a new approach to estimating credit losses on certain types of financial instruments, including trade receivables, and modifies the impairment model for available-for-sale debt securities. ASU 2016-13 is effective for fiscal years beginning after December 15, 2019, including interim period within those fiscal years, with early application permitted. We are currently assessing the impact that this standard will have on our Consolidated Financial Statements.

In August 2016, the FASB issued Accounting Standards Update No. 2016-15, "Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments" (ASU 2016-15). ASU 2016-15 addresses how certain cash receipts and cash payments are presented and classified in the Statement of Cash Flows. ASU 2016-15 is effective for interim and annual periods beginning after December 15, 2017, with early adoption permitted. We are currently assessing the impact that this standard will have on our Consolidated Financial Statements.

In October 2016, the FASB issued Accounting Standards Update No. 2016-16, "Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory" (ASU 2016-16). ASU 2016-16 clarifies that an entity should recognize the income

tax consequences of an intra-entity transfer of an asset other than inventory when the transfer occurs. ASU 2016-16 is effective for annual and interim reporting periods beginning after December 15, 2017, with early adoption permitted. We are currently assessing the impact that this standard will have on our Consolidated Financial Statements.

In January 2017, the FASB issued Accounting Standards Update No. 2017-04, "Intangibles - Goodwill and Other (Topic 350): Simplifying the Test for Goodwill Impairment" (ASU 2017-04). ASU 2017-04 simplifies the goodwill impairment testing by eliminating Step 2 from the goodwill impairment testing required, should an impairment be discovered during its annual or interim assessment. ASU 2017-04 is effective for annual or interim impairment tests beginning after December 15, 2019, with early adoption permitted. We plan to adopt this standard for our annual, and any interim, goodwill impairment testing to be performed after January 1, 2017.

3. Balance Sheet Details

The following table provides detail of selected balance sheet items:

December 31, (dollars in thousands)	2016	2015
Accounts receivable:		
Trade receivables	$ 82,851	$ 91,324
Other receivables	2,262	3,055
Total accounts receivable, less allowances of $7,832 and $7,066	$ 85,113	$ 94,379
Inventories:		
Finished goods	$ 152,261	$ 159,998
Work in process	1,625	1,183
Raw materials	4,432	4,944
Repair parts	10,558	10,763
Operating supplies	1,133	1,139
Total inventories, less loss provisions of $9,484 and $5,313	$ 170,009	$ 178,027
Accrued liabilities:		
Accrued incentives	$ 19,771	$ 21,450
Other accrued liabilities	22,036	23,729
Total accrued liabilities	$ 41,807	$ 45,179

The increase in inventory loss provisions at December 31, 2016 is due to our second quarter 2016 initiative to optimize our product portfolio to reduce inventory and simplify and improve our operations.

4. Purchased Intangible Assets and Goodwill

Purchased Intangibles

Changes in purchased intangibles balances are as follows:

(dollars in thousands)	2016	2015
Beginning balance	$ 16,364	$ 17,771
Amortization	(1,039)	(1,039)
Foreign currency impact	(100)	(368)
Ending balance	$ 15,225	$ 16,364

Purchased intangible assets are composed of the following:

December 31, (dollars in thousands)	2016	2015
Indefinite life intangible assets	$ 11,888	$ 11,949
Definite life intangible assets, net of accumulated amortization of $17,706 and $16,758	3,337	4,415
Total	$ 15,225	$ 16,364

Amortization expense for definite life intangible assets was $1.0 million, $1.0 million and $1.1 million for years 2016, 2015 and 2014, respectively.

Indefinite life intangible assets are composed of trade names and trademarks that have an indefinite life and are therefore individually tested for impairment on an annual basis, or more frequently in certain circumstances where impairment indicators arise, in accordance with FASB ASC 350. Our measurement date for impairment testing is October 1st of each year. When performing our test for impairment of individual indefinite life intangible assets, we use a relief from royalty method to determine the fair market value that is compared to the carrying value of the indefinite life intangible asset. The inputs used for this analysis are considered Level 3 inputs in the fair value hierarchy. See note 15 for further discussion of the fair value hierarchy. Our October 1st review for 2016 and 2015 did not indicate impairment of our indefinite life intangible assets.

The remaining definite life intangible assets at December 31, 2016 consist of customer relationships that are amortized over a period ranging from 13 to 20 years. The weighted average remaining life on the definite life intangible assets is 3.3 years at December 31, 2016.

Future estimated amortization expense of definite life intangible assets is as follows (dollars in thousands):

2017	2018	2019	2020	2021
$1,031	$1,031	$551	$145	$145

Goodwill

Changes in goodwill balances are as follows:

	2016				2015			
(dollars in thousands)	U.S. & Canada	Latin America	EMEA	Total	U.S. & Canada	Latin America	EMEA	Total
Beginning balance:								
Goodwill	$ 43,872	$ 125,681	$ 9,434	$ 178,987	$ 43,872	$ 125,681	$ 9,434	$ 178,987
Accumulated impairment losses	(5,441)	—	(9,434)	(14,875)	(5,441)	—	(9,434)	(14,875)
Net beginning balance	38,431	125,681	—	164,112	38,431	125,681	—	164,112
Other	—	—	—	—	—	—	—	—
Ending balance:								
Goodwill	43,872	125,681	9,434	178,987	43,872	125,681	9,434	178,987
Accumulated impairment losses	(5,441)	—	(9,434)	(14,875)	(5,441)	—	(9,434)	(14,875)
Net ending balance	$ 38,431	$ 125,681	$ —	$ 164,112	$ 38,431	$ 125,681	$ —	$ 164,112

Goodwill impairment tests are completed for each reporting unit on an annual basis, or more frequently in certain circumstances where impairment indicators arise. The inputs used for this analysis are considered Level 2 and Level 3 inputs in the fair value hierarchy. See note 15 for further discussion of the fair value hierarchy.

When performing our test for impairment, we measure each reporting unit's fair value using a blended analysis of the present value of future discounted cash flows and the market valuation approach. The discounted cash flow model calculates the fair value of the reporting unit based on a discounted cash flow analysis, incorporating the weighted average cost of capital of a hypothetical third party buyer. Significant estimates in the discounted cash flows model include the following: discount rate, expected financial outlook and profitability of the reporting unit's business, and foreign currency impacts (all Level 3 inputs).

The market valuation approach calculates the fair value of the reporting unit based on a comparison of the reporting unit to comparable publicly traded companies. Significant estimates in the market valuation approach model include identifying similar companies with comparable business factors such as size, growth, profitability, risk and return on investment and assessing comparable multiples in estimating the fair value of the reporting unit (Level 2 inputs).

The fair value is then compared to the carrying value. To the extent that fair value exceeds the carrying value, no impairment exists. However, to the extent the carrying value exceeds the fair value, we compare the implied fair value of goodwill to its book value to determine if an impairment should be recorded. Our annual review was performed as of October 1st for each year presented, and our review for 2016 and 2015 did not indicate an impairment of goodwill. Subsequently, events occurred, including a further decline in the value of the peso and a shift in the geopolitical environment, which were indicators of potential impairment at December 31, 2016. Therefore, we conducted an additional review as of December 31, 2016 which did not indicate an impairment to goodwill.

5. Property, Plant and Equipment

Property, plant and equipment consists of the following:

December 31, (dollars in thousands)	2016	2015
Land	$ 19,524	$ 19,871
Buildings	102,666	102,236
Machinery and equipment	473,004	470,862
Furniture and fixtures	14,208	14,313
Software	22,733	23,630
Construction in progress	16,113	9,137
Gross property, plant and equipment	648,248	640,049
Less accumulated depreciation	391,856	367,515
Net property, plant and equipment	$ 256,392	$ 272,534

Property, plant and equipment are stated at cost less accumulated depreciation. Depreciation is computed using the straight-line method over the estimated useful lives of the assets, generally 3 to 14 years for equipment and furnishings and 10 to 40 years for buildings and improvements. Software consists of internally developed and purchased software packages for internal use. Capitalized costs include software packages, installation, and/or certain internal labor costs. These costs are generally amortized over a five-year period. Depreciation expense was $47.3 million, $41.4 million and $39.1 million for the years 2016, 2015 and 2014, respectively.

6. Borrowings

Borrowings consist of the following:

December 31, (dollars in thousands)	Interest Rate	Maturity Date	2016	2015
Borrowings under ABL Facility	floating	April 9, 2019	$ —	$ —
Term Loan B	floating (1)	April 9, 2021	409,000	433,400
AICEP Loan	0.00%	January, 2017 to July 30, 2018	3,320	3,451
Total borrowings			412,320	436,851
Less — unamortized discount and finance fees			4,480	5,832
Total borrowings — net			407,840	431,019
Less — long term debt due within one year			5,009	4,747
Total long-term portion of borrowings — net			$ 402,831	$ 426,272

(1) - See interest rate swap under "Term Loan B" below and note 13.

Annual maturities for all of our total borrowings for the next five years and beyond are as follows:

2017	2018	2019	2020	2021	Thereafter
$5,009	$7,111	$4,400	$4,400	$391,400	$—

Amended and Restated ABL Credit Agreement

Libbey Glass and Libbey Europe entered into an Amended and Restated Credit Agreement, dated as of February 8, 2010 and amended as of April 29, 2011, May 18, 2012 and April 9, 2014 (as amended, the ABL Facility), with a group of four financial institutions. The ABL Facility provides for borrowings of up to $100.0 million, subject to certain borrowing base limitations, reserves and outstanding letters of credit.

All borrowings under the ABL Facility are secured by:

- a first-priority security interest in substantially all of the existing and future personal property of Libbey Glass and its domestic subsidiaries (ABL Priority Collateral);
- a first-priority security interest in:
    - 100 percent of the stock of Libbey Glass and 100 percent of the stock of substantially all of Libbey Glass's present and future direct and indirect domestic subsidiaries;
    - 100 percent of the non-voting stock of substantially all of Libbey Glass's first-tier present and future foreign subsidiaries; and
    - 65 percent of the voting stock of substantially all of Libbey Glass's first-tier present and future foreign subsidiaries
- a first-priority security interest in substantially all proceeds and products of the property and assets described above; and
- a second-priority security interest in substantially all of the owned real property, equipment and fixtures in the United States of Libbey Glass and its domestic subsidiaries, subject to certain exceptions and permitted liens (Term Priority Collateral).

Additionally, borrowings by Libbey Europe under the ABL Facility are secured by:

- a first-priority lien on substantially all of the existing and future real and personal property of Libbey Europe and its Dutch subsidiaries; and
- a first-priority security interest in:
    - 100 percent of the stock of Libbey Europe and 100 percent of the stock of substantially all of the Dutch subsidiaries; and
    - 100 percent (or a lesser percentage in certain circumstances) of the outstanding stock issued by the first-tier foreign subsidiaries of Libbey Europe and its Dutch subsidiaries.

Swingline borrowings are limited to $15.0 million, with swingline borrowings for Libbey Europe being limited to the U.S. equivalent of $7.5 million. Loans comprising each CBFR (CB Floating Rate) Borrowing, including each Swingline Loan, bear interest at the CB Floating Rate plus the Applicable Rate, and euro-denominated swingline borrowings (Eurocurrency Loans) bear interest calculated at the Netherlands swingline rate, as defined in the ABL Facility. The Applicable Rates for CBFR Loans and Eurocurrency Loans vary depending on our aggregate remaining availability. The Applicable Rates for CBFR Loans and Eurocurrency Loans were 0.50 percent and 1.50 percent, respectively, at December 31, 2016. Libbey pays a quarterly Commitment Fee, as defined by the ABL Facility, on the total credit provided under the ABL Facility. The Commitment Fee was 0.25 percent at December 31, 2016. No compensating balances are required by the ABL Facility. The ABL Facility does not require compliance with a fixed charge coverage ratio covenant, unless aggregate unused availability falls below $10.0 million. If our aggregate unused ABL availability were to fall below $10.0 million, the fixed charge coverage ratio requirement would be 1:00 to 1:00. Libbey Glass and Libbey Europe have the option to increase the ABL Facility by $25.0 million. There were no Libbey Glass or Libbey Europe borrowings under the facility at December 31, 2016 or at December 31, 2015. Interest is payable on the last day of the interest period, which can range from one month to six months depending on the maturity of each individual borrowing on the ABL facility.

The borrowing base under the ABL Facility is determined by a monthly analysis of the eligible accounts receivable and inventory. The borrowing base is the sum of (a) 85 percent of eligible accounts receivable and (b) the lesser of (i) 85 percent of the net orderly liquidation value (NOLV) of eligible inventory, (ii) 65 percent of eligible inventory, or (iii) $75.0 million.

At December 31, 2016, the available total borrowing base is offset only by a $0.5 million rent reserve. The ABL Facility also provides for the issuance of up to $30.0 million of letters of credit which, when outstanding, are applied against the

$100.0 million limit. At December 31, 2016, $7.0 million in letters of credit were outstanding. Remaining unused availability under the ABL Facility was $88.4 million at December 31, 2016, compared to $91.0 million under the ABL Facility at December 31, 2015.

Term Loan B

On April 9, 2014, Libbey Glass consummated its $440.0 million Senior Secured Term Loan B of Libbey Glass due 2021 (Term Loan B). The net proceeds of the Term Loan B were $438.9 million, after the 0.25 percent original issue discount of $1.1 million. The Term Loan B had related fees of approximately $6.7 million that will be amortized to interest expense over the life of the loan.

The Term Loan B is evidenced by a Senior Secured Credit Agreement, dated April 9, 2014 (Credit Agreement), between Libbey Glass, the Company, the domestic subsidiaries of Libbey Glass listed as guarantors therein (Subsidiary Guarantors and together with the Company, Guarantors), and the lenders. Under the terms of the Credit Agreement, aggregate principal of $1.1 million is due on the last business day of each quarter. The Term Loan B bears interest at the rate of LIBOR plus 3.0 percent, subject to a LIBOR "floor" of 0.75 percent. The interest rate was 3.75 percent per year at December 31, 2016 and 2015, and will mature on April 9, 2021. Although the Credit Agreement does not contain financial covenants, the Credit Agreement contains other covenants that restrict the ability of Libbey Glass and the Guarantors to, among other things:

- incur, assume or guarantee additional indebtedness;
- pay dividends, make certain investments or other restricted payments;
- create liens;
- enter into affiliate transactions;
- merge or consolidate, or otherwise dispose of all or substantially all the assets of Libbey Glass and the Guarantors; and
- transfer or sell assets.

We may voluntarily prepay, in whole or in part, the Term Loan B without premium or penalty but with accrued interest. Beginning with the year-ended December 31, 2015, the Credit Agreement requires us to make an annual mandatory prepayment offer to lenders of 0.0 to 50.0 percent of our excess cash flow, depending on our excess cash flow and leverage ratios as defined in the Credit Agreement. The calculation is made at the end of each year and the mandatory prepayment offer to lenders is made no later than ten business days after the filing of our annual compliance certificate to the lenders. The amount of any required mandatory prepayment offer is reduced by the amounts of any optional prepayments we made during the applicable year or prior to the prepayment offer in the year the offer is required to be made.

The Credit Agreement provides for customary events of default. In the case of an event of default as defined in the Credit Agreement, all of the outstanding Term Loan B will become due and payable immediately without further action or notice. The Term Loan B and the related guarantees under the Credit Agreement are secured by (i) first priority liens on the Term Priority Collateral and (ii) second priority liens on the ABL Collateral.

On April 1, 2015, we executed an interest rate swap on our Term Loan B as part of our risk management strategy to mitigate the risks involved with fluctuating interest rates. The interest rate swap effectively converts $220.0 million of our Term Loan B debt from a variable interest rate to a 4.85 percent fixed interest rate, thus reducing the impact of interest rate changes on future income. The fixed rate swap is effective January 2016 through January 2020. The interest rate swap is designated as a cash flow hedge and is accounted for under FASB ASC 815 "Derivatives and Hedging". See note 13 for further discussion on the interest rate swap.

Senior Secured Notes

The 6.875 percent Senior Secured Notes were issued at par and had related fees of approximately $13.2 million. These fees were amortized to interest expense over the life of the notes until the notes were refinanced in 2014. The Senior Secured Notes were issued pursuant to an Indenture, dated May 18, 2012 (Notes Indenture), between Libbey Glass, the Company, the domestic subsidiaries of Libbey Glass listed as guarantors therein (Subsidiary Guarantors and together with the Company, Guarantors), and The Bank of New York Mellon Trust Company, N.A., as trustee (Notes Trustee) and collateral agent.

In the second quarter of 2014, we completed the refinancing of all Libbey Glass's then outstanding $405.0 million in aggregate principal amount Senior Secured Notes ($360.0 million on April 9, 2014 and $45.0 million on May 9, 2014). These transactions included charges of $37.3 million for an early call premium and $9.1 million for the write off of the remaining financing fees from the Senior Secured Notes. These charges were considered in the computation of the loss on redemption of debt in the year-ended December 31, 2014.

We had an interest rate agreement in place through May 9, 2014 with respect to $45.0 million of our Senior Secured Notes as a means to manage our fixed to variable interest rate ratio. The interest rate agreement effectively converted this portion of our long-term borrowings from fixed rate debt to variable rate debt. The variable interest rate for our borrowings related to the agreement at May 9, 2014, excluding applicable fees, was 5.5 percent. We settled the swap at fair value, resulting in a payment of $1.1 million on May 13, 2014. Upon the redemption of the Senior Secured Notes, the unamortized balance of $0.8 million of the carrying value adjustment on debt related to the interest rate agreement was recognized as expense in loss on redemption of debt on the Consolidated Statements of Operations. See note 13 for further discussion and the net impact recorded on the Consolidated Statements of Operations.

AICEP Loan

From time to time since July 2012, Libbey Portugal has entered into loan agreements with Agencia para Investmento Comercio Externo de Portugal, EPE (AICEP), the Portuguese Agency for investment and external trade. The amount of the loans outstanding is €3.2 million (approximately $3.3 million) at December 31, 2016, and the interest rate is 0.0 percent. Semi-annual installments of principal are due through the maturity date in July 2018.

RMB Working Capital Loan

On September 2, 2013, Libbey China entered into a RMB 31.5 million (approximately $5.2 million) working capital loan with China Construction Bank (CCB) to cover seasonal working capital needs. The 364-day loan was set to mature on September 1, 2014, and had a variable interest rate as announced by the People's Bank of China. On July 14, 2014, Libbey China prepaid the working capital loan along with accrued and unpaid interest. The loan held an annual interest rate of 6.3 percent at the repayment date. This obligation was secured by a mortgage lien on the Libbey China facility.

On July 24, 2014, Libbey China entered into a RMB 20.0 million (approximately $3.3 million) working capital loan with CCB to cover seasonal working capital needs. The working capital loan was set to mature on July 23, 2015, and had a fixed interest rate of 6.78 percent, which was paid monthly. On March 4, 2015, Libbey China prepaid the working capital loan along with accrued and unpaid interest. This obligation was secured by a mortgage lien on the Libbey China facility.

Promissory Note

In September 2001, we issued a $2.7 million promissory note at an interest rate of 6.0 percent in connection with the purchase of our Laredo, Texas warehouse facility. On December 10, 2014, we paid in full the remaining principal and unpaid interest due on the note, totaling $0.4 million. Principal and interest with respect to the promissory note were paid monthly.

Notes Payable

We have an overdraft line of credit for a maximum of €0.8 million. At December 31, 2016 and 2015, there were no borrowings under the facility, which had an interest rate of 5.80 percent. Interest with respect to the note is paid monthly.

7. Restructuring Charges

Capacity Realignment

In February 2013, we announced plans to discontinue production of certain glassware in North America and reduce manufacturing capacity at our Shreveport, Louisiana, manufacturing facility. As a result, on May 30, 2013, we ceased production of certain glassware in North America, discontinued the use of a furnace at our Shreveport, Louisiana, manufacturing plant and began relocating a portion of the production from the idled furnace to our Toledo, Ohio, and Monterrey, Mexico, locations. These activities were all within the U.S. and Canada and Latin America segments and were completed by March 31, 2014. In connection with this plan, we incurred pretax charges of $7.5 million for employee termination costs, fixed asset impairment charges, depreciation expense and other restructuring expenses. Employee termination costs included severance, medical benefits and outplacement services for the terminated employees. The fixed asset impairment charges were to adjust certain machinery and equipment to the estimated fair market value. For the year end December 31, 2014, we recorded a pretax charge of $1.0 million in cost of sales related to other restructuring expenses in the Latin America segment.

8. Income Taxes

The provisions for income taxes were calculated based on the following components of income (loss) before income taxes:

Year ended December 31, (dollars in thousands)	2016	2015	2014
United States	$ 29,742	$ 27,146	$ (15,488)
Non-U.S.	(1,958)	971	29,018
Total income before income taxes	$ 27,784	$ 28,117	$ 13,530

The current and deferred provisions (benefit) for income taxes were:

Year ended December 31, (dollars in thousands)	2016	2015	2014
Current:			
U.S. federal	$ 470	$ 300	$ 59
Non-U.S.	7,625	9,142	10,180
U.S. state and local	201	162	157
Total current income tax provision (benefit)	8,296	9,604	10,396
Deferred:			
U.S. federal	9,981	(44,068)	227
Non-U.S.	334	(3,078)	(2,066)
U.S. state and local	(900)	(674)	10
Total deferred income tax provision (benefit)	9,415	(47,820)	(1,829)
Total:			
U.S. federal	10,451	(43,768)	286
Non-U.S.	7,959	6,064	8,114
U.S. state and local	(699)	(512)	167
Total income tax provision (benefit)	$ 17,711	$ (38,216)	$ 8,567

Deferred income tax assets and liabilities result from temporary differences between the carrying amounts of assets and liabilities for financial reporting purposes and the amounts used for income tax purposes and from income tax carryovers and credits. The significant components of our deferred income tax assets and liabilities are as follows:

December 31, (dollars in thousands)	2016	2015
Deferred income tax assets:		
Pension	$ 11,799	$ 9,644
Non-pension postretirement benefits	22,810	21,751
Other accrued liabilities	19,244	20,432
Receivables	2,756	2,341
Net operating loss and charitable contribution carry forwards	16,861	25,754
Tax credits	11,502	10,245
Total deferred income tax assets	84,972	90,167
Deferred income tax liabilities:		
Property, plant and equipment	23,921	22,882
Inventories	3,866	2,378
Intangibles and other	5,255	7,883
Total deferred income tax liabilities	33,042	33,143
Net deferred income tax asset before valuation allowance	51,930	57,024
Valuation allowance	(13,773)	(11,184)
Net deferred income tax asset (liability)	$ 38,157	$ 45,840

The net deferred income tax assets and liabilities at December 31 of the respective year-ends were included in the Consolidated Balance Sheets as follows:

December 31, (dollars in thousands)	2016	2015
Non-current deferred income tax asset	40,016	48,662
Non-current deferred income tax liability	(1,859)	(2,822)
Net deferred income tax asset (liability)	$ 38,157	$ 45,840

The 2016 deferred income tax asset for net operating loss carry forwards of $16.8 million relates to cumulative pretax losses incurred in the Netherlands of $24.8 million, in Portugal of $0.6 million, in China of $0.9 million, and in the U.S. of $23.0 million for federal and $58.6 million for state and local jurisdictions. Our foreign net operating loss carry forwards of $26.3 million will expire between 2017 and 2027. Our U.S. federal net operating loss carry forward of $23.0 million will expire between 2031 and 2034. This $23.0 million is lower than the actual amount reported on our U.S. federal income tax return by $6.6 million. The difference is attributable to tax deductions in excess of financial statement expenses for stock based compensation. Effective January 1, 2017, Libbey will implement ASU 2016-09 resulting in this amount being recorded as an increase to additional paid in capital and an increase to our U.S. federal net operating loss carry forward. The U.S. state and local net operating loss carry forward of $58.6 million will expire between 2017 and 2034. The 2015 deferred income tax asset for net operating loss carry forwards of $25.5 million related to pretax losses incurred in the Netherlands of $16.9 million, in Portugal of $1.8 million, in China of $1.3 million, and in the U.S. of $53.8 million for federal and $68.5 million for state and local jurisdictions.

The 2016 deferred tax credits of $11.5 million consist of $3.8 million U.S. federal tax credits and $7.7 million non-U.S. credits. The U.S. federal tax credits consist of $2.6 million of general business research and development credits which will expire between 2024 and 2036 and $1.2 million of alternative minimum tax credits which do not expire. The non-U.S. credit of $7.7 million, which is related to withholding tax on inter-company debt in the Netherlands, can be carried forward indefinitely. The 2015 deferred tax credits of $10.2 million consisted of $2.6 million U.S. federal tax credits and $7.6 million non-U.S. credits.

In assessing the need for a valuation allowance, management considers on a quarterly basis whether it is more likely than not that some portion or all of the deferred income tax assets will be realized. The ultimate realization of deferred income tax

assets is dependent upon the generation of future taxable income (including reversals of deferred income tax liabilities) during the periods in which those deductible temporary differences reverse. As a result, we consider the historical and projected financial results of the tax paying component recording the net deferred income tax asset as well as all other positive and negative evidence. Examples of the evidence we consider are cumulative losses in recent years, losses expected in early future years, a history of potential tax benefits expiring unused and whether there were unusual, infrequent, or extraordinary items to be considered. We currently have a valuation allowance in place on our deferred income tax assets in the Netherlands. We intend to maintain this allowance until a period of sustainable income is achieved and management concludes it is more likely than not that those deferred income tax assets will be realized.

As of December 31, 2015, management considered the evidence, both positive and negative, in assessing the realizability of our deferred tax assets in the U.S. The positive evidence, including achievement of cumulative income in recent years and expectations for sustainable future income, was strong enough to conclude that it is more likely than not that nearly all of our deferred tax assets are realizable and the valuation allowance was reduced accordingly. In order to fully realize our deferred tax assets in the U.S., the Company needs to generate approximately $176.6 million of future taxable income.

Our European operations in the Netherlands incurred an operating loss in 2016, continues to be in cumulative loss positions in recent years, and has a history of tax loss carry-forwards expiring unused. In addition, European economic conditions continue to be unfavorable. Accordingly, management believes it is not more likely than not that a portion of the deferred tax assets related to these operations will be realized and a valuation allowance continues to be recorded as of December 31, 2016.

The valuation allowance activity for the years ended December 31 is as follows:

Year ended December 31, (dollars in thousands)	2016	2015	2014
Beginning balance	$ 11,184	$ 66,486	$ 46,048
Charge (benefit) to provision for income taxes	2,589	(49,877)	3,507
Charge (benefit) to other comprehensive income	—	(5,425)	16,931
Ending balance	$ 13,773	$ 11,184	$ 66,486

The valuation allowance increased $2.6 million in 2016 from $11.2 million at December 31, 2015 to $13.8 million at December 31, 2016. The 2016 increase of $2.6 million is attributable to changes in deferred tax assets in foreign jurisdictions where valuation allowances are recorded. The 2016 valuation allowance of $13.8 million relates to net operating losses and foreign tax credits in the Netherlands. The valuation allowance decreased $55.3 million in 2015 from $66.5 million at December 31, 2014 to $11.2 million at December 31, 2015. The 2015 decrease of $55.3 million was primarily attributable to the 2015 reversal of substantially all of the U.S. valuation allowance, partially offset by changes in deferred tax assets in foreign jurisdictions where valuation allowances were recorded. The 2014 increase in valuation allowance of $20.4 million was attributable to the 2014 change in deferred tax assets, primarily related to the U.S. federal net operating loss carry forward and other comprehensive income losses related to pensions.

Reconciliation from the statutory U.S. federal income tax rate to the consolidated effective income tax rate was as follows:

Year ended December 31,	2016	2015	2014
Statutory U.S. federal income tax rate	35.0 %	35.0 %	35.0 %
Increase (decrease) in rate due to:			
Non-U.S. income tax differential	(2.1)	(0.9)	(25.9)
U.S. state and local income taxes, net of related U.S. federal income taxes	(1.3)	(2.0)	0.8
U.S. federal credits	(2.2)	—	—
Permanent adjustments	3.8	7.5	20.1
Foreign withholding taxes	5.7	4.7	14.8
Valuation allowance	11.1	(174.8)	42.9
Unrecognized tax benefits	10.0	(0.3)	(9.3)
Impact of foreign exchange	3.4	(19.8)	(14.0)
Tax effect of intercompany capitalization	—	11.7	—
Other	0.3	3.0	(1.1)
Consolidated effective income tax rate	63.7 %	(135.9) %	63.3 %

U.S. income and foreign withholding taxes have not been recognized on the excess of the amount for financial reporting over the tax basis of investments in foreign subsidiaries that is indefinitely reinvested outside of the United States. This amount becomes taxable upon a repatriation of assets from the subsidiary or a sale or liquidation of the subsidiary. The amount of such temporary differences totaled $27.7 million as of December 31, 2016 and $35.0 million as of December 31, 2015. Determination of the amount of any unrecognized deferred income tax liability on this temporary difference is not practicable because of the complexities of the hypothetical calculation.

We are subject to income taxes in the U.S. and various foreign jurisdictions. Management judgment is required in evaluating our tax positions and determining our provision for income taxes. Throughout the course of business, there are numerous transactions and calculations for which the ultimate tax determination is uncertain. When management believes uncertain tax positions may be challenged despite our belief that the tax return positions are supportable, we record unrecognized tax benefits as liabilities in accordance with the requirements of ASC 740. When our judgment with respect to these uncertain tax positions changes as a result of a change in facts and circumstances, such as the outcome of a tax audit, we adjust these liabilities through increases or decreases to the income tax provision.

The Company and its subsidiaries are subject to examination by various countries' tax authorities. These examinations may lead to proposed or assessed adjustments to our taxes. In August 2016, one of our Mexican subsidiaries received a tax assessment from the Mexican tax authority (SAT) related to the audit of its 2010 tax year. The amount assessed was approximately 3 billion Mexican pesos, which was equivalent to approximately $157 million U.S. dollars as of the date of the assessment. The Company has filed an administrative appeal with SAT requesting that the assessment be fully nullified. We are awaiting the outcome of the appeal. Management, in consultation with external legal counsel, believes that if contested in the Mexican court system, it is more likely than not that the Company would prevail on all significant components of the assessment. Management intends to continue to vigorously contest all significant components of the assessment in the Mexican courts if they are not nullified at the administrative appeal level. We believe that our tax reserves related to uncertain tax positions are adequate at this time.

A reconciliation of the beginning and ending gross unrecognized tax benefits, excluding interest and penalties, is as follows:

(dollars in thousands)	2016	2015	2014
Beginning balance	$ 431	$ 378	$ 1,312
Additions based on tax positions related to the current year	382	293	—
Additions for tax positions of prior years	3,001	—	—
Reductions for tax positions of prior years	(293)	—	(325)
Changes due to lapse of statute of limitations	—	(240)	(609)
Ending balance	$ 3,521	$ 431	$ 378

We recognize interest and penalties related to unrecognized tax benefits in the provision for income taxes. Other disclosures relating to unrecognized tax benefits are as follows:

December 31, (dollars in thousands)	2016	2015	2014
Impact on the effective tax rate, if unrecognized tax benefits were recognized	$ 3,414	$ 378	$ 306
Interest and penalties, net of tax benefit, accrued in the Consolidated Balance Sheets	$ 273	$ 28	$ 174
Interest and penalties expense (benefit) recognized in the Consolidated Statements of Operations	$ 245	$ (146)	$ (363)

Based upon the outcome of tax examinations, judicial proceedings, other settlements with taxing jurisdictions, or expiration of statutes of limitations, it is reasonably possible that the ultimate resolution of these unrecognized tax benefits may result in a payment that is materially different from the current estimate of the tax liabilities. It is also reasonably possible that gross unrecognized tax benefits may decrease within the next twelve months by approximately $3.9 million due to settlements with tax authorities.

We file income tax returns in the U.S. federal jurisdiction, and various state and foreign jurisdictions. As of December 31, 2016, the tax years that remained subject to examination by major tax jurisdictions were as follows:

Jurisdiction	Open Years
Canada	2012 – 2016
China	2007 – 2016
Mexico	2010 – 2016
Netherlands	2015 – 2016
Portugal	2013 – 2016
United States (excluding 2009 which is closed)	2008 – 2016

9. Pension

We have pension plans covering the majority of our employees. Benefits generally are based on compensation and service for salaried employees and job grade and length of service for hourly employees. In addition, we have an unfunded supplemental employee retirement plan (SERP) that covers salaried U.S.-based employees of Libbey hired before January 1, 2006. The U.S. pension plans cover the salaried U.S.-based employees of Libbey hired before January 1, 2006 and most hourly U.S.-based employees (excluding employees hired at Shreveport after December 15, 2008 and at Toledo after September 30, 2010). Effective January 1, 2013, we ceased annual company contribution credits to the cash balance accounts in our Libbey U.S. Salaried Pension Plan and SERP. The non-U.S. pension plans cover the employees of our wholly owned subsidiaries in the Netherlands and Mexico. The plan in Mexico is unfunded.

In the fourth quarter of 2015, we executed an agreement with Pensioenfonds voor de Grafische Bedrijven (“PGB”), an industry wide pension fund, and unwound direct ownership of our defined benefit pension plan in the Netherlands. In accordance with this agreement, we transferred all assets of the plan and made a cash contribution of $5.2 million to PGB. In return, PGB assumed the related liabilities and administrative responsibilities of the plan. As a result, there is no longer a pension liability on the Consolidated Balance Sheet related to this pension plan. This event also resulted in a settlement charge of $21.6 million being recorded in the Consolidated Statement of Operations in the fourth quarter of 2015. Beginning in 2016, Libbey Holland made cash contributions to PGB as participating employees earned pension benefits. These related costs were expensed as incurred, similar to the accounting associated with a defined contribution retirement plan and amounted to $1.9 million in 2016.

Effect on Operations

The components of our net pension expense, including the SERP, are as follows:

Year ended December 31, (dollars in thousands)	U.S. Plans			Non-U.S. Plans			Total		
	2016	2015	2014	2016	2015	2014	2016	2015	2014
Service cost (benefits earned during the period)	$ 3,717	$ 4,365	$ 3,664	$ 1,226	$ 2,965	$ 2,264	$ 4,943	$ 7,330	$ 5,928
Interest cost on projected benefit obligation	14,963	14,715	15,378	2,594	4,332	5,566	17,557	19,047	20,944
Expected return on plan assets	(23,027)	(22,661)	(22,387)	—	(2,447)	(2,447)	(23,027)	(25,108)	(24,834)
Amortization of unrecognized:									
Prior service cost	263	417	1,059	(207)	(244)	164	56	173	1,223
Actuarial loss	4,272	7,291	4,057	782	1,599	1,012	5,054	8,890	5,069
Transition obligations	—	—	—	—	—	60	—	—	60
Settlement charge	42	13	483	126	21,574	291	168	21,587	774
Curtailment charge (credit)	—	—	—	—	(14)	—	—	(14)	—
Pension expense	$ 230	$ 4,140	$ 2,254	$ 4,521	$ 27,765	$ 6,910	$ 4,751	$ 31,905	$ 9,164

In 2016, 2015 and 2014, we incurred pension settlement charges of $0.2 million, $21.6 million and $0.8 million, respectively. The pension settlement charges in 2015 were triggered primarily by the liquidation of the Dutch pension fund. The pension settlement charges in 2016 and 2014 were triggered by excess lump sum distributions taken by employees, which required us to record unrecognized gains and losses in our pension plan accounts.

Actuarial Assumptions

The assumptions used to determine the benefit obligations were as follows:

	U.S. Plans		Non-U.S. Plans	
	2016	2015	2016	2015
Discount rate	4.18% to 4.23%	4.60% to 4.73%	9.30%	8.10%
Rate of compensation increase	Not applicable	Not applicable	4.30%	4.30%

The assumptions used to determine net periodic pension costs were as follows:

	U.S. Plans			Non-U.S. Plans		
	2016	2015	2014	2016	2015	2014
Discount rate	4.66% to 4.73%	4.17% to 4.29%	4.83% to 5.12%	8.10%	2.30% to 7.60%	3.70% to 8.50%
Expected long-term rate of return on plan assets	7.25%	7.25%	7.25%	—%	4.00%	4.10%
Rate of compensation increase	Not applicable	Not applicable	Not applicable	4.30%	2.00% to 4.30%	2.00% to 4.30%

The discount rate enables us to estimate the present value of expected future cash flows on the measurement date. The rate used reflects a rate of return on high-quality fixed income investments that match the duration of expected benefit payments at our December 31 measurement date. The discount rate at December 31 is used to measure the year-end benefit obligations and the earnings effects for the subsequent year. A higher discount rate decreases the present value of benefit obligations and decreases pension expense.

To determine the expected long-term rate of return on plan assets for our funded plans, we consider the current and expected asset allocations, as well as historical and expected returns on various categories of plan assets. The expected long-term rate of return on plan assets at December 31st is used to measure the earnings effects for the subsequent year.

Future benefits are assumed to increase in a manner consistent with past experience of the plans except for the Libbey U.S. Salaried Pension Plan and SERP as discussed above, which, to the extent benefits are based on compensation, includes assumed compensation increases as presented above. Amortization included in net pension expense is based on the average remaining service of employees.

We account for our defined benefit pension plans on an expense basis that reflects actuarial funding methods. The actuarial valuations require significant estimates and assumptions to be made by management, primarily with respect to the discount rate and expected long-term return on plan assets. These assumptions are all susceptible to changes in market conditions. The discount rate is based on a selected settlement portfolio from a universe of high quality bonds. In determining the expected long-term rate of return on plan assets, we consider historical market and portfolio rates of return, asset allocations and expectations of future rates of return. We evaluate these critical assumptions on our annual measurement date of December 31st. Other assumptions involving demographic factors such as retirement age, mortality and turnover are evaluated periodically and are updated to reflect our experience. Actual results in any given year often will differ from actuarial assumptions because of demographic, economic and other factors.

During 2014, the Society of Actuaries released a new mortality table, which is believed to better reflect current mortality expectations and is to be used in calculating pension obligations. In 2014, we adopted these new tables for our U.S. pension plans for use in determining our projected benefit obligations. In 2015 and 2016, the Society of Actuaries published new mortality projection scales which reflected additional years of mortality experience. We adopted these updates in each respective year.

Projected Benefit Obligation (PBO) and Fair Value of Assets

The changes in the projected benefit obligations and fair value of plan assets are as follows:

Year ended December 31, (dollars in thousands)	U.S. Plans		Non-U.S. Plans		Total	
	2016	2015	2016	2015	2016	2015
Change in projected benefit obligation:						
Projected benefit obligation, beginning of year	$325,863	$351,477	$ 35,915	$119,986	$361,778	$471,463
Service cost	3,717	4,365	1,226	2,965	4,943	7,330
Interest cost	14,963	14,715	2,594	4,332	17,557	19,047
Exchange rate fluctuations	—	—	(5,821)	(13,948)	(5,821)	(13,948)
Actuarial (gain) loss	11,108	(26,796)	(2,477)	11,105	8,631	(15,691)
Plan participants' contributions	—	—	—	1,359	—	1,359
Plan amendments	—	—	—	(4,354)	—	(4,354)
Curtailment effect	—	—	—	(7,414)	—	(7,414)
Settlements paid	(259)	(96)	—	(74,485)	(259)	(74,581)
Benefits paid	(18,744)	(17,802)	(3,276)	(3,631)	(22,020)	(21,433)
Projected benefit obligation, end of year	$336,648	$325,863	$ 28,161	$ 35,915	$364,809	$361,778
Change in fair value of plan assets:						
Fair value of plan assets, beginning of year	$316,184	$340,082	$ —	$ 74,279	$316,184	$414,361
Actual return on plan assets	20,974	(6,096)	—	(213)	20,974	(6,309)
Exchange rate fluctuations	—	—	—	(7,761)	—	(7,761)
Employer contributions	259	96	3,276	10,452	3,535	10,548
Plan participants' contributions	—	—	—	1,359	—	1,359
Settlements paid	(259)	(96)	—	(74,485)	(259)	(74,581)
Benefits paid	(18,744)	(17,802)	(3,276)	(3,631)	(22,020)	(21,433)
Fair value of plan assets, end of year	$318,414	$316,184	$ —	$ —	$318,414	$316,184
Funded ratio	94.6%	97.0%	—%	—%	87.3%	87.4%
Funded status and net accrued pension benefit asset (cost)	$ (18,234)	$ (9,679)	$ (28,161)	$ (35,915)	$ (46,395)	$ (45,594)

The non-U.S. settlements paid in 2015 relate to us unwinding our direct ownership of the defined benefit pension plan in the Netherlands.

The current portion of the pension liability reflects the amount of expected benefit payments that are greater than the plan assets on a plan-by-plan basis. The net accrued pension benefit liability at December 31 of the respective year-ends were included in the Consolidated Balance Sheets as follows:

December 31, (dollars in thousands)	2016	2015
Non-current asset	$ —	$ 977
Current liability	(2,461)	(2,297)
Long-term liability	(43,934)	(44,274)
Net accrued pension liability	$ (46,395)	$ (45,594)

The pretax amounts recognized in accumulated other comprehensive loss as of December 31, 2016 and 2015, are as follows**:**

Year ended December 31, (dollars in thousands)	U.S. Plans		Non-U.S. Plans		Total	
	2016	2015	2016	2015	2016	2015
Net actuarial loss	$ 105,830	$ 96,983	$ 11,077	$ 16,988	$ 116,907	$ 113,971
Prior service cost (credit)	237	500	(2,704)	(3,472)	(2,467)	(2,972)
Total cost	$ 106,067	$ 97,483	$ 8,373	$ 13,516	$ 114,440	$ 110,999

The pretax amounts in accumulated other comprehensive loss as of December 31, 2016, that are expected to be recognized as components of net periodic benefit cost during 2017 are as follows:

(dollars in thousands)	U.S. Plans	Non-U.S. Plans	Total
Net actuarial loss	$ 5,409	$ 543	$ 5,952
Prior service cost (credit)	236	(187)	49
Total cost	$ 5,645	$ 356	$ 6,001

Estimated contributions for 2017, as well as, contributions made in 2016 and 2015 to the pension plans are as follows:

(dollars in thousands)	U.S. Plans	Non-U.S. Plans	Total
Estimated contributions in 2017	$ 286	$ 2,278	$ 2,564
Contributions made in 2016	$ 259	$ 3,276	$ 3,535
Contributions made in 2015	$ 96	$ 10,452	$ 10,548

Included in the above table, related to the non-U.S. plans, we paid $5.2 million in connection with unwinding the direct ownership of our defined benefit pension plan in the Netherlands in the fourth quarter of 2015. It is difficult to estimate future cash contributions to the pension plans, as such amounts are a function of actual investment returns, withdrawals from the plans, changes in interest rates and other factors uncertain at this time. It is possible that greater cash contributions may be required in 2017 than the amounts in the above table. Although a decline in market conditions, changes in current pension law and uncertainties regarding significant assumptions used in the actuarial valuations may have a material impact in future required contributions to our pension plans, we currently do not expect funding requirements to have a material adverse impact on current or future liquidity.

Pension benefit payment amounts are anticipated to be paid from the plans (including the SERP) as follows:

Year (dollars in thousands)	U.S. Plans	Non-U.S. Plans	Total
2017	$ 19,038	$ 2,278	$ 21,316
2018	$ 19,957	$ 1,668	$ 21,625
2019	$ 20,146	$ 1,786	$ 21,932
2020	$ 20,164	$ 1,903	$ 22,067
2021	$ 20,497	$ 2,258	$ 22,755
2022-2026	$ 105,868	$ 12,215	$ 118,083

Accumulated Benefit Obligation in Excess of Plan Assets

The projected benefit obligation, accumulated benefit obligation and fair value of plan assets for pension plans with an accumulated benefit obligation in excess of plan assets at December 31, 2016 and 2015 were as follows:

December 31, (dollars in thousands)	U.S. Plans		Non-U.S. Plans		Total	
	2016	2015	2016	2015	2016	2015
Projected benefit obligation	$ 336,648	$ 268,218	$ 28,161	$ 35,915	$ 364,809	$ 304,133
Accumulated benefit obligation	$ 336,648	$ 268,218	$ 23,194	$ 29,102	$ 359,842	$ 297,320
Fair value of plan assets	$ 318,414	$ 257,562	$ —	$ —	$ 318,414	$ 257,562

Plan Assets

Our investment strategy is to control and manage investment risk through diversification across asset classes and investment styles, within established target asset allocation ranges. The investment risk of the assets is limited by appropriate diversification both within and between asset classes. Assets are diversified among a mix of traditional investments in equity and fixed income instruments, as well as alternative investments including real estate and hedge funds. It would be anticipated that a modest allocation to short-term investments would exist within the plans, since each investment manager is likely to hold some short-term investments in the portfolio with the goal of ensuring that sufficient liquidity will be available to meet expected cash flow requirements.

Our investment valuation policy is to state the investments at fair value. All investments are valued at their respective NAV as a practical expedient and calculated by the Trustee. The real estate, equity securities and fixed income investments are held in a Group Trust which is valued at the unit prices established by the Trustee and are valued using NAV as a practical expedient. Underlying equity securities (including large and small cap domestic and international equities), for which market quotations are readily available, are valued at the last reported readily available sales price on their principal exchange on the valuation date or official close for certain markets. Fixed income investments are valued on a basis of valuations furnished by a trustee-approved pricing service, which determines valuations for normal institutional-size trading units of such securities which are generally recognized at fair value as determined in good faith by the Trustee. The fair value of investments in real estate funds is based on valuation of the fund as determined by periodic appraisals of the underlying investments owned by the respective fund. Investments in registered investment companies or collective pooled funds, if any, are valued at their respective NAV. Short-term investments are valued at their respective NAV and have no redemption restrictions. The hedge fund investments are valued by using estimated month-end NAV and performance numbers provided by the fund administrator. The Plan is required to provide a month's advance written notice to liquidate its entire share in the Group Trust. Certain investments in the hedge funds can only be liquidated on either a quarterly or semi-annual basis and require advance notification.

In connection with the unwinding of our defined benefit pension plan in the Netherlands in the fourth quarter of 2015, all related plan assets were transferred to PGB, an industry wide pension fund. In accordance with our adoption of ASU 2015-07 in 2016, all investments measured at NAV as a practical expedient for fair value have been excluded from the fair value hierarchy. The fair value measurements table presented below of our U.S. pension plan assets has been recasted to conform to the current year presentation under ASU 2015-07. See note 2 for more information.

December 31, (dollars in thousands)	Measured at NAV 2016	Measured at NAV 2015	Target Allocation 2017
Short-term investments	$ 8,766	$ 9,558	3%
Real estate	15,812	17,376	5%
Equity securities	148,302	138,497	45%
Debt securities	96,658	101,895	32%
Hedge funds	48,876	48,858	15%
Total	$ 318,414	$ 316,184	100%

10. Nonpension Postretirement Benefits

We provide certain retiree health care and life insurance benefits covering our U.S. and Canadian salaried employees hired before January 1, 2004 and a majority of our union hourly employees (excluding employees hired at Shreveport after December 15, 2008 and at Toledo after September 30, 2010). Employees are generally eligible for benefits upon retirement and completion of a specified number of years of creditable service. Benefits for most hourly retirees are determined by collective bargaining. The U.S. nonpension postretirement plans cover the hourly and salaried U.S.-based employees of Libbey (excluding those mentioned above). The non-U.S. nonpension postretirement plans cover the retirees and active employees of Libbey who are located in Canada. The postretirement benefit plans are not funded.

Effect on Operations

The provision for our nonpension postretirement benefit expense consists of the following:

Year ended December 31, (dollars in thousands)	U.S. Plans 2016	U.S. Plans 2015	U.S. Plans 2014	Non-U.S. Plans 2016	Non-U.S. Plans 2015	Non-U.S. Plans 2014	Total 2016	Total 2015	Total 2014
Service cost (benefits earned during the period)	$ 797	$ 855	$ 1,007	$ 1	$ 1	$ 1	$ 798	$ 856	$ 1,008
Interest cost on projected benefit obligation	2,608	2,537	2,840	51	52	108	2,659	2,589	2,948
Amortization of unrecognized:									
Prior service cost	140	140	140	—	—	—	140	140	140
Loss (gain)	81	592	267	(47)	(56)	—	34	536	267
Nonpension postretirement benefit expense	$ 3,626	$ 4,124	$ 4,254	$ 5	$ (3)	$ 109	$ 3,631	$ 4,121	$ 4,363

Actuarial Assumptions

The discount rates used to determine the accumulated postretirement benefit obligation and net postretirement benefit cost were as follows:

	U.S. Plans 2016	U.S. Plans 2015	U.S. Plans 2014	Non-U.S. Plans 2016	Non-U.S. Plans 2015	Non-U.S. Plans 2014
Accumulated postretirement benefit obligation	4.05%	4.56%	4.10%	3.48%	3.69%	3.61%
Net postretirement benefit cost	4.56%	4.10%	4.74%	3.69%	3.61%	4.36%

The weighted average assumed health care cost trend rates at December 31 were as follows:

	U.S. Plans 2016	U.S. Plans 2015	Non-U.S. Plans 2016	Non-U.S. Plans 2015
Health care cost trend rate assumed for next year	6.75%	7.00%	6.75%	7.00%
Ultimate health care trend rate	5.00%	5.00%	5.00%	5.00%
Year the ultimate trend rate is reached	2024	2024	2024	2024

We use various actuarial assumptions, including the discount rate and the expected trend in health care costs, to estimate the costs and benefit obligations for our retiree health plan. The discount rate is determined based on high-quality fixed income

investments that match the duration of expected retiree medical benefits at our December 31 measurement date to establish the discount rate. The discount rate at December 31 is used to measure the year-end benefit obligations and the earnings effects for the subsequent year.

The health care cost trend rate represents our expected annual rates of change in the cost of health care benefits. The trend rate noted above represents a forward projection of health care costs as of the measurement date. A 1.0 percent change in the health care trend rate would not have a material impact upon the nonpension postretirement expense.

Accumulated Postretirement Benefit Obligation

The components of our nonpension postretirement benefit obligation are as follows:

Year ended December 31, (dollars in thousands)	U.S. Plans		Non-U.S. Plans		Total	
	2016	2015	2016	2015	2016	2015
Change in accumulated nonpension postretirement benefit obligation:						
Benefit obligation, beginning of year	$ 58,795	$ 65,565	$ 1,390	$ 2,536	$ 60,185	$ 68,101
Service Cost	797	855	1	1	798	856
Interest cost	2,608	2,537	51	52	2,659	2,589
Plan participants' contributions	528	610	—	—	528	610
Actuarial (gain) loss	146	(7,287)	(102)	(740)	44	(8,027)
Exchange rate fluctuations	—	—	46	(346)	46	(346)
Benefits paid	(3,953)	(3,485)	(42)	(113)	(3,995)	(3,598)
Benefit obligation, end of year	$ 58,921	$ 58,795	$ 1,344	$ 1,390	$ 60,265	$ 60,185
Funded status and accrued benefit cost	$ (58,921)	$ (58,795)	$ (1,344)	$ (1,390)	$ (60,265)	$ (60,185)

The net accrued postretirement benefit liability at December 31 of the respective year-ends were included in the Consolidated Balance Sheets as follows:

December 31, (dollars in thousands)	2016	2015
Current liability	$ 4,892	$ 4,903
Long-term liability	55,373	55,282
Total accrued postretirement benefit liability	$ 60,265	$ 60,185

The pretax amounts recognized in accumulated other comprehensive loss as of December 31, 2016 and 2015, are as follows:

Year ended December 31, (dollars in thousands)	U.S. Plans		Non-U.S. Plans		Total	
	2016	2015	2016	2015	2016	2015
Net actuarial loss (gain)	$ 5,146	$ 5,080	$ (730)	$ (654)	$ 4,416	$ 4,426
Prior service cost (credit)	(1,463)	(1,323)	—	—	(1,463)	(1,323)
Total cost (credit)	$ 3,683	$ 3,757	$ (730)	$ (654)	$ 2,953	$ 3,103

The pretax amounts in accumulated other comprehensive loss at December 31, 2016, that are expected to be recognized as components of net periodic benefit cost during 2017 are as follows:

(dollars in thousands)	U.S. Plans	Non-U.S. Plans	Total
Net actuarial loss (gain)	$ 101	$ (54)	$ 47
Prior service cost (credit)	(200)	—	(200)
Total cost (credit)	$ (99)	$ (54)	$ (153)

Nonpension postretirement benefit payments net of estimated future Medicare Part D subsidy payments and future retiree contributions, are anticipated to be paid as follows:

Fiscal Year (dollars in thousands)	U.S. Plans	Non-U.S. Plans	Total
2017	$ 4,833	$ 154	$ 4,987
2018	$ 4,951	$ 153	$ 5,104
2019	$ 4,990	$ 147	$ 5,137
2020	$ 4,872	$ 141	$ 5,013
2021	$ 4,614	$ 133	$ 4,747
2022-2026	$ 19,834	$ 434	$ 20,268

11. Net Income per Share of Common Stock

The following table sets forth the computation of basic and diluted earnings per share:

Year ended December 31, (dollars in thousands, except earnings per share)	2016	2015	2014
Numerator for earnings per share:			
Net income that is available to common shareholders	$ 10,073	$ 66,333	$ 4,963
Denominator for basic earnings per share:			
Weighted average shares outstanding	21,879,613	21,816,935	21,716,288
Denominator for diluted earnings per share:			
Effect of stock options and restricted stock units	169,330	342,214	467,249
Adjusted weighted average shares and assumed conversions	22,048,943	22,159,149	22,183,537
Basic earnings per share	$ 0.46	$ 3.04	$ 0.23
Diluted earnings per share	$ 0.46	$ 2.99	$ 0.22
Shares excluded from diluted earnings per share due to:			
Inclusion would have been anti-dilutive (excluded from calculation)	602,402	105,201	168,557

When applicable, diluted shares outstanding include the dilutive impact of restricted stock units. Diluted shares also include the impact of eligible employee stock options, which are calculated based on the average share price for each fiscal period using the treasury stock method. Under the treasury stock method, the tax-effected proceeds that hypothetically would be received from the exercise of all in-the-money options are assumed to be used to repurchase shares.

12. Employee Stock Benefit Plans

We have a stock-based employee compensation plan. We account for stock-based compensation in accordance with FASB ASC Topic 718, “Compensation - Stock Compensation” and FASB ASC Topic 505-50, “Equity - Equity Based Payment to Non-Employees”, which requires the measurement and recognition of compensation expense for all share-based awards to our employees and directors. Share-based compensation cost is measured based on the fair value of the equity or liability instruments issued. FASB ASC 718 and FASB ASC 505-50 apply to all of our outstanding unvested share-based payment awards.

Equity Participation Plan Program Description

We have two equity participation plans, the Amended and Restated Libbey Inc. 2006 Omnibus Incentive Plan and the Libbey Inc. 2016 Omnibus Incentive Plan, which we refer to as the Omnibus Plans. Up to a total of 2,960,000 and 1,200,000 shares of Libbey Inc. common stock are authorized for issuance as equity-based compensation under the 2006 and 2016 Omnibus Plans, respectively. Under the Omnibus Plans, grants of equity-based compensation may take the form of stock options, stock appreciation rights, performance shares or units, restricted stock or restricted stock units or other stock-based awards. Employees and directors are eligible for awards under these plans. During 2016, there were grants of 351,590 stock options,

298,909 restricted stock units, and 16,299 cash settled restricted stock units. During 2015, there were grants of 108,297 stock options, 219,010 restricted stock units, and 1,025 cash settled restricted stock units. All option grants have an exercise price equal to the fair market value of the underlying stock on the grant date. The vesting period of options, stock appreciation rights, restricted stock units and cash settled restricted stock units outstanding as of December 31, 2016, is generally four years. Awards are subject to alternate vesting plans for death, disability, retirement eligibility and involuntary termination. Dividends are not payable on shares underlying options, stock appreciation rights or unvested restricted stock units. All grants of equity-based compensation are amortized over the vesting period in accordance with FASB ASC 718 expense attribution methodology. The impact of applying the provisions of FASB ASC 718 is a pretax compensation expense of $4.8 million, $5.9 million and $5.3 million in selling, general and administrative expenses in the Consolidated Statements of Operations for 2016, 2015 and 2014, respectively.

Non-Qualified Stock Option Information

The Black-Scholes option-pricing model was used to estimate the grant-date fair value for stock options. The exercise price of each stock option equals the closing market price of our common stock on the date of grant. The maximum term is ten years. The following table summarizes non-qualified stock option disclosures for 2016, 2015 and 2014:

Year ended December 31, (dollars in thousands, except options and assumptions)	**2016**	**2015**	**2014**
Stock options granted	351,590	108,297	233,054
Stock option compensation expense included in the Consolidated Statements of Operations	$ 705	$ 1,674	$ 1,591
Weighted-average grant-date fair value of options granted using the Black-Scholes model	$ 4.20	$ 14.72	$ 10.86
Weighted average assumptions for stock option grants:			
Risk-free interest	1.30%	1.68%	1.90%
Expected term	6.3 years	6.4 years	6.5 years
Expected volatility	33.14%	39.92%	42.81%
Dividend yield	2.69%	1.16%	0.00%

- The risk-free interest rate is based on the U.S. Treasury yield curve at the time of grant and has a term equal to the expected life.
- The expected term represents the period of time the options are expected to be outstanding. We use the actual historical exercise activity for determining the expected term.
- Expected volatility is calculated based on a rolling average of the daily stock closing prices of a peer group of companies with a period equal to the expected life of the award. The peer group is used due to the Company having a period of history when we were more highly leveraged which is not relevant in evaluating expected volatility. The peer group was established using the criteria of similar industry, size, leverage and length of history.
- The dividend yield is calculated as the ratio based on our most recent historical dividend payments per share of common stock at the grant date to the stock price on the date of grant.

Information with respect to our stock option activity for 2016, 2015 and 2014 is as follows:

Stock Options	Shares	Weighted-Average Exercise Price per Share	Weighted-Average Remaining Contractual Life (In Years)	Aggregate Intrinsic Value (in thousands)
Outstanding balance at January 1, 2014	988,780	$ 14.07	5.0	$ 6,856
Granted	233,054	$ 23.92		
Exercised	(363,459)	$ 12.57		$ 5,218
Canceled	(24,365)	$ 20.58		
Outstanding balance at December 31, 2014	834,010	$ 17.28	6.7	$ 11,808
Granted	108,297	$ 36.90		
Exercised	(241,122)	$ 13.85		$ 5,722
Canceled	(44,514)	$ 25.43		
Outstanding balance at December 31, 2015	656,671	$ 21.22	6.8	$ 2,103
Granted	351,590	$ 17.23		
Exercised	(100,813)	$ 13.90		$ 379
Canceled	(262,225)	$ 23.73		
Outstanding balance at December 31, 2016	645,223	$ 19.17	6.6	$ 1,407
Exercisable at December 31, 2016	300,288	$ 18.43	4.3	$ 816

Intrinsic value for share-based instruments is defined as the difference between the current market value and the exercise price.

As of December 31, 2016, $0.8 million of unrecognized compensation expense related to nonvested stock options is expected to be recognized within the next 1.9 years on a weighted-average basis. The total fair value of shares vested during 2016, 2015 and 2014 is $1.6 million, $1.7 million and $1.1 million, respectively. Shares issued for exercised options are issued from treasury stock, when available.

The following table summarizes our nonvested stock option activity for 2016, 2015 and 2014:

Nonvested Stock Options	Shares	Weighted-Average Value (per Share)
Nonvested at January 1, 2014	342,276	$ 9.07
Granted	233,054	$ 10.86
Vested	(113,550)	$ 9.37
Forfeited	(23,265)	$ 9.73
Nonvested at December 31, 2014	438,515	$ 9.91
Granted	108,297	$ 14.72
Vested	(161,923)	$ 10.55
Forfeited	(42,887)	$ 11.32
Nonvested at December 31, 2015	342,002	$ 10.95
Granted	351,590	$ 4.20
Vested	(169,703)	$ 9.42
Forfeited	(178,954)	$ 8.41
Nonvested at December 31, 2016	344,935	$ 6.14

Stock Appreciation Rights Information

The exercise price of each stock appreciation right equals the closing market price of our common stock on the date of grant. The maximum term is ten years. Stock appreciation rights are settled in cash for the difference between the market price on the date of exercise and the exercise price. Awards that are settled in cash are subject to liability accounting. Accordingly, the fair value of such awards is remeasured at the end of each reporting period until settled or expired. The Company entered into a CEO Retention Award Agreement pursuant to which the Company issued 240,829 stock appreciation rights to our former CEO

on December 16, 2013. On January 11, 2016, vesting of all unvested retention stock appreciation rights otherwise scheduled to vest on December 31, 2018 was accelerated as a result of the departure of our former CEO.

The Black-Scholes option-pricing model was used to estimate the grant-date fair value. The following table summarizes stock appreciation rights disclosures for 2016, 2015 and 2014:

Year ended December 31, (dollars in thousands, except stock appreciation rights and assumptions)	2016	2015	2014
Stock appreciation rights granted	—	—	2,600
Stock appreciation rights compensation expense (credit) included in the Consolidated Statements of Operations	$ (462)	$ (273)	$ 736
Weighted-average grant-date fair value of stock appreciation rights granted using the Black-Scholes model			$ 10.45
Weighted average assumptions for stock appreciation rights granted:			
Risk-free interest			1.92%
Expected term			6.5 years
Expected volatility			43.14%
Dividend yield			0.00%

The risk-free interest rate, expected term, expected volatility and dividend yield assumptions are calculated consistent with our non-qualified stock option awards.

Information with respect to our stock appreciation right activity for 2016, 2015 and 2014 is as follows:

Stock Appreciation Rights	Shares	Weighted Average Exercise Price	Weighted-Average Remaining Contractual Life (In Years)	Aggregate Intrinsic Value (in thousands)
Outstanding Balance at January 1, 2014	250,979	$ 21.07	10	$ —
Granted	2,600	$ 23.02		
Exercised	(6,475)	$ 14.98		
Canceled	(2,875)	$ 16.99		
Outstanding balance at December 31, 2014	244,229	$ 21.27	9	$ 2,483
Outstanding balance at December 31, 2015	244,229	$ 21.27	8	$ 14
Outstanding balance at December 31, 2016	244,229	$ 21.27	0.1	$ 4
Exercisable at December 31, 2016	243,079	$ 21.27	0.1	$ 4

As of December 31, 2016, the amount of unrecognized compensation expense related to nonvested stock appreciation rights is immaterial. The total fair value of shares vested during 2016, 2015 and 2014 was immaterial.

The following table summarizes our non-vested stock appreciation rights for 2016, 2015 and 2014:

Nonvested Stock Appreciation Rights	Shares	Weighted-Average Value (per Share)
Nonvested at January 1, 2014	248,041	$ 10.36
Granted	2,600	$ 10.45
Vested	(3,537)	$ 10.10
Forfeited	(2,875)	$ 9.66
Nonvested at December 31, 2014	244,229	$ 10.37
Vested	(1,250)	$ 10.33
Nonvested at December 31, 2015	242,979	$ 10.37
Vested	(241,829)	$ 10.38
Nonvested at December 31, 2016	1,150	$ 9.88

Stock and Restricted Stock Unit Information

Under the Omnibus Plans, we grant non-employee members of our Board of Directors shares of stock. The shares granted to Directors are immediately vested and all compensation expense is recognized in our Consolidated Statements of Operations in the year the grants are made. In addition, we grant restricted stock units to select executives and key employees. Compensation expense for restricted stock is measured based on the closing market price of the stock at date of grant less the present value of expected dividends over the vesting period, as dividends are not payable on unvested restricted stock units.

A summary of the activity for stock and restricted stock units under the Omnibus Plans for 2016, 2015 and 2014 is presented below:

Year ended December 31, (dollars in thousands, except share amounts)	2016	2015	2014
Beginning nonvested balance	315,434	232,824	208,460
Granted	298,909	219,010	123,782
Vested	(165,372)	(113,319)	(92,070)
Forfeited	(165,783)	(23,081)	(7,348)
Ending nonvested balance	283,188	315,434	232,824
Weighted-average grant-date fair value per restricted stock unit	$ 16.22	$ 35.93	$ 24.24
Compensation expense	$ 3,019	$ 4,199	$ 2,340

The total fair value for shares vested during the years ended December 31, 2016, 2015 and 2014 was $3.0 million, $4.2 million and $2.2 million, respectively. As of December 31, 2016, there was $2.8 million of unrecognized compensation cost related to nonvested restricted stock units granted. That cost is expected to be recognized over a weighted average period of 1.8 years. Shares issued for unrestricted stock and restricted stock unit awards are issued from treasury stock, when available.

Cash Settled Restricted Stock Unit Information

Under the terms of the CEO Retention Award Agreement dated December 16, 2013, 115,687 cash settled restricted stock units were granted during the first quarter of 2014. Accordingly, awards that will be settled in cash are subject to liability accounting and the fair value of these awards will be remeasured at the end of each reporting period until settled. On January 11, 2016, vesting of all unvested retention cash settled restricted stock units otherwise scheduled to vest on December 31, 2018 was accelerated as a result of the departure of our former CEO.

A summary of the activity for cash settled restricted stock units is presented below:

Year ended December 31, (dollars in thousands, except share amounts)	2016	2015	2014
Beginning nonvested balance	116,712	115,687	—
Granted	16,299	1,025	115,687
Vested	(115,944)	—	—
Ending nonvested balance	17,067	116,712	115,687
Weighted-average grant-date fair value per restricted stock unit	$ 3.57	$ 36.96	$ 23.02
Compensation expense	$ 1,504	$ 317	$ 616

During 2016, some equity awards for foreign employees were modified to cash settled restricted stock units. The weighted-average grant-date fair value noted above represents the incremental value at the date of modification. As of December 31, 2016, the amount of unrecognized compensation cost related to nonvested cash settled restricted stock units granted was immaterial. We paid $2.3 million to settle vested cash settled restricted stock units in 2016.

Employee 401(k) Plan Retirement Fund and Non-Qualified Deferred Executive Compensation Plans

We sponsor the Libbey Inc. Salary and Hourly 401(k) plans (the Plans) to provide retirement benefits for our U.S. employees. As allowed under Section 401(k) of the Internal Revenue Code, the Plans provide for tax-deferred wage contributions for eligible employees.

For the Salary Plan, employees can contribute from 1 percent to 50 percent of their annual salary, up to the annual IRS limits. We match 100 percent on the first 6 percent on a per pay basis of pretax contributions. For the Hourly Plan, employees can contribute from 1 percent to 25 percent of their eligible annual pay up to the annual IRS limits. We match 50 percent of the first 6 percent of eligible earnings on a per pay basis that are contributed by employees on a pretax basis. Therefore, the maximum matching contribution that we may allocate to each participant's account did not exceed $15,900 for the Salary Plan or $7,950 for the Hourly Plan for the 2016 calendar year due to the $265,000 annual limit on eligible earnings imposed by the Internal Revenue Code. All matching contributions are invested according to the employees' deferral elections and vest immediately.

Effective January 1, 2009, we have a non-qualified Executive Deferred Compensation Plan (EDCP). Under the EDCP, executives and other members of senior management may elect to defer base salary, annual incentive compensation and equity-based compensation. We provide matching contributions on excess contributions (above the qualified 401(k) plan compensation limits) in the same manner as we provide matching contributions under our 401(k) plan.

Our matching contributions to all Plans totaled $3.4 million, $3.4 million and $3.1 million in 2016, 2015 and 2014, respectively.

13. Derivatives

We utilize derivative financial instruments to hedge certain interest rate risks associated with our long-term debt, commodity price risks associated with forecasted future natural gas requirements and foreign exchange rate risks associated with transactions denominated in a currency other than the U.S. dollar. These derivatives, except for the foreign currency contracts and the natural gas contracts used in our Mexican manufacturing facility, qualify for hedge accounting since the hedges are highly effective, and we have designated and documented contemporaneously the hedging relationships involving these derivative instruments. While we intend to continue to meet the conditions for hedge accounting, if hedges do not qualify as highly effective (as is the case for natural gas contracts used in our Mexico manufacturing facility) or if we do not believe that forecasted transactions would occur, the changes in the fair value of the derivatives used as hedges would be reflected in our earnings. All of these contracts were accounted for under FASB ASC 815 “Derivatives and Hedging.”

Fair Values

The following table provides the fair values of our derivative financial instruments for the periods presented:

	Asset Derivatives:			
(dollars in thousands)	**December 31, 2016**		**December 31, 2015**	
Derivatives designated as hedging instruments under FASB ASC 815:	**Balance Sheet Location**	**Fair Value**	**Balance Sheet Location**	**Fair Value**
Natural gas contracts	Prepaid and other current assets	$ 702	Prepaid and other current assets	$ —
Natural gas contracts	Other assets	45	Other assets	—
Total designated		747		—
Derivatives not designated as hedging instruments under FASB ASC 815:				
Natural gas contracts	Prepaid and other current assets	732	Prepaid and other current assets	—
Natural gas contracts	Other assets	29	Other assets	—
Currency contracts	Prepaid and other current assets	—	Prepaid and other current assets	245
Total undesignated		761		245
Total		$ 1,508		$ 245

(dollars in thousands)	Liability Derivatives: December 31, 2016		Liability Derivatives: December 31, 2015	
Derivatives designated as hedging instruments under FASB ASC 815:	**Balance Sheet Location**	**Fair Value**	**Balance Sheet Location**	**Fair Value**
Natural gas contracts	Derivative liability - current	$ —	Derivative liability - current	$ 1,069
Natural gas contracts	Other long-term liabilities	—	Other long-term liabilities	34
Interest rate contract	Derivative liability - current	1,928	Derivative liability - current	2,132
Interest rate contract	Other long-term liabilities	107	Other long-term liabilities	246
Total designated		2,035		3,481
Derivatives not designated as hedging instruments under FASB ASC 815:				
Natural gas contracts	Derivative liability - current	—	Derivative liability - current	1,064
Natural gas contracts	Other long-term liabilities	—	Other long-term liabilities	35
Total undesignated		—		1,099
Total		$ 2,035		$ 4,580

Natural Gas Contracts

We use natural gas swap contracts related to forecasted future North American natural gas requirements. The objective of these commodity contracts is to limit the fluctuations in prices paid due to price movements in the underlying commodity. We consider our forecasted natural gas requirements in determining the quantity of natural gas to hedge. We combine the forecasts with historical observations to establish the percentage of forecast eligible to be hedged, typically ranging from 40 percent to 70 percent of our anticipated requirements, up to eighteen months in the future. The fair values of these instruments are determined from market quotes. As of December 31, 2016, we had commodity contracts for 2,590,000 million British Thermal Units (BTUs) of natural gas. At December 31, 2015, we had commodity contracts for 3,000,000 million BTUs of natural gas.

All of our derivatives for natural gas in the U.S. qualify and are designated as cash flow hedges at December 31, 2016. Hedge accounting is applied only when the derivative is deemed to be highly effective at offsetting changes in fair values or anticipated cash flows of the hedged item or transaction. For hedged forecasted transactions, hedge accounting is discontinued if the forecasted transaction is no longer probable to occur, and any previously deferred gains or losses would be recorded to earnings immediately. Changes in the effective portion of the fair value of these hedges are recorded in other comprehensive income (loss). The ineffective portion of the change in the fair value of a derivative designated as a cash flow hedge is recognized in other income. As the natural gas contracts mature, the accumulated gains (losses) for the respective contracts are reclassified from accumulated other comprehensive loss to current expense in cost of sales in our Consolidated Statements of Operations.

During the first nine months of 2014, our natural gas contracts in Mexico were designated and effective cash flow hedges. Since October 1, 2014, we have not designated our derivatives for natural gas in Mexico as cash flow hedges. All mark-to-market changes relating to these derivatives are being reflected in other income as depicted in the third table below.

We received (paid) additional cash of $(2.3) million, $(4.6) million and $0.6 million in the years ended December 31, 2016, 2015 and 2014, respectively, due to the difference between the fixed unit rate of our natural gas contracts and the variable unit rate of our natural gas cost from suppliers. Based on our current valuation, we estimate that accumulated gains currently carried in accumulated other comprehensive loss that will be reclassified into earnings over the next twelve months will result in $0.7 million of gain in our Consolidated Statements of Operations.

The following table provides a summary of the effective portion of derivative gain (loss) recognized in other comprehensive income (loss) from our natural gas contracts:

Year ended December 31, (dollars in thousands)	2016	2015	2014
Derivatives in Cash Flow Hedging relationships:			
Natural gas contracts	$ 721	$ (1,909)	$ (1,392)
Total	$ 721	$ (1,909)	$ (1,392)

The following table provides a summary of the effective portion of the derivative reclassified from accumulated other comprehensive loss to the Consolidated Statements of Operations from our natural gas contracts:

Year ended December 31, (dollars in thousands)	Location:	2016	2015	2014
Natural gas contracts	Cost of sales	$ (1,129)	$ (2,131)	$ 573
Total impact on net income (loss)		$ (1,129)	$ (2,131)	$ 573

The ineffective portion of derivative gain (loss) related to the de-designated Mexico contracts reclassified from accumulated other comprehensive loss to cost of sales in the Consolidated Statements of Operations was $0.2 million of income and an immaterial amount in the years ended December 31, 2015 and 2014, respectively.

The following table provides a summary of the gain (loss) recognized in other income in the Consolidated Statements of Operations from our natural gas contracts in Mexico since October 1, 2014:

Year ended December 31, (dollars in thousands)	2016	2015	2014
De-designated contracts	$ —	$ 932	$ (1,236)
Contracts where hedge accounting was not elected	1,860	(714)	(81)
Total	$ 1,860	$ 218	$ (1,317)

Interest Rate Swap as Cash Flow Hedge

On April 1, 2015, we executed an interest rate swap on our Term Loan B as part of our risk management strategy to mitigate the risks involved with fluctuating interest rates. The interest rate swap effectively converts $220.0 million, or approximately half, of our Term Loan B debt from a variable interest rate to a 4.85 percent fixed interest rate, thus reducing the impact of interest rate changes on future income. The fixed rate swap became effective in January 2016 and expires in January 2020. This interest rate swap is valued using the market standard methodology of netting the discounted expected future variable cash receipts and the discounted future fixed cash payments. The variable cash receipts are based on an expectation of future interest rates derived from observed market interest rate forward curves.

Our interest rate swap qualifies and is designated as a cash flow hedge at December 31, 2016 and accounted for under FASB ASC 815 "Derivatives and Hedging". Hedge accounting is applied only when the derivative is deemed to be highly effective at offsetting changes in fair values or anticipated cash flows of the hedged item or transaction. For hedged forecasted transactions, hedge accounting is discontinued if the forecasted transaction is no longer probable to occur, and any previously deferred gains or losses would be recorded to earnings immediately. Changes in the effective portion of the fair value of these hedges are recorded in other comprehensive income (loss). The ineffective portion, if any, of the change in the fair value of a derivative designated as a cash flow hedge is recognized in other income. Based on our current valuation, we estimate that accumulated losses currently carried in accumulated other comprehensive loss that will be reclassified into earnings over the next twelve months will result in $1.9 million of additional interest expense in our Consolidated Statements of Operations.

The following table provides a summary of the effective portion of derivative gain (loss) recognized in other comprehensive income (loss) from our interest rate swap:

Year ended December 31, (dollars in thousands)	2016	2015
Derivatives in Cash Flow Hedging relationships:		
Interest rate swap	$ (2,056)	$ (2,378)
Total	$ (2,056)	$ (2,378)

The following table provides a summary of the effective portion of the derivative reclassified from accumulated other comprehensive loss to the Consolidated Statements of Operations from our interest rate swap:

Year ended December 31, (dollars in thousands)	Location:	2016	2015
Interest rate swap	Interest expense	$ (2,399)	$ —
Total impact on net income (loss)		$ (2,399)	$ —

Interest Rate Swap as Fair Value Hedge

On June 18, 2012, we entered into an interest rate swap agreement with a notional amount of $45.0 million that was to mature in 2020. The swap agreement was executed in order to convert a portion of the fixed rate debt under the Senior Secured Notes into floating rate debt and maintain a capital structure containing fixed and floating rate debt. Upon the refinancing of the Senior Secured Notes, the swap was settled at fair value on May 9, 2014, resulting in a payment of $1.1 million. The remaining balance of the carrying value adjustment on debt related to the interest rate swap agreement was recognized as a loss in loss on redemption of debt on the Consolidated Statements of Operations. See note 6 for further discussion.

Prior to the 2014 refinancing of the Senior Secured Notes, $40.5 million of our interest rate swap agreement was designated and qualified as a fair value hedge. The change in the fair value of the derivative instrument related to the future cash flows (gain or loss on the derivative) and the offsetting change in the fair value of the hedged long-term debt attributable to the hedged risk were recognized in other income. We included the gain or loss on the hedged long-term debt, along with the offsetting loss or gain on the related interest rate swap, in other income, on the Consolidated Statements of Operations.

As of July 1, 2013, we de-designated 10 percent, or $4.5 million, of our interest rate swap. As a result, the subsequent mark-to-market of the $4.5 million portion of the swap was recorded in other income on the Consolidated Statement of Operations until settled on May 9, 2014.

The gain or loss on the hedged long-term debt netted with the offsetting gain or loss on the related designated and de-designated interest rate swap was recorded on the Consolidated Statements of Operations as follows:

Year ended December 31, (dollars in thousands)	2014
Loss on redemption of debt	$ (757)
Other income (expense)	70
Net impact	$ (687)

Currency Contracts

Our foreign currency exposure arises from transactions denominated in a currency other than the U.S. dollar primarily associated with our Canadian dollar denominated accounts receivable. From time to time, we enter into a series of foreign currency contracts to sell Canadian dollars. We had no contracts outstanding at December 31, 2016 and C$6.2 million at December 31, 2015. The fair values of these instruments are determined from market quotes. The values of these derivatives will change over time as cash receipts and payments are made and as market conditions change.

Gains (losses) on currency derivatives that were not designated as hedging instruments are recorded in other income as follows:

Year ended December 31, (dollars in thousands)	Location:	2016	2015	2014
Currency contracts	Other income (expense)	$ (245)	$ (158)	$ 403
Total		$ (245)	$ (158)	$ 403

We do not believe we are exposed to more than a nominal amount of credit risk in our interest rate swap, natural gas hedges and currency contracts as the counterparties are established financial institutions. The counterparties for the derivative agreements are rated BBB+ or better, as of December 31, 2016, by Standard and Poor's.

14. Comprehensive Income (Loss)

Accumulated other comprehensive loss, net of tax, is as follows:

(dollars in thousands)	Foreign Currency Translation	Derivative Instruments	Pension and Other Postretirement Benefits	Total Accumulated Comprehensive Loss
Balance on December 31, 2013	$ 4,554	$ 1,221	$ (78,935)	$ (73,160)
Other comprehensive income (loss)	(13,716)	(1,392)	—	(15,108)
Actuarial gain (loss)	—	—	(62,689)	(62,689)
Currency impact	—	—	4,655	4,655
Amounts reclassified from accumulated other comprehensive income (loss):				
Amortization of actuarial loss [1]	—	—	5,331	5,331
Amortization of prior service cost [1]	—	—	2,142	2,142
Amortization of transition obligation [1]	—	—	60	60
Cost of sales	—	(573)	—	(573)
Current-period other comprehensive income (loss)	(13,716)	(1,965)	(50,501)	(66,182)
Tax effect	—	119	776	895
Balance on December 31, 2014	(9,162)	(625)	(128,660)	(138,447)
Other comprehensive income (loss)	(13,751)	(4,287)	—	(18,038)
Actuarial gain (loss)	—	—	21,438	21,438
Currency impact	—	—	4,233	4,233
Amounts reclassified from accumulated other comprehensive income (loss):				
Amortization of actuarial loss [1]	—	—	9,426	9,426
Amortization of prior service cost [1]	—	—	4,652	4,652
Cost of sales	—	2,357	—	2,357
Current-period other comprehensive income (loss)	(13,751)	(1,930)	39,749	24,068
Tax effect	—	695	(6,548)	(5,853)
Balance on December 31, 2015	(22,913)	(1,860)	(95,459)	(120,232)
Other comprehensive income (loss)	(6,244)	(1,335)	—	(7,579)
Actuarial gain (loss)	—	—	(10,560)	(10,560)
Currency impact	—	—	1,271	1,271
Amounts reclassified from accumulated other comprehensive income (loss):				
Amortization of actuarial loss [1]	—	—	5,088	5,088
Amortization of prior service cost [1]	—	—	196	196
Cost of sales	—	1,129	—	1,129
Interest expense	—	2,399	—	2,399
Current-period other comprehensive income (loss)	(6,244)	2,193	(4,005)	(8,056)
Tax effect	1,329	(848)	2,610	3,091
Balance on December 31, 2016	$ (27,828)	$ (515)	$ (96,854)	$ (125,197)

[1] These accumulated other comprehensive income components are included in the computation of net periodic benefit cost within the cost of sales and selling, general and administrative expenses on the Consolidated Statements of Operations.

15. Fair Value

FASB ASC 820 defines fair value as the price that would be received to sell an asset or paid to transfer a liability in the principal or most advantageous market for the asset or liability in an orderly transaction between market participants at the measurement date. FASB ASC 820 establishes a fair value hierarchy that prioritizes the inputs used in measuring fair value into three broad levels as follows:

- Level 1 — Quoted prices in active markets for identical assets or liabilities.
- Level 2 — Inputs, other than the quoted prices in active markets, that are observable either directly or indirectly.
- Level 3 — Unobservable inputs based on our own assumptions.

The fair value of our derivative financial instruments by level is as follows:

Asset / (Liability) (dollars in thousands)	Fair Value at December 31, 2016				Fair Value at December 31, 2015			
	Level 1	Level 2	Level 3	Total	Level 1	Level 2	Level 3	Total
Commodity futures natural gas contracts	$ —	$ 1,508	$ —	$ 1,508	$ —	$ (2,202)	$ —	$ (2,202)
Currency contracts	—	—	—	—	—	245	—	245
Interest rate swap	—	(2,035)	—	(2,035)	—	(2,378)	—	(2,378)
Net derivative asset (liability)	$ —	$ (527)	$ —	$ (527)	$ —	$ (4,335)	$ —	$ (4,335)

The fair values of our commodity futures natural gas contracts and currency contracts are determined using observable market inputs. The fair value of our interest rate agreement is based on the market standard methodology of netting the discounted expected future variable cash receipts and the discounted future fixed cash payments. The variable cash receipts are based on an expectation of future interest rates derived from observed market interest rate forward curves. Since these inputs are observable in active markets over the terms that the instruments are held, the derivatives are classified as Level 2 in the hierarchy. We also evaluate Company and counterparty risk in determining fair values. The commodity futures natural gas contracts, interest rate swap and currency contracts are hedges of either recorded assets or liabilities or anticipated transactions. Changes in values of the underlying hedged assets and liabilities or anticipated transactions are not reflected in the above table.

The total derivative position is recorded on the Consolidated Balance Sheets as follows:

Asset / (Liability) (dollars in thousands)	December 31, 2016	December 31, 2015
Prepaid and other current assets	$ 1,434	$ 245
Other assets	74	—
Derivative liability	(1,928)	(4,265)
Other long-term liabilities	(107)	(315)
Net derivative asset (liability)	$ (527)	$ (4,335)

Financial instruments carried at cost on the Consolidated Balance Sheets, as well as the related fair values, are as follows:

(dollars in thousands)	Fair Value Hierarchy Level	December 31, 2016		December 31, 2015	
		Carrying Amount	Fair Value	Carrying Amount	Fair Value
Term Loan B	Level 2	$ 409,000	$ 412,068	$ 433,400	$ 425,815

The fair value of our Term Loan B has been calculated based on quoted market prices for the same or similar issues. The fair value of our other immaterial debt approximates carrying value at December 31, 2016 and 2015. The fair value of our cash and cash equivalents, accounts receivable and accounts payable approximate their carrying value due to their short term nature.

16. Operating Leases

Rental expense for all non-cancelable operating leases, primarily for warehouses, was $17.6 million, $17.5 million and $19.6 million for the years ended December 31, 2016, 2015 and 2014, respectively.

Future minimum rentals under operating leases are as follows (dollars in thousands):

2017	2018	2019	2020	2021	2022 and thereafter
$14,491	$13,525	$12,302	$11,295	$8,721	$35,991

17. Other Income

Items included in other income in the Consolidated Statements of Operations are as follows:

Year ended December 31, (dollars in thousands)	2016	2015	2014
Gain (loss) on currency transactions	$ 775	$ 2,641	$ 1,905
Hedge ineffectiveness	1,860	218	(1,247)
Other non-operating income	727	21	1,693
Other income	$ 3,362	$ 2,880	$ 2,351

18. Contingencies

Legal Proceedings

From time to time, we are identified as a "potentially responsible party" (PRP) under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) and/or similar state laws that impose liability without regard to fault for costs and damages relating to the investigation and clean-up of contamination resulting from releases or threatened releases of hazardous substances. We are also subject to similar laws in some of the countries where our facilities are located. Our environmental, health, and safety department monitors compliance with applicable laws on a global basis.

On October 30, 2009, the United States Environmental Protection Agency ("U.S. EPA") designated Syracuse China Company ("Syracuse China"), our wholly-owned subsidiary, as one of eight PRPs with respect to the Lower Ley Creek sub-site of the Onondaga Lake Superfund site located near the ceramic dinnerware manufacturing facility that Syracuse China operated from 1995 to 2009 in Syracuse, New York. As a PRP, we may be required to pay a share of the costs of investigation and remediation of the Lower Ley Creek sub-site.

U.S. EPA has completed its Remedial Investigation (RI), Feasibility Study (FS), Risk Assessment (RA) and Proposed Remedial Action Plan (PRAP). U.S. EPA issued its Record of Decision (RoD) on September 30, 2014. The RoD indicates that U.S. EPA's estimate of the undiscounted cost of remediation ranges between approximately $17.0 million (assuming local disposal of contaminated sediments is feasible) and approximately $24.8 million (assuming local disposal is not feasible). However, the RoD acknowledges that the final cost of the cleanup will depend upon the actual volume of contaminated material, the degree to which it is contaminated, and where the excavated soil and sediment is properly disposed. In connection with the General Motors Corporation bankruptcy, U.S. EPA recovered $22.0 million from Motors Liquidation Company (MLC), the successor to General Motors Corporation. If the cleanup costs do not exceed the amount recovered by U.S. EPA from MLC, Syracuse China may suffer no loss. If and to the extent the cleanup costs exceed the amount recovered by U.S. EPA from MLC, it is not yet known whether other PRPs will be added to the current group of PRPs or how any excess costs may be allocated among the PRPs.

On March 3, 2015, the EPA issued to the PRPs notices and requests to negotiate performance of the remedial design (RD), work. The notices contemplate that any agreement to perform the RD work would be memorialized in an Administrative Order on Consent (AOC). On July 14, 2016, the PRPs entered into an AOC to perform the RD work. The EPA and PRPs anticipate that the RD work will produce additional information from which the feasibility of a local disposal option and the cleanup costs can be better determined. The EPA has declined to advance the GM Settlement Funds for the RD work, instead conditioning use of those funds to reimburse for the RD work upon the successful completion of the RD work and the finalization of an AOC to perform the remedial action work.

To the extent that Syracuse China has a liability with respect to the Lower Ley Creek sub-site, including without limitation costs to fund the RD work, and to the extent the liability arose prior to our 1995 acquisition of the Syracuse China assets, the liability would be subject to the indemnification provisions contained in the Asset Purchase Agreement between the Company and The Pfaltzgraff Co. (now known as TPC-York, Inc. ("TPC York")) and certain of its subsidiaries. Accordingly, Syracuse China has notified TPC York of its claim for indemnification under the Asset Purchase Agreement.

In connection with the above proceedings, an estimated environmental liability of $0.9 million and a recoverable amount of $0.5 million in other long term assets have been recorded in the Consolidated Balance Sheet at December 31, 2016. An estimated liability of $1.1 million and a recoverable amount of $0.6 million in other long term assets have been recorded in the Consolidated Balance Sheet at December 31, 2015. An immaterial amount, $0.2 million and $0.3 million have been recorded in cost of sales in the Consolidated Statements of Operations for the years ended December 31, 2016, 2015 and 2014, respectively. Although we cannot predict the ultimate outcome of this proceeding, we believe that it will not have a material adverse impact on our financial condition, results of operations or liquidity.

Insurance claim

In September of 2013, Libbey had a furnace malfunction at our manufacturing facility in Toledo, Ohio, resulting in an insurance claim with the final settlement received in the fourth quarter of 2014. The total reimbursement for the claim and related expenses was $15.7 million. $5.0 million was recognized in 2013 in accounts receivable and received in the first quarter of 2014. The remaining $10.7 million was received in the fourth quarter of 2014 and recognized as a reduction to cost of sales in the Consolidated Statements of Operations for business interruption. On the Consolidated Statements of Cash Flows for the year ended December 31, 2014, $2.4 million was recorded as an investing activity and $13.3 million was recorded as cash from operations.

Income Taxes

The Company and its subsidiaries are subject to examination by various countries' tax authorities. These examinations may lead to proposed or assessed adjustments to our taxes. Please refer to note 8, Income Taxes, for a detailed discussion on tax contingencies.

19. Segments and Geographic Information

Our reporting segments align with our regionally focused organizational structure, which we believe enables us to better serve customers across the globe. Under this structure, we report financial results for U.S. and Canada; Latin America; Europe, the Middle East and Africa (EMEA); and Other. Sales and Segment EBIT are based on the geographical destination of the sale. Our three reportable segments are defined below. Our operating segment that does not meet the criteria to be a reportable segment is disclosed as Other.

U.S. & Canada—includes sales of manufactured and sourced tableware having an end market destination in the U.S and Canada, excluding glass products for Original Equipment Manufacturers (OEM), which remain in the Latin America segment.

Latin America—includes primarily sales of manufactured and sourced glass tableware having an end market destination in Latin America including glass products for OEMs that have an end market destination outside of Latin America.

EMEA—includes primarily sales of manufactured and sourced glass tableware having an end market destination in Europe, the Middle East and Africa.

Other—includes primarily sales of manufactured and sourced glass tableware having an end market destination in Asia Pacific.

Our measure of profit for our reportable segments is Segment Earnings before Interest and Taxes (Segment EBIT) and excludes amounts related to certain items we consider not representative of ongoing operations as well as certain retained corporate costs and other allocations that are not considered by management when evaluating performance. We use Segment EBIT, along with net sales and selected cash flow information, to evaluate performance and to allocate resources. Segment EBIT for reportable segments includes an allocation of some corporate expenses based on the costs of services performed.

Certain activities not related to any particular reportable segment are reported within retained corporate costs. These costs include certain headquarter, administrative and facility costs, and other costs that are global in nature and are not allocable to the reporting segments.

The accounting policies of the reportable segments are the same as those described in note 2. We do not have any customers who represent 10 percent or more of total sales. Inter-segment sales are consummated at arm’s length and are reflected at end market reporting below. It is impracticable to provide revenue by product categories.

Year ended December 31, (dollars in thousands)	2016	2015	2014
Net Sales:			
U.S. & Canada	$ 488,162	$ 497,728	$ 482,094
Latin America	151,406	167,069	190,079
EMEA	119,750	122,664	147,587
Other	34,102	34,884	32,732
Consolidated	$ 793,420	$ 822,345	$ 852,492
Segment EBIT:			
U.S. & Canada	$ 77,916	$ 80,406	$ 72,546
Latin America	10,731	22,017	32,909
EMEA	(1,002)	1,251	5,726
Other	915	4,390	2,378
Total Segment EBIT	$ 88,560	$ 108,064	$ 113,559
Reconciliation of Segment EBIT to Net Income:			
Segment EBIT	$ 88,560	$ 108,064	$ 113,559
Retained corporate costs	(27,265)	(34,645)	(30,558)
Loss on redemption of debt (note 6)	—	—	(47,191)
Pension settlement charges (note 9)	(168)	(21,693)	(774)
Furnace malfunction (note 18)	—	—	4,782
Environmental obligation (note 18)	—	(157)	(315)
Restructuring charges (note 7)	—	—	(985)
Product portfolio optimization [1]	(5,693)	—	—
Reorganization charges [2]	—	(4,316)	—
Derivatives [3]	1,860	218	(1,247)
Work stoppage [4]	(4,162)	—	—
Executive terminations	(4,460)	(870)	(875)
Interest expense	(20,888)	(18,484)	(22,866)
(Provision) benefit for income taxes	(17,711)	38,216	(8,567)
Net income	$ 10,073	$ 66,333	$ 4,963
Depreciation & Amortization:			
U.S. & Canada	$ 12,748	$ 12,214	$ 10,319
Latin America	19,068	14,738	12,562
EMEA	9,377	8,510	10,061
Other	5,588	5,855	6,179
Corporate	1,705	1,395	1,267
Consolidated	$ 48,486	$ 42,712	$ 40,388
Capital Expenditures:			
U.S. & Canada	$ 10,671	$ 25,106	$ 21,927
Latin America	11,032	11,944	22,517
EMEA	7,571	6,773	6,471
Other	2,905	1,855	1,983
Corporate	2,425	2,458	1,495
Consolidated	$ 34,604	$ 48,136	$ 54,393

(1) Product portfolio optimization relates to inventory reductions to simplify and improve our operations.

(2) Management reorganization to support our growth strategy.

(3) Derivatives relate to hedge ineffectiveness on our natural gas contracts and interest rate swap, as well as, mark-to-market adjustments on our natural gas contracts that have been de-designated and those for which we did not elect hedge accounting.

(4) Work stoppage relates to the lower production volume impact, shipping costs and other direct incremental expenses associated with the two-week Toledo, Ohio work stoppage in the fourth quarter of 2016.

December 31, (dollars in thousands)	2016	2015	2014
Segment Assets[1]:			
U.S. & Canada	$ 130,390	$ 140,840	$ 129,676
Latin America	63,838	68,599	66,726
EMEA	44,588	48,924	48,557
Other	16,306	14,043	15,975
Consolidated	$ 255,122	$ 272,406	$ 260,934

[1] Segment assets are defined as net accounts receivable plus net inventory.

Net sales to customers and long-lived assets located in the U.S., Mexico, and Other regions for 2016, 2015 and 2014 are presented below. Intercompany sales to affiliates represent products that are transferred to those geographic areas on a basis intended to reflect as nearly as possible the market value of the products. The long-lived assets include net property, plant and equipment.

(dollars in thousands)	United States	Mexico	All Other	Eliminations	Consolidated
2016					
Net sales:					
Customers	$ 478,342	$ 100,829	$ 214,249		$ 793,420
Intercompany	57,760	15,563	35,407	$ (108,730)	—
Total net sales	$ 536,102	$ 116,392	$ 249,656	$ (108,730)	$ 793,420
Long-lived assets	$ 91,834	$ 89,963	$ 74,595	$ —	$ 256,392
2015					
Net sales:					
Customers	$ 488,582	$ 107,386	$ 226,377		$ 822,345
Intercompany	68,388	11,573	37,612	$ (117,573)	—
Total net sales	$ 556,970	$ 118,959	$ 263,989	$ (117,573)	$ 822,345
Long-lived assets	$ 94,206	$ 93,573	$ 84,755	$ —	$ 272,534
2014					
Net sales:					
Customers	$ 465,820	$ 126,699	$ 259,973		$ 852,492
Intercompany	80,525	14,960	35,058	$ (130,543)	—
Total net sales	$ 546,345	$ 141,659	$ 295,031	$ (130,543)	$ 852,492
Long-lived assets	$ 82,702	$ 97,960	$ 97,316	$ —	$ 277,978

Selected Quarterly Financial Data (unaudited)

The following table presents selected quarterly financial data for the years ended December 31, 2016 and 2015:

(dollars in thousands, except per-share amounts)	First Quarter		Second Quarter		Third Quarter		Fourth Quarter	
	2016	2015	2016	2015	2016	2015	2016	2015 [(a)]
Net sales	$ 182,807	$ 187,365	$ 207,902	$ 214,051	$ 196,873	$ 201,784	$ 205,838	$ 219,145
Gross profit	$ 39,974	$ 42,495	$ 50,411	$ 56,890	$ 41,882	$ 47,691	$ 34,027	$ 29,252
Net income (loss)	$ 718	$ 3,112	$ 8,695	$ 14,394	$ 2,909	$ 16,719	$ (2,249)	$ 32,108
Earnings (loss) per share:								
Basic	$ 0.03	$ 0.14	$ 0.40	$ 0.66	$ 0.13	$ 0.77	$ (0.10)	$ 1.47
Diluted	$ 0.03	$ 0.14	$ 0.40	$ 0.65	$ 0.13	$ 0.75	$ (0.10)	$ 1.45

(a) The fourth quarter of 2015 includes a tax benefit of $43.8 million related to management's decision that a valuation allowance against its U.S. deferred tax assets was no longer necessary.

Libbey Inc.

Schedule II -- Valuation and Qualifying Accounts
Years ended December 31, 2016, 2015 and 2014

(dollars in thousands)	Allowance for Doubtful Accounts & Discounts	Valuation Allowance for Deferred Tax Asset
Balance at December 31, 2013	$ 5,846	$ 46,048
Charged to expense or other accounts	1,040	21,420
Deductions	(1,300) [1]	(982) [2]
Balance at December 31, 2014	5,586	66,486
Charged to expense or other accounts	2,719	6,093
Deductions	(1,239) [1]	(61,395) [2]
Balance at December 31, 2015	7,066	11,184
Charged to expense or other accounts	1,118	2,589
Deductions	(352) [1]	— [2]
Balance at December 31, 2016	$ 7,832	$ 13,773

(1) Uncollectible accounts written off, net of recoveries.

(2) The net decrease in valuation allowance is primarily a result of net changes in cumulative book/tax timing differences and, with respect to activity for the year ended December 31, 2015, changes in judgment regarding the realizability of U.S. deferred tax assets.

Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure

None.

Item 9A. Controls and Procedures

The Company maintains disclosure controls and procedures that are designed to ensure that information required to be disclosed in the Company's Securities Exchange Act of 1934 (the "Exchange Act") reports are recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission's rules and forms and that such information is accumulated and communicated to the Company's management, including its Chief Executive Officer and Interim Chief Financial Officer, as appropriate, to allow for timely decisions regarding required disclosure. In designing and evaluating the disclosure controls and procedures, management recognizes that any controls and procedures, no matter how well-designed and operated, can provide only reasonable assurance of achieving the desired control objectives, and management is required to apply its judgment in evaluating the cost-benefit relationship of possible controls and procedures.

As required by SEC Rule 13a-15(b), the Company carried out an evaluation, under the supervision and with the participation of the Company's management, including the Company's Chief Executive Officer and the Company's Interim Chief Financial Officer, of the effectiveness of the design and operation of the Company's disclosure controls and procedures as of the end of the period covered by this report. Based on the foregoing, the Company's Chief Executive Officer and Interim Chief Financial Officer concluded that the Company's disclosure controls and procedures were effective at the reasonable assurance level.

Report of Management

The management of the Company is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting refers to the process designed by, or under the supervision of, our Chief Executive Officer and Interim Chief Financial Officer, and effected by our board of directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with U.S. generally accepted accounting principles, and 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 U.S. 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.

Internal control over financial reporting cannot provide absolute assurance of achieving financial reporting objectives because of its inherent limitations. Internal control over financial reporting is a process that involves human diligence and compliance and is subject to lapses in judgment and breakdowns resulting from human failures. Internal control over financial reporting also can be circumvented by collusion or improper management override. Because of such limitations, there is a risk that material misstatements may not be prevented or detected on a timely basis by internal control over financial reporting. However, these inherent limitations are known features of the financial reporting process. Therefore, it is possible to design into the process safeguards to reduce, though not eliminate, this risk. Management is responsible for establishing and maintaining adequate internal control over financial reporting for the Company.

Management has assessed the effectiveness of the Company's internal control over financial reporting as of December 31, 2016. In making this assessment management used the criteria for effective internal control over financial reporting as described in "Internal Control - Integrated Framework" issued by the Committee of Sponsoring Organizations (COSO) of the Treadway Commission (the COSO framework) in 2013. Management has concluded that the Company's internal control over financial reporting was effective as of the end of the most recent fiscal year. The Company's independent registered public accounting firm, Deloitte & Touche LLP, that audited the Company's Consolidated Financial Statements, has issued an attestation report on the Company's internal control over financial reporting.

Changes in Internal Control

There has been no change in the Company's internal controls over financial reporting during the Company's most recent fiscal quarter that has materially affected, or is reasonably likely to materially affect, the Company's internal controls over financial reporting.

Item 9B. Other Information

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

Information with respect to executive officers of Libbey is incorporated herein by reference to Item 1 of this report under the caption “Executive Officers of the Registrant.” Information with respect to directors of Libbey is incorporated herein by reference to the information set forth under the caption “Libbey Corporate Governance-Who are the members of our Board of Directors?” in the Proxy Statement. Certain information regarding compliance with Section 16(a) of the Exchange Act is incorporated herein by reference to the information set forth under the caption “Stock Ownership” in the Proxy Statement. Information with respect to the Audit Committee members, the Audit Committee financial experts, and material changes in the procedures by which shareholders can recommend nominees to the Board of Directors is incorporated herein by reference to the information set forth under the captions “Libbey Corporate Governance-Who are the members of our Board of Directors?”, “- What are the roles of the Board's committees?” and “- How does our Board select nominees for the Board?” in the Proxy Statement.

Libbey's Code of Business Ethics and Conduct applicable to its Directors, Officers (including Libbey's principal executive officer and principal financial and accounting officer) and employees, as well as the Audit Committee Charter, Nominating and Governance Committee Charter, Compensation Committee Charter and Corporate Governance Guidelines are posted on Libbey's website at www.libbey.com. Libbey's Code of Business Ethics and Conduct is also available to any shareholder who submits a request in writing addressed to Susan A. Kovach, Vice President, General Counsel and Secretary, Libbey Inc., 300 Madison Avenue, P.O. Box 10060, Toledo, Ohio 43699-0060. If Libbey amends or waives any of the provisions of the Code of Business Ethics and Conduct applicable to the principal executive officer or principal financial and accounting officer, Libbey intends to disclose the subsequent information on Libbey's website.

Item 11. Executive Compensation

Information regarding executive compensation is incorporated herein by reference to the information set forth under the caption “Compensation Discussion and Analysis” in the Proxy Statement.

Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters

Information regarding security ownership of certain beneficial owners and management is incorporated herein by reference to the information set forth under the captions “Stock Ownership - Who are the largest owners of Libbey stock?” and “-How much stock do our directors and officers own?” in the Proxy Statement.

Equity Compensation Plan Information

Following are the number of securities and weighted average exercise price thereof under our compensation plans approved and not approved by security holders as of December 31, 2016:

Plan Category	Number of Securities to be Issued Upon Exercise of Outstanding Options and Rights [1]	Weighted Average Exercise Price of Outstanding Options and Rights	Number of Securities Remaining Available for Future Issuance Under Equity Compensation Plans
Equity compensation plans approved by security holders	991,747	$ 19.17	1,666,373
Equity compensation plans not approved by security holders	—	—	—
Total	991,747	$ 19.17	1,666,373

(1) This number includes 346,524 restricted stock units awarded under Libbey's equity compensation plans.

Item 13. Certain Relationships and Related Transactions and Director Independence

Information regarding certain relationships and related transactions and director independence is incorporated herein by reference to the information set forth under the caption “Libbey Corporate Governance-Certain Relationships and Related Transactions - What transactions involved directors or other related parties?” and “-How does our Board determine which directors are considered independent?” in the Proxy Statement.

Item 14. Principal Accounting Fees and Services

Information regarding principal accounting fees and services is incorporated herein by reference to the information set forth under the caption “Audit-Related Matters - Who are Libbey's auditors?” and “-What fees did Libbey pay to its auditors for Fiscal 2016 and 2015?” in the Proxy Statement.

PART IV

Item 15. Exhibits and Financial Statement Schedules

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

1. Consolidated financial statements:

	Page Number in Form 10-K
Reports of Independent Registered Public Accounting Firms	47
Consolidated Balance Sheets at December 31, 2016 and 2015	50
For the years ended December 31, 2016, 2015 and 2014:	
Consolidated Statements of Operations	51
Consolidated Statements of Comprehensive Income (Loss)	52
Consolidated Statements of Shareholders' Equity	53
Consolidated Statements of Cash Flows	54
Notes to Consolidated Financial Statements	55
Selected Quarterly Financial Data (unaudited)	91

2. Financial Statement Schedule:

Schedule II - Valuation and Qualifying Accounts	92

All other schedules have been omitted since the required information is not present or not present in amounts sufficient to require submission of the schedule or because the information required is included in the Consolidated Financial Statements or the accompanying notes.

3. Exhibit Index

The documents listed in the Exhibit Index of the online Form 10-K at www.sec.gov are filed or incorporated by reference as part of this report.

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 registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

Libbey Inc.

By: /s/ Veronica L. Smith
Veronica L. Smith
Interim Chief Financial Officer, Vice President, Corporate Controller and Assistant Treasurer

Date: March 3, 2017

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 registrant and in the capacities indicated.

Signature	**Title**
William A. Foley	Chief Executive Officer & Chairman of the Board of Directors
John C. Orr	Lead Director
Carol B. Moerdyk	Director
Carlos V. Duno	Director
Deborah G. Miller	Director
Ginger M. Jones	Director
Eileen A. Mallesch	Director

By: /s/ Veronica L. Smith
Veronica L. Smith
Attorney-In-Fact

Date: March 3, 2017

/s/ Veronica L. Smith
Veronica L. Smith
Interim Chief Financial Officer, Vice President, Corporate Controller and Assistant Treasurer
(Principal Accounting Officer)

Date: March 3, 2017

EXHIBIT 31.1

Certification of Chief Executive Officer

Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, William A. Foley, certify that:

1. I have reviewed this annual report on Form 10-K of Libbey 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: March 3, 2017

By: /s/ William A. Foley
William A. Foley
Chief Executive Officer & Chairman of the Board

EXHIBIT 31.2

Certification of Interim Chief Financial Officer

Pursuant to Section 302 of the Sarbanes-Oxley Act of 2002

I, Veronica L. Smith, certify that:

1. I have reviewed this annual report on Form 10-K of Libbey 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: March 3, 2017

By: /s/ Veronica L. Smith
Veronica L. Smith
Interim Chief Financial Officer, Vice President,
Corporate Controller and Assistant Treasurer

EXHIBIT 32.1

Certification Pursuant to 18 U.S.C. Section 1350

Pursuant to 18 U.S.C. § 1350, as created by Section 906 of the Sarbanes-Oxley Act of 2002, the undersigned officers of Libbey Inc. (the "Company") hereby certify, to such officers' knowledge, that:

(i) the accompanying Annual Report on Form 10-K of the Company for the year ended December 31, 2016 (the "Report") fully complies with the requirements of Section 13(a) or Section 15(d), as applicable, of the Securities Exchange Act of 1934, as amended; and

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

Date: March 3, 2017

By: /s/ William A. Foley
William A. Foley
Chief Executive Officer & Chairman of the Board

/s/ Veronica L. Smith
Veronica L. Smith
Interim Chief Financial Officer, Vice President, Corporate Controller and Assistant Treasurer

CORPORATE HEADQUARTERS

Libbey Inc.
300 Madison Avenue
Toledo, Ohio 43604
419-325-2100
www.libbey.com

TRANSFER AGENT AND REGISTRAR

Computershare
P. O. Box 30170
College Station, Texas 77842-3170

Overnight correspondence should be sent to:
Computershare
211 Quality Circle, Suite 210
College Station, Texas 77845

For shareholder inquires, call 866-252-0125
www.computershare.com/investor

AUDITORS

Deloitte & Touche LLP are the independent auditors for the Company.

FORM 10-K

Copies of the Company's Annual Report on Form 10-K are available at no charge through the Company's website: www.libbey.com. In addition, the Company will provide without charge to any person who is a beneficial owner of its shares a copy of Libbey's 2016 Annual Report on Form 10-K as filed with the Securities and Exchange Commission.

Requests should be addressed to:
Libbey Inc. Investor Relations
300 Madison Avenue
Toledo, Ohio 43604
Email: stock@libbey.com

ANNUAL MEETING

The annual shareholders meeting of Libbey Inc. will be held at 2:00 p.m. on May 17, 2017, in Toledo, Ohio, at:
Libbey Corporate Showroom
335 N. St. Clair Street
Toledo, Ohio 43604

STOCK EXCHANGE

Libbey Inc. stock is listed for trading on the New York Stock Exchange under NYSE MKT: LBY.

DIVIDENDS

The Company pays a regular quarterly cash dividend. The declaration of future dividends is within the discretion of the Board of Directors of the Company.

STOCK PURCHASE AND SALE PLAN

Computershare, the Transfer Agent for Libbey Inc., has made available a Direct Stock Purchase and Sale Plan. The Plan provides registered shareholders and interested first-time investors the opportunity to purchase and sell shares of the Company's common stock, reinvest dividends and deposit their certificates into the Plan for safekeeping. Existing shareholders and interested investors can request enrollment material by calling Computershare at 866-252-0125; international number at 201-680-6578. Shareholder questions and requests for forms are also available by visiting the following website: www.computershare.com/investor.

ADDITIONAL INFORMATION

For additional information, contact:
Kimberly A. Hunter, Treasurer and VP, Investor Relations

Libbey Inc.
300 Madison Avenue
Toledo, Ohio 43604
419-325-2612

Or visit our website at www.libbey.com

LIBBEY®

HEADQUARTERS

Libbey Inc.
300 Madison Avenue
Toledo, Ohio 43604

419.325.2100

www.libbey.com

USC REGION

Libbey Inc.
300 Madison Avenue
Toledo, Ohio 43604

Toledo Plant
940 Ash Street
Toledo, Ohio 43611

Shreveport Plant
4302 Jewella Road
Shreveport, Louisiana
71109

LATAM REGION

Crisa
Jose Maria Vigil 400
Col. Del Norte
Monterrey, Nuevo León
CP 64500
Mexico

EMEA REGION

Royal Leerdam
Lingedijk 8
4142 LD Leerdam
Netherlands

Crisal Cristalaria
Automatica, S.A.
Rua de Portugal
Lote 1, Apartado 233
Zona Industrial da
Marinha Grande
2431-903 Marinha Grande
Portugal

ASIA-PACIFIC REGION

Libbey Glassware
(China) Co., Ltd.
#2211 Aimin Road East
Langfang Economic
and Technical
Development Zone
Hebei Province
P.R. China, P.C. 065001

LIBBEY®