



*2016 Annual Report and Form 10-K*

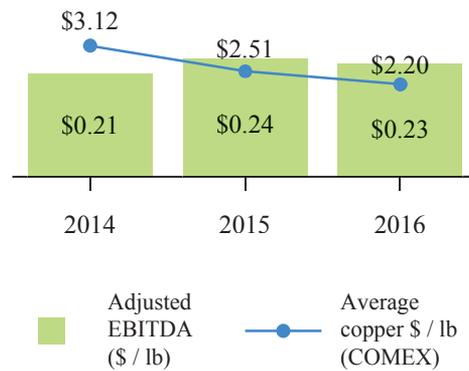
## Performance Highlights

(in millions, except per pound and share data)

### Adjusted EBITDA\*



### Adjusted EBITDA (\$ / lb)\*



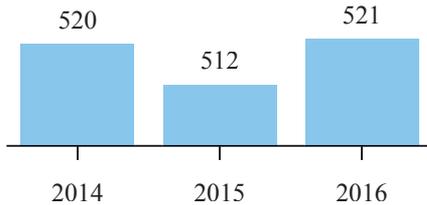
### Adjusted Sales\*



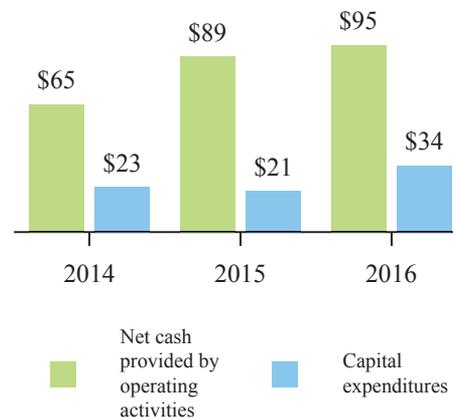
### Adjusted Diluted Earnings per Common Share\*



### Pounds Shipped



### Cash Flow Trends



#### \*USE OF NON-GAAP FINANCIAL INFORMATION

Adjusted EBITDA, adjusted sales and adjusted diluted earnings per common share are non-GAAP financial measures. We present these non-GAAP financial measures as supplemental measures of performance. For more information regarding our use of adjusted EBITDA, adjusted sales and adjusted diluted earnings per common share, including the reconciliations to the most directly comparable GAAP financial measures, see Item 7, "Management's Discussion and Analysis of Financial Condition and Results of Operations - Management's View of Performance," in the enclosed Annual Report on Form 10-K for the year ended December 31, 2016.

**April 2017**

Dear Fellow Shareholders:

2016 was a significant year for Global Brass and Copper. Along with delivering solid financial results, we refinanced our debt, which represents a key milestone in the strategic evolution of our company and provides greater flexibility to grow through organic growth initiatives and acquisitions. We grew our volumes, improved our margins, and generated strong cash flow, all while overcoming a production outage in the second quarter. We made solid progress in creating value for our customers, improving our cost profile through productivity and product yield, and driving commercial pricing strategies taking into account the magnitude of the working capital and assets and the complexity of the operating activities required to convert them. The market continued to notice our strong performance as our stock appreciated 61% in 2016 (including reinvested dividends), and outperformed the Russell 2000 index, which appreciated 20% in the same period.

The dedicated efforts and teamwork of GBC employees was critical to achieving our 2016 results and positioning the company for future success. Olin Brass focused on supply chain and manufacturing excellence initiatives to reduce costs, increase productivity, reduce inventory levels in the overall supply chain, and strengthen our customer relationships amidst a six-week production outage. Their work continued to drive significant improvements in on-time delivery performance, which creates tremendous value for their customers. Chase Brass executed on its commercial strategies with another year of strong growth in its green product portfolio, while maintaining exceptional quality and service levels. A.J. Oster's growth and pricing initiatives continued to deliver strong results, growing both the top and bottom line.

We achieved these results by focusing on our core principles: driving commercial pricing, employing our balanced book philosophy and executing asset management strategies. Our strategic pricing efforts are focused on enhancing long-term profitability, which enables us to be long-term strategic partners with our customers. Our balanced book philosophy continues to play a key role in insulating and stabilizing our margins in a volatile metals pricing environment. For example, copper prices appreciated 17%, and yet we maintained steady margins because we are a metals converter, not a metals producer. Our strong cash flow generation coupled with our financial flexibility has positioned us to drive growth through our organic initiatives and acquisitions. Additionally, the successful refinancing of our debt improved our cash flow and strengthened our competitive position by rightsizing our capital structure.

In 2017, we will continue to employ our commercial pricing efforts, balanced book philosophy and asset management strategies to drive sustainable, profitable growth. We believe that executing on these core strategies will create unique value for our customers, future value for our shareholders, and strengthen our market leadership as a non-ferrous metals converter and service provider. We will continue to drive our organic growth initiatives while also looking for acquisition targets that meet an appropriate rate of return. Finally, in January, A.J. Oster went live on its fully integrated ERP system, while Olin Brass completed an upgrade to its information technology systems. Moving forward, we will focus on embracing technology to become more agile, delivering the best supply chain, and winning with the differentiating power of our people.

I would like to thank you, our shareholders, for your continued confidence and investment in our company.

Sincerely,



John J. Wasz  
President and Chief Executive Officer



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

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**FORM 10-K**

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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

For the transition period from \_\_\_\_\_ to \_\_\_\_\_

Commission File No. 001-35938

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**GLOBAL BRASS AND COPPER HOLDINGS, INC.**  
(Exact name of registrant as specified in its charter)

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Delaware (State or other jurisdiction of incorporation or organization)	06-1826563 (I.R.S. Employer Identification Number)
475 N. Martingale Road Suite 1050 Schaumburg, IL (Address of principal executive offices)	60173 (Zip Code)
(847) 240-4700 (Registrant's telephone number, including area code)	

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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.

Large accelerated filer	<input type="checkbox"/>	Accelerated filer	<input checked="" type="checkbox"/>
Non-accelerated filer	<input type="checkbox"/> (Do not check if a smaller reporting company)	Smaller reporting company	<input type="checkbox"/>

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 of the registrant's common stock held by non-affiliates of the registrant on June 30, 2016, the last business day of the registrant's most recently completed second fiscal quarter, was approximately \$575.3 million (based upon the closing price per share of the registrant's common stock on the New York Stock Exchange on that date).

On February 23, 2017, there were 21,671,338 shares of common stock outstanding.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the Registrant's definitive Proxy Statement, which will be filed with the Securities and Exchange Commission within 120 days after December 31, 2016, are incorporated by reference in Part III of this Form 10-K.

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## PART I

### Item 1. Business.

#### *Our Company*

Global Brass and Copper Holdings, Inc. (“Holdings,” the “Company,” “we,” “us,” or “our”) was incorporated in Delaware on October 10, 2007. Holdings, through its wholly-owned principal operating subsidiary, Global Brass and Copper, Inc. (“GBC”), commenced commercial operations on November 19, 2007 following the acquisition of the metals business from Olin Corporation. The majority of our operations are managed through three reportable operating segments: Olin Brass, Chase Brass and A.J. Oster. We also have a Corporate entity which includes certain administrative costs and expenses and the elimination of intercompany balances. Our sales activities are primarily focused in North America under the Olin Brass, Chase Brass and A.J. Oster brand names.

We are a leading, value-added converter, fabricator, processor and distributor of specialized non-ferrous products, including a wide range of sheet, strip, foil, rod, tube and fabricated metal component products. While we primarily process copper and copper alloys, we also reroll and form certain other metals such as stainless steel, carbon steel and aluminum. Using processed scrap, virgin metals and other refined metals, we engage in metal melting and casting, rolling, drawing, extruding, welding and stamping to fabricate finished and semi-finished alloy products. Key attributes of copper and copper alloys are conductivity, corrosion resistance, strength, malleability, cosmetic appearance and bactericidal properties.

Our products are used in a variety of applications across diversified markets, including the building and housing, munitions, automotive, transportation, coinage, electronics / electrical components, industrial machinery and equipment and general consumer markets. We access these markets through direct mill sales, our captive distribution network and third-party distributors. We hold the exclusive production and distribution rights in North America for a lead-free brass rod product, which we sell under the Green Dot<sup>®</sup> and Eco Brass<sup>®</sup> brand names. The vertical integration of Olin Brass’s manufacturing capabilities and A.J. Oster’s distribution capabilities allows us to access customers with a wide variety of volume and service needs.

We service nearly 1,600 customers in 28 countries across four continents. We employ approximately 1,850 people and operate 11 manufacturing facilities and distribution centers across the United States (“U.S.”), Puerto Rico and Mexico.

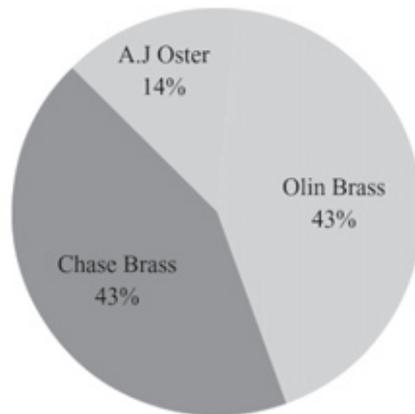
We own 80% of a value-added service center in Guangzhou, China (“Olin Luotong Metals” or “OLM”); the other 20% is owned by Chinalco Luoyang Copper Co. Ltd. (“Chinalco”). Through Olin Luotong Metals, together with our sales offices in China and Singapore, we supply our products in China and throughout Asia.

Unlike traditional metals companies, in particular those that engage in mining, smelting and refining activities, we are purely a metal converter, fabricator, processor and distributor, and we do not attempt to generate profits from fluctuations in metal prices. Our financial performance is primarily driven by metal conversion economics, not by the underlying movements in the price of copper and the other metals we use. Through our “balanced book” approach (as further described under “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Business Principles Affecting Our Results of Operations —Balanced Book”), we strive to match the timing, quantity and price of our metal sales with the timing, quantity and price of our replacement metal purchases. This practice, along with our toll processing operations and last-in, first-out (“LIFO”) inventory accounting methodology, substantially reduces the financial impact of metal price movements on our earnings and operating margins.

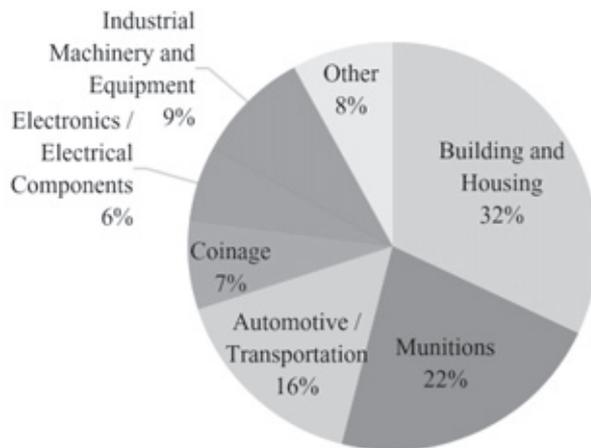
All of our segments sell to the building and housing market. While demand within this market is affected by new residential housing, existing home sales and commercial construction, all of which are seasonal and dependent on overall economic conditions, the correlation between housing statistics and our sales is not entirely direct. Our key products are typically installed near the completion of construction, meaning there is an inherent lag time compared to housing starts, and sales of our building and housing products can be affected by factors such as housing mix (unit size, unit price point and the mix of multi-family versus single-family construction). Sales of our products can also be impacted by changes in the composition of materials and fixtures used in construction as well as import and export dynamics.

The following charts show the percentage of our shipments by segment, as well as the primary markets for our products and the percentage of shipments. Pounds shipped by market represent management’s estimate of the markets in which our customers participate. Additionally, pounds shipped by market reflect our allocation of Chase Brass shipments to distributors, job shops and forging shops. See Item 1, “Business—Chase Brass.”

### 2016 Pounds Shipped by Segment



### 2016 Pounds Shipped by Market



## Segments Overview

We have three reportable operating segments: Olin Brass, Chase Brass and A.J. Oster.



	Olin Brass	CHASE BRASS AND COPPER COMPANY, LLC	AJO A.J. OSTER
<b>Description</b>	<ul style="list-style-type: none"> <li>• Leading manufacturer, fabricator and converter of specialized copper and brass sheet, strip, foil, tube, and fabricated products</li> </ul>	<ul style="list-style-type: none"> <li>• Leading manufacturer and supplier of brass rod</li> </ul>	<ul style="list-style-type: none"> <li>• Leading processor and distributor of copper and brass products</li> </ul>
<b>Key Markets</b>	<ul style="list-style-type: none"> <li>• Building and Housing</li> <li>• Automotive</li> <li>• Electronics / Electrical Components</li> <li>• Munitions</li> <li>• Coinage</li> </ul>	<ul style="list-style-type: none"> <li>• Building and Housing</li> <li>• Transportation</li> <li>• Electronics / Electrical Components</li> <li>• Industrial Machinery and Equipment</li> </ul>	<ul style="list-style-type: none"> <li>• Building and Housing</li> <li>• Automotive</li> <li>• Electronics / Electrical Components</li> </ul>

Further information about our business segments and the geographic areas of our operations can be found in “Note 4, Segment Information.”

### Olin Brass

In addition to manufacturing, fabricating and converting specialized copper and brass sheet, strip, foil, tube and fabricated products, the Olin Brass segment also rerolls and forms other alloys such as stainless steel, carbon steel and aluminum. Sheet and strip is generally manufactured from copper and copper-alloy scrap.

Olin Brass manufactures its wide variety of products through four sites in North America. It is not uncommon for Olin Brass to produce 50 different alloys, approximately 30% of which could be high performance alloys (“HPAs”).

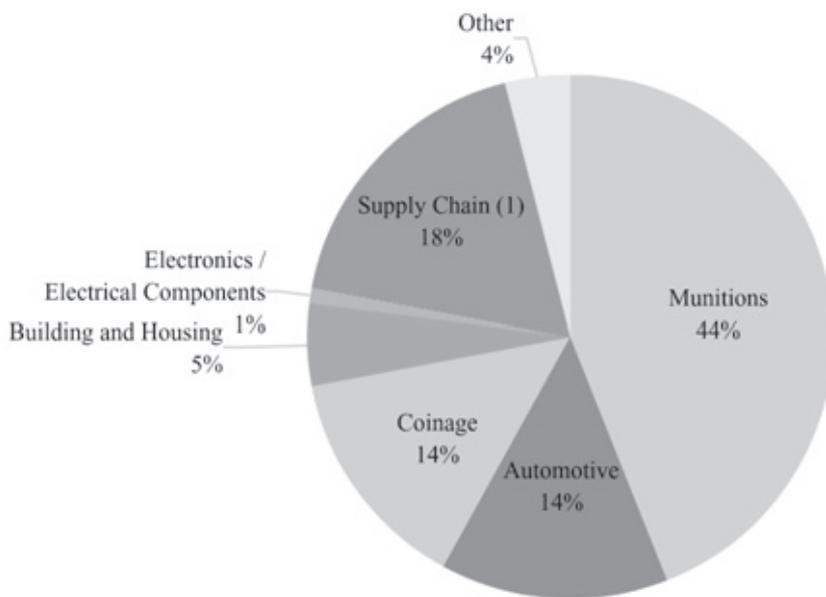
Olin Brass’s integrated brass mill in East Alton, Illinois is its main operating facility, which melts metal and produces strip products that are either sold directly to external customers, sold to its affiliate, A.J. Oster, or shipped to Olin Brass’s downstream operations for further value-added processing. Olin Brass’s downstream operations include:

- a stamping operation located in East Alton;
- a rolling mill in Waterbury, Connecticut with rolling, annealing, leveling, plating and slitting capabilities for various products (“Somers Thin Strip”), including stainless steel thin strip;
- a manufacturing facility in Bryan, Ohio specializing in products sold in the automotive and electronics / electrical components markets; and
- a manufacturing facility in Cuba, Missouri that produces high frequency welded copper-alloy tube for heat transfer, utility, decorative, automotive and plumbing applications.

Olin Brass’s products are sold to original equipment manufacturers (“OEMs”), other external customers, distributors / rerollers or to its affiliate, A.J. Oster. In 2016, approximately 18% of Olin Brass’s products were shipped to distribution customers, which includes its affiliate A.J. Oster, of which management estimates that approximately 55% were directly associated with the building and housing and automotive sectors. In 2016, approximately 15% of Olin Brass’s domestic copper-based shipments were to A.J. Oster.

The following chart shows the primary markets for Olin Brass's products and the percentage of shipments.

### 2016 Olin Brass Pounds Shipped by Market



- (1) Approximately 55% of supply chain customer shipments are directly associated with the building and housing and automotive markets according to management estimates. Shipments to A.J. Oster are reflected in the supply chain market and are eliminated in consolidation.

#### *Munitions Market*

Olin Brass manufactures products utilized in both the military and commercial munitions markets, such as strip and cups, that are used to produce shot shells, bullet jackets, centerfire, rimfire and small caliber military munitions.

Customers in this market include major munitions producers in the U.S., including those producing small caliber ammunition for the U.S. military. Demand within this market is affected by the U.S. government's security policies and troop size, as well as consumer demand for firearms and munitions. While munitions demand is predominantly domestic, occasional opportunities arise to supply U.S. alliance partners with these products.

#### *Coinage Market*

Olin Brass supplies strip for use in the production of dollar coins, quarters, dimes and nickels. Customers in this market include the United States Mint, for which we are a key supplier contracted into 2017. This long-term contract has typically been renewed as Olin Brass has been a highly regarded and valued supplier to the United States Mint for over 40 years.

The demand within this market is affected by the level of activities in retail transactions, the use of vending machines, and the trends affecting forms of payment.

#### *Automotive Market*

Olin Brass manufactures both strip and fabricated products used as electronic and electrical connectors for use in automobiles. These products are made with HPAs, suitable for applications requiring high reliability, high temperature and low insertion force. For example, these electrical connectors, along with lead frames manufactured by us, are used in junction boxes, wiring harnesses, ignition systems, lighting and automotive entertainment systems.

Customers in this market include primary automotive connector suppliers in the U.S. Historically the business in this market remained largely regional in the U.S. Demand within this market is affected by the level of consumer spending on automobiles, which is significantly dependent on overall economic conditions and the amount of electrical components contained within automobiles.

#### *Building and Housing Market*

Olin Brass manufactures a variety of strip, welded tube and stamped parts used in commercial and residential buildings, such as faucets, locksets, decorative door hardware and hinges, which require workability, corrosion resistance and attractive appearance. Olin Brass also manufactures strip for products requiring high electrical conductivity, such as plug outlets, switches, lamp shells, other wiring devices, industrial controls, circuit breakers and switchgears. These products are generally manufactured with copper and copper-alloy sheet and strip, both HPAs and standard alloys, as well as copper-alloy welded tube.

Customers in this market are OEMs producing building and housing products. Olin Brass also supplies building and housing products in China through Olin Luotong Metals.

#### *Electronics / Electrical Components Market*

Olin Brass manufactures strip used in integrated circuit sockets for circuit boards, electrical connectors for laptop computers and similar devices, consumer electronics and appliances, and foils for flexible circuit applications. The strip manufactured in this market is high in HPA content and is sold directly to end-use customers and distributors.

Customers in this market are primarily electronics manufacturers that operate globally. A portion of these customers is serviced through A.J. Oster, and the remainder is supplied directly by Olin Brass, with its Somers Thin Strip facility providing the foil products on a global scale.

Demand within this market is affected by consumer spending on electronics, which may fluctuate significantly as a result of economic conditions.

#### *International*

The Olin Brass segment sold 18.3 million pounds into non-U.S. markets that primarily serve the building and housing, automotive and electronics / electrical components markets.

#### *Asia*

Included within our Olin Brass business, our Asian operations provide service, distribution and sales activities to meet the growing demand for copper alloys in that region. These activities are conducted through two of our subsidiaries, Olin Luotong Metals (“OLM”) in China and GBC Metals Asia Pacific PTE (“GMAP”) in Singapore. These operations source materials from Olin Brass, as well as other copper and brass mills, such as Chinalco and DOWA Metaltech Co. LTD (“Dowa Metaltech”). In 2016, these Asian operations generated \$37.1 million of net sales, or 6% of the Olin Brass segment’s net sales. On a pounds basis, our Asian operations sold 9.8 million pounds (4% of the Olin Brass segment’s sales) of product into Asia through OLM and GMAP, primarily into key electronics markets.

#### *Others*

The remainder of Olin Brass’s international sales are primarily to Mexico, Canada and European countries and were 8.5 million pounds (3% of the Olin Brass segment’s sales) in 2016.

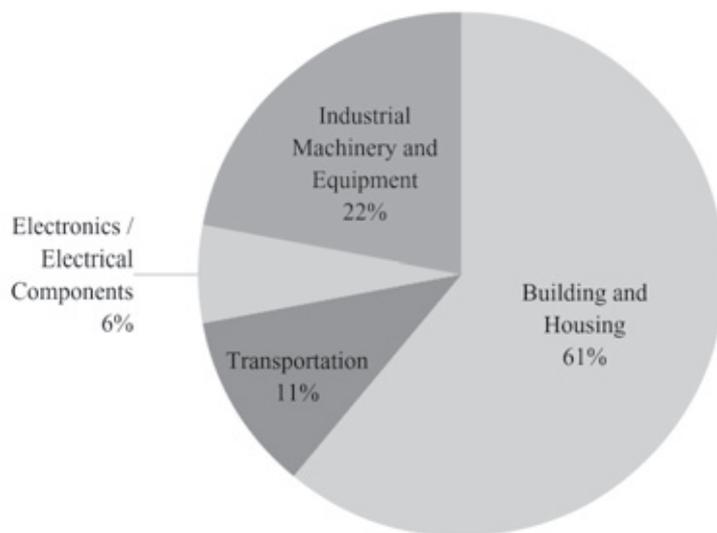
#### ***Chase Brass***

Chase Brass primarily manufactures brass rod, including round, hexagonal and other shapes, ranging from 1/4 inch to 4 1/2 inches in diameter. Its customers machine or otherwise process the rod for various applications used in various markets. Brass rod is primarily used for forging and machining products, such as valves and fittings. Key attributes of brass rod include its machinability, corrosion resistance and moderate strength. Brass rod is generally manufactured from copper or copper-alloy scrap and all of Chase Brass’s rod is manufactured at its Montpelier, Ohio facility.

Chase Brass has been able to capitalize on opportunities arising from regulation limiting lead content in potable water plumbing fixtures. The green product portfolio has grown significantly over the past few years as customers switch from leaded to non or low-leaded products in certain applications. We expect increased demand in the building and housing market to drive growth in our green product portfolio, including Eco Brass<sup>®</sup>, given the enactment of these regulations.

The following chart shows the primary markets for Chase Brass's products and the percentage of shipments for each. Note that substantially all of the electronics / electrical components shipments below are associated with the building and housing and transportation markets.

## 2016 Chase Brass Pounds Shipped by Market



### *Building and Housing Market*

Chase Brass manufactures brass rod for use in faucets, valves and fittings used in residential and commercial construction.

Chase Brass produces a number of low-lead and lead-free products, or “green portfolio” products, which comply with state laws in California and Vermont as well as federal standards (patterned after legislation enacted in California and Vermont) that became effective in January 2014. This legislation defines the allowed level of lead content in products used in plumbing and drinking water applications. Chase Brass’s Green Dot® rod, Eco Brass® rod and Eco Brass® ingot products are part of the green portfolio, and Chase Brass is the exclusive licensee of the intellectual property rights for their production, sale and distribution in North America. Chase Brass also manufactures other non-patented green portfolio products. Green portfolio products accounted for approximately 21% of pounds shipped by Chase Brass in 2016.

### *Industrial Machinery and Equipment Market*

Chase Brass manufactures brass rod used in industrial valves and fittings. Demand within this market is affected by capital spending levels, U.S. gross domestic product (“GDP”) growth and industrial production growth in the U.S.

Customers in this market include various major diversified manufacturers and a variety of screw machine companies supporting OEMs.

### *Transportation Market*

Chase Brass manufactures brass rod for uses in heavy trucks and automobiles. Specific applications include heavy truck braking systems, tire valves, temperature sensors and various truck and automotive fittings. Demand within this market is affected by levels of transportation activity, levels of maintenance capital spending by transportation companies and the level of commercial truck fleet replacement activity, all of which are affected significantly by overall economic conditions. Customers in this market include major OEMs in the transport industry and customers who support domestic automotive production.

### *Electronics / Electrical Components Market*

Chase Brass manufactures brass rod used for telecommunication applications, including products such as coaxial connectors and traps and filters for cable television, as well as larger connectors supporting the cell tower industry. Demand within this market is affected by consumer spending, new home construction, and technologies affecting communication devices and methods. Customers within this market include major manufacturers of specialty products for use in home and commercial construction, both of which are very dependent on overall economic conditions. Management believes that a significant portion of shipments in this market segment are directly associated with the building and housing market and transportation markets.

### *International*

Chase Brass primarily supplies products within North America. Chase Brass generated \$45.2 million in net sales (9% of the Chase Brass segment's net sales) to Canada and Mexico in 2016. Sales to Canada and Mexico were 24.9 million pounds (11% of the Chase Brass segment's sales) in 2016.

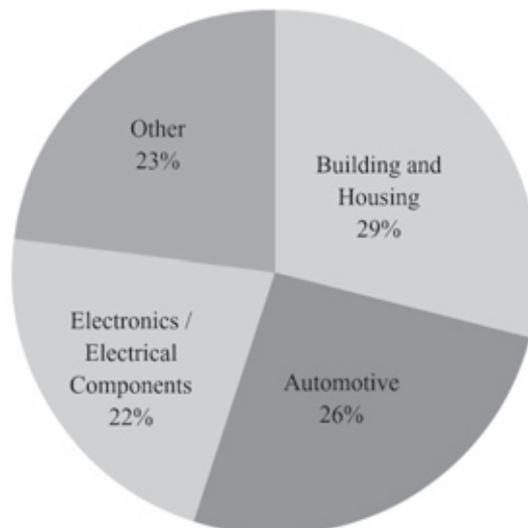
### *A.J. Oster*

A.J. Oster is a processor and distributor of primarily copper and copper-alloy sheet, strip and foil, operating six strategically-located service centers in the U.S., Puerto Rico and Mexico. Key A.J. Oster competitive advantages are short lead-times with high reliability, high level of service, small-quantity deliveries and a wide range of high-quality, copper-based products. These capabilities, combined with A.J. Oster's operations of precision slitting, hot tinning, traverse winding, cutting and special packaging, provide value to a broad customer base.

In 2016, Olin Brass provided A.J. Oster with 51% of its copper-based products. Aurubis AG ("Aurubis") is A.J. Oster's second largest supplier after Olin Brass, supplying approximately 30% of A.J. Oster's copper-based products in 2016. Many of the coils purchased from Olin Brass and Aurubis are full-width and require slitting.

The following chart shows the primary markets for A.J. Oster's products and the percentage of shipments for each.

**2016 A.J. Oster Pounds Shipped by Market**



### *Building and Housing Market*

A.J. Oster distributes copper-alloy strip and aluminum foil used for products in commercial and residential buildings. The two primary applications are electrical and hardware.

Electrical products are primarily for wiring devices. Other applications include switchgears, switches, controls and circuit breakers. Several of our customers for these products are in Puerto Rico or Mexico. A.J. Oster's capabilities are well-suited for these geographic locations and the stringent service requirements of the electrical market because A.J. Oster is able to provide customers with high-quality metals, in less-than-truckload quantities, and can deliver products shortly after receiving orders.

Hardware products include products such as faucets, window trim, locksets, hinges and kick plates.

### *Automotive Market*

A.J. Oster distributes copper-alloy strip and aluminum foil used in automobile production. Primary customer products are electrical connectors, automotive trim and heat exchangers.

A.J. Oster's subsidiary in Queretaro, Mexico is well-positioned to take advantage of the growing number of second-tier automobile component suppliers in Mexico.

Demand within this market is affected by the level of consumer spending on automobiles, which is significantly dependent on overall economic conditions.

### *Electronics / Electrical Components Market*

A.J. Oster distributes copper-alloy strip used for electrical connectors in computers, consumer electronics and automobiles.

The demand within this market is affected by consumer spending and trends in electronics, which may fluctuate significantly as a result of economic conditions.

### *International*

A.J. Oster operates a service center in central Mexico. The facility is located in Queretaro in the center of Mexico's industrial triangle marked by Mexico City, Monterey and Guadalajara and is easily accessible by highway connections to the U.S.

Automotive sub-suppliers that consume copper-alloy strip are now locating facilities in central Mexico in order to support primary automotive manufacturing.

Net sales from A.J. Oster Mexico were \$39.8 million during 2016 (14% of A.J. Oster segment's net sales). Pounds shipped from A.J. Oster Mexico were 10.4 million and comprised 14% of the A.J. Oster segment's sales.

### ***Raw Materials and Supply***

We manufacture our products from scrap metal (both internally generated and externally sourced) or virgin raw materials. During 2016, 91% of our metal came from scrap metal, and the remainder came from virgin raw materials.

Virgin raw materials, including copper cathode, are purchased at a premium on the London Metal Exchange ("LME") or Commodities Exchange ("COMEX") or directly from key dealers that support producers around the world. Although virgin raw materials are more expensive compared to scrap, we use them to produce HPAs and other products that require exact specifications.

### ***Customers***

Our customer base is broadly diversified, spanning various North American markets, including building and housing, munitions, automotive, transportation, coinage, electronics / electrical components, industrial machinery and equipment and general consumer markets. In 2016, we sold approximately 14,000 different stock keeping units ("SKUs") to nearly 1,600 customers.

Also in 2016, net sales from our foreign entities were \$76.9 million, or 6% of our net sales. We have long-term relationships with our customers, many of which are secured through short-term contracts. Our relationships with many of our significant customers have lasted more than 30 years.

All three of our operating segments had customers to whom sales activity constituted more than 10% of net sales during 2016. Olin Brass generated 23% of its total net sales from one customer and 11% of its total net sales from another customer. A.J. Oster generated 18% of its total net sales from one customer. Chase Brass generated 21% of its total net sales from one customer. On a consolidated basis, we did not generate more than 10% of our net sales from any one customer in 2016.

### ***Competition***

We compete with other companies on price, service, quality, breadth, and availability of product. We believe we have been able to compete effectively because of our high levels of service, breadth of product offering, knowledgeable and trained sales force, modern equipment, numerous locations, geographic dispersion and economies of scale.

The North American market for brass and copper strip and sheet and brass rod consists of a few large participants and a few smaller competitors for Olin Brass and Chase Brass. A.J. Oster's competition consists of a number of smaller competitors. Our international competitors are based principally in Europe and Asia.

Our largest competitors in each of the markets in which we operate are the following:

- Aurubis and PMX Industries, Inc.: manufacturers of copper and copper-alloys in the form of strip, sheet and plate (Olin Brass competitor);
- ThyssenKrupp Materials NA, Copper and Brass Sales Division: processor and distributor of copper, brass, stainless and aluminum products; Wieland Metals, Inc.: re-roll mill and service center for copper and copper-alloy strip (A.J. Oster competitor); and
- Mueller Industries, Inc.: manufacturer of brass rod (Chase Brass competitor).

We use data published by independent industry associations and management estimates to determine our market share. Using this information, in 2016:

- Olin Brass accounted for 32% of North American shipments (including shipments to A.J. Oster) of copper and brass alloys in the form of sheet, strip and plate;
- A.J. Oster accounted for 35% of North American shipments of copper and brass, sheet and strip products from distribution centers and rerolling facilities; and
- Chase Brass accounted for 54% of North American shipments of brass rod, not including imports.

### ***Corporate***

Our Corporate expenditures include compensation for corporate executives and officers, corporate office and administrative salaries, and professional fees for accounting, tax and legal services. Corporate also includes interest expense, state and federal income taxes, overhead costs that management has not allocated to the operating segments, share-based compensation expense, gains and losses associated with certain acquisitions and dispositions and the elimination of intercompany sales and balances.

### ***Government Regulation and Environmental Matters***

#### ***Bactericidal Products***

Through its membership in the Copper Development Association Inc. ("CDA"), Olin Brass has completed the required Federal Environmental Protection Agency ("EPA") and applicable state registration processes that allow it to market its CuVerro<sup>®</sup> products with certain approved bactericidal claims. Laboratory testing has shown that bactericidal copper touch surfaces made with CuVerro<sup>®</sup> kill more than 99.9% of bacteria within two hours. We believe that Olin Brass's copper-based CuVerro<sup>®</sup> materials are in compliance, in all material respects, with EPA standards for products recognized by the EPA as having bactericidal properties.

In connection with these EPA registrations, the CDA is required to implement a "stewardship" plan that is designed to ensure that bactericidal copper-alloys are properly used and marketed. The stewardship requirement reflects the EPA's concern that the improper marketing of bactericidal copper-alloys could lead users to mistakenly believe that the use of

these products is a simple solution to fight infections. The stewardship efforts are intended to emphasize that all marketing statements are consistent with the approved EPA product label, including the need to state clearly that the alloys are intended as a supplement to, but are not a substitute for, standard cleaning and sanitization procedures. These standards also apply to marketing by our customers who use CuVerro® in their products.

Even though the marketing of copper products as bactericidal started in 2008, the manufacturers of such products are still in the process of determining what specific bactericidal claims may be made in compliance with the EPA's and Federal Insecticide, Fungicide and Rodenticide Act's ("FIFRA") requirements. Therefore, there remains some uncertainty when determining whether a particular marketing approach is consistent with the EPA registration requirements. Accordingly, it is possible that we or other manufacturers may be found to be non-compliant by the EPA for current, past or future marketing claims and activities. The EPA can impose administrative, criminal or judicial sanctions and penalties against those violating federal registrations. Any failure by us or our customers who use CuVerro® in their products to comply with FIFRA's requirements with respect to CuVerro® could therefore expose us to various enforcement actions or other claims or adverse impacts to our reputation. The stewardship program required under the EPA registration is an industry-wide activity, and the actions of other CDA members could jeopardize the marketing of all bactericidal copper products registered through the CDA (including CuVerro®). If the EPA were to determine that the stewardship program is not being implemented effectively, the EPA may initiate a variety of corrective actions, which could adversely affect us and other CDA members, including cancelling all CDA registrations. If the EPA were to initiate an enforcement action that affects us or our customers, it may have a material adverse effect on our ability to market CuVerro® as a bactericidal product.

#### *Lead-free and Low-lead Plumbing Products*

New regulations designed to reduce lead content in drinking water plumbing devices provide an opportunity for future growth. Chase Brass is a premier provider of specialized lead-free products and low-lead alloys. Federal legislation in the United States (the Reduction of Lead in Drinking Water Act, which was patterned after legislation enacted in California and Vermont) required the reduction of lead content in all drinking water plumbing devices beginning in January 2014. This legislation presents a significant growth opportunity for Chase Brass. Our Eco Brass® products meet federal, California and Vermont standards and can be used to produce cast, machined and forged faucet parts. We currently supply major faucet, valve and fitting manufacturers who produce multiple products using machined Eco Brass® parts.

#### *Environmental*

Our operations are subject to a number of federal, state and local laws and regulations relating to the protection of the environment and to workplace health and safety. In particular, our operations are subject to extensive federal, state and local laws and regulations governing the creation, transportation, use, release and disposal of wastes, air and water emissions, the storage and handling of hazardous substances, environmental protection, remediation, workplace exposure and other matters. Hazardous materials used in our operations include general commercial lubricants, cleaning solvents and cutting oils. Among the regulated activities that occur at some of our facilities are: the accumulation of scrap metal; and the generation of hazardous waste, solid wastes and wastewaters, such as water from burning tables operated at some of our facilities. The generation, storage, and disposal of these wastes are done in accordance with the Federal Water Pollution Control Act, the Comprehensive Environmental Response, Compensation, and Liability Act ("CERCLA") and the Resource Conservation and Recovery Act, and we use third-party commercial disposal services as permitted by these laws for the removal and disposal of these wastes. The storage, handling and use of lubricating and cutting oils and small quantities of maintenance-related products and chemicals are also regulated under environmental laws, and the health hazards of these materials are communicated to employees pursuant to the Occupational Safety and Health Act.

In general, our facilities' operations do not involve the types of emissions of air pollutants, discharges of pollutants to land or surface water, or treatment, storage or disposal of hazardous waste which would ordinarily require federal or state environmental permits. Some of our facilities possess authorizations under the Clean Air Act for air emissions from paints and coatings. At some locations, we also possess hazardous materials storage permits under local fire codes or ordinances for the storage of combustible materials such as oils or paints. At some facilities we possess state or local permits for on-site septic systems. Our cost of obtaining and complying with such permits has not been, and is not anticipated to be, material.

We believe that we are in substantial compliance with all applicable environmental and workplace health and safety laws and do not currently anticipate that we will be required to expend any substantial amounts in the foreseeable future in order to meet such requirements. We have a number of properties located in or near heavy industrial or light industrial use areas; accordingly, these properties may have been contaminated by pollutants which may have migrated from neighboring facilities or have been released by prior occupants for which we may become liable under various laws and regulations. Some of our properties have been affected by releases of cutting oils and similar materials and we are investigating and

remediating such known contamination pursuant to applicable environmental laws. The costs of these clean-ups have not been material in the past. We are not currently subject to any material claims or notices with respect to clean-up or remediation under CERCLA or similar laws for contamination at our leased or owned properties or at any off-site location. However, we could be notified of such claims in the future. It is also possible that we could be identified by the EPA, a state agency, or one or more third parties as a potentially responsible party under federal or state laws and regulations.

Pursuant to the agreement, dated November 19, 2007, by which we purchased our current operating locations from Olin Corporation, Olin Corporation agreed to retain responsibility for a wide range of liabilities under environmental laws arising out of existing contamination on our properties, and agreed to indemnify us without limitation with respect to these liabilities. Specifically, Olin Corporation retained responsibility for:

- compliance with all obligations to perform investigations and remedial action required under the Connecticut Real Property Transfer Act at properties in Connecticut;
- pending corrective action / compliance obligations under the Federal Resource Conservation and Recovery Act for certain areas of concern at our East Alton, Illinois facility; and
- all obligations under environmental laws arising out of 24 additional specifically identified areas of concern on various of our properties.

Olin Corporation also retained complete responsibility for all liabilities arising out of then pending governmental inquiries relating to environmental matters; for “any liability or obligation in connection with a facility of the Business to the extent related to pre-Closing human exposure to Hazardous Materials, including asbestos-containing materials”; and for “any liability or obligation in connection with the off-site transportation or disposal of Hazardous Materials arising out of any pre-Closing operations of the Business.”

Since 2007, Olin Corporation has continued to perform environmental remedial actions on our properties, including the East Alton, Illinois and Waterbury, Connecticut properties, and continues to work closely with us to address matters covered by the indemnity. Because of the Olin Corporation indemnity, we have not been required to engage in any significant environmental cleanup activity on our properties and do not currently have any material reserves established to address environmental remedial requirements.

### ***Employees***

The following table shows the composition of our workforce by operating segment and Corporate as of December 31, 2016.

	<u>Employees</u>	<u>% of Total</u>
Olin Brass	1,222	66%
A.J. Oster	294	16%
Chase Brass	319	17%
Corporate	22	1%
Total	<u>1,857</u>	<u>100%</u>

As of December 31, 2016, 1,130, or approximately 61%, of our employees at various sites were members of unions. We have generally maintained good relationships with all unions and employees, which has been an important aspect of our ability to be competitive in our industry. Generally, our various agreements with unions in the United States have contractual terms which range from 1 to 5 years.

Historically, we have succeeded in negotiating new collective bargaining agreements without a strike and we have not experienced any work stoppages at any of our facilities. In particular, our union agreements governing a substantial portion of our employees at Chase Brass and Olin Brass expire in 2017. We believe we will continue to be able to renew the outstanding collective bargaining agreements upon acceptable terms.

### ***Research and Development***

Our staff of scientists in metallurgy and electrochemistry intends to continue to invest in research and development to develop new products and expand our value-added services to meet our customers’ needs.

Our research and development expenditures were not material during 2016, 2015 or 2014.

## ***Risk Management and Insurance***

The primary risks in our operations are personal injury, property damage, transportation, criminal acts, risks associated with international operations, directors' and officers' liability and general commercial liabilities. We are insured against general commercial liabilities (including business interruption), workers' compensation liabilities, automobile accidents (including injury to employees and physical damage of goods and property and employer liabilities), directors' and officers' liability, crime, foreign risks, environmental liability, ocean cargo liability and flood through insurance policies provided by various insurance companies up to amounts we consider sufficient to protect against losses due to claims associated with these risks.

We also maintain bonds with certain federal, state and international authorities to insure against risks relating to, among other things, delays due to customs clearances, compliance with certain laws and regulations and import and export of goods.

## ***Safety***

Consistent with other strategic initiatives, we strive to achieve a 'Best in Class' performance status for employee safety. A number of our locations participate in the Occupational Safety and Health Administration ("OSHA") sponsored Voluntary Protection Program, or VPP. The Safety Excellence / VPP initiative shifts the safety paradigm to an aggressive proactive approach that stresses strong employee participation and collaboration, management accountability, employee training and hazard elimination as core foundational elements. In 2016, our A.J. Oster facility in Yorba Linda, California was recognized as a VPP Star site. This recognition reflects the facility's achievement in the development, implementation and continuous improvement of their safety and health management system resulting in injury and illness rates that are below the national averages for the industry.

## ***Patents, Trademarks and Other Intellectual Property Rights***

Chase Brass has exclusive intellectual property licenses, the longest of which extends to 2027, to produce and sell Eco Brass<sup>®</sup> rod and ingot in North America, granted by Mitsubishi Shindoh Company, Ltd., the Japanese company that owns the relevant intellectual property rights. The most popular versions of Eco Brass<sup>®</sup> are protected through May 2019. We have sublicensed our rights to three sublicensees, none of which is currently a competitor of any of our subsidiaries or segments. These sublicensing arrangements are valid until the expiration of the relevant patents in North America.

We have alloy licensing arrangements with companies in Germany, Japan and China.

We own a number of other U.S. and foreign patents, trademarks and licenses relating to certain of our products and processes. We actively protect our proprietary rights by the use of trademark, copyright, and patent registrations. Additionally, we license the marks OLIN BRASS and OLIN METALS for metal products from Olin Corporation. These licenses continue unless we breach the license agreement. We also license stylized versions of these marks from Olin Corporation and the license to the stylized version includes an annual termination option by either party.

We license the intellectual property rights related to certain proprietary alloy systems to other major brass mills around the world, including Dowa Metaltech.

## ***Government Contract***

The United States Mint is and has been a significant customer of Olin Brass since 1969. We have a contractual arrangement to supply nickel and brass coinage strip to multiple United States Mint facilities. As has been the case for a long time, we expect to renew this contract when it expires in 2017. However, the United States Mint can terminate our contract in whole or in part when it is in the best interest of the United States Mint to do so and any damages payable to us by the United States Mint for such termination would not include lost profits.

## ***Seasonality***

There is a slight decrease in our net sales in the fourth quarter as a result of the decrease in demand due to customer shutdowns for the holidays and year-end maintenance of plants and inventory by customers. We also typically experience slight working capital increases in the first fiscal quarter as our customers build inventory to serve the seasonal building and housing market.

### ***Available Information***

Our website address is <http://www.gbcholdings.com>. We make available on our website, free of charge, the periodic reports that we file with or furnish to the Securities and Exchange Commission (“SEC”), as well as all amendments to these reports, as soon as reasonably practicable after such reports are filed with or furnished to the SEC. We also make available on our website or in printed form upon request, free of charge, our Corporate Governance Guidelines, Code of Business Conduct and Ethics, charters for the standing committees of our Board of Directors and other information related to the Company. We are not including the information contained on our website as a part of, or incorporating it by reference into, this report.

The public may read and copy any materials that we file with the SEC at the SEC’s Public Reference Room at 100 F Street, N.E., Washington D.C. 20549. The public may obtain information about the operation of the Public Reference Room by calling the SEC at 1-800-SEC-0330. The SEC maintains an internet site (<http://www.sec.gov>) that contains reports, proxy and information statements and other information related to issuers that file electronically with the SEC.

## Item 1A. Risk Factors.

*We are exposed to various risks as we operate our businesses. To provide a framework to understand our operating environment, we are providing a brief explanation of the more significant risks associated with our businesses. Although we have tried to identify and discuss key risk factors, others could emerge in the future.*

### **Risks Related to Our Business**

***Our business, financial condition and results of operations or cash flows could be negatively affected by downturns in economic cycles in general or cyclical in our markets, both inside and outside of the U.S. Our future growth also depends, to a significant extent, on improvements in general economic conditions and in conditions in our markets.***

Many of our products are used in industries that are, to varying degrees, cyclical and have historically experienced periodic downturns due to factors such as economic conditions, energy prices, the availability of credit, consumer sentiment, demand and other factors beyond our control. These economic and industry downturns have resulted in diminished product demand and excess capacity for our products. The significant deterioration in economic conditions that occurred during the second half of 2008 and continued into 2009 resulted in disruptions in a number of our markets. Any future economic disruptions may negatively impact our markets or the consumers served by those markets, which would adversely affect our operating results.

Future disruptions in the commercial credit markets may impact liquidity in the global credit market, and we are not able to predict the impact any such worsening conditions would have on our customers in general, and our results of operations specifically. Businesses in one or more of the markets that we serve, or consumers in one or more of the markets that our customers serve, may postpone or choose not to make purchases in response to economic uncertainty, tighter credit, negative financial news, unemployment, interest rates, adverse consumer sentiment and declines in housing prices or other asset values.

A significant amount of our volume is tied to the building and housing sector. If the housing, remodeling and residential and commercial construction markets stagnate or deteriorate, demand from such markets for our products, especially our brass rod products, is likely to be adversely affected. Any recovery in such markets will not necessarily directly correlate with increased sales or profitability. Our key products are typically installed late in the housing construction cycle, meaning there is an inherent lag in volumes, and sales of our building and housing products can be affected by factors such as housing mix (unit size, unit price point and the mix of multi-family versus single-family construction). Sales of our products can also be impacted by the actual timing of housing starts and completions as well as to changes in the materials and fixtures used in construction that may contain fewer copper products or materials and fixtures than were used in the past. In addition, competition from imports and other sources may also dampen the effects of any such recovery on our results of operations.

Similarly, the automotive market has in the past experienced significant downturns in connection with, or in anticipation of, declines in general economic conditions. Demand for vehicles depends largely on the strength of the economy, employment levels, consumer confidence levels, the availability and cost of credit and the cost of fuel. Negative economic developments could reduce demand for new vehicles, causing our customers to reduce their vehicle and automotive component part production in North America.

The coinage and general consumer markets are also affected by economic cycles. Demand for coinage-related products generally increases with the number of cash transactions that occur, and the number of cash transactions generally increases during periods of economic growth. Demand for consumer goods is also very sensitive to economic conditions and drives demand in our electronics / electrical components market.

The munitions market is cyclical and is not correlated to any general economic indicators and thus, has a high degree of volatility.

As a result, cyclical in economic conditions and in the markets that we serve could have a material adverse effect on our business, financial condition, results of operations and cash flows. Our growth prospects also depend, to a significant extent, on the degree by which general economic conditions and conditions in the markets that we serve continue to improve.

***Failure to maintain our balanced book approach would cause increased volatility in our profitability and our operating results and may result in significant losses.***

We use our balanced book approach to substantially reduce the impact of metal price movements, specifically fluctuations in the availability and price of copper scrap and cathode, which represent the largest component of our cost of sales. Such fluctuations can significantly affect our operating margins from our non-toll sales, which are sales for which we assume responsibility for metal procurement and then recover the metal replacement cost from the customer. Non-toll sales represented approximately 75% of our unit sales volume over the last three years. Under our balanced book approach, we seek to match the timing, quantity and price of the metal component of net sales with the timing, quantity and price of replacement metal purchases on all of our non-toll sales. We use a combination of matching price date of shipment terms, firm price terms and derivatives transactions to achieve our balanced book. See “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Key Business Principles Affecting Our Results of Operations—Balanced Book.”

We may not be able to maintain our balanced book approach if our customers become unwilling to bear metal price risk through the matching of price date of shipment terms. We may also not be able to find counterparties for the derivatives transactions entered into in connection with firm price terms, and the cost of those derivatives transactions may increase such that entering into such transactions is no longer cost-effective to us. If we fail to maintain our balanced book approach, we may be forced to accept higher replacement prices, which could generate losses and would increase volatility in our results of operations.

***Although we maintain our balanced book approach, metal costs still affect our profitability through “shrinkage” and inventory valuation adjustments.***

Shrinkage loss, which is primarily the loss of raw metal that occurs in the melting and casting operations, is an inherent part of a metal fabrication and conversion business. Despite our use of our balanced book approach to mitigate the impact of metal price fluctuations, we must bear the cost of any shrinkage during production, which may increase the volatility of our results of operations. Because we process a large amount of metal in our operations, a small increase in our shrinkage rates can have a significant effect on our margins and profitability. In addition, if metal prices increase, the same amount of shrinkage will have a greater effect on our manufacturing costs and have a more significant negative impact on our margins and profitability.

The market price of metals and related scrap used in production is subject to significant volatility. During periods when open-market prices decline below net book value, we may need to record a provision to reduce the carrying value of our inventory and increase cost of sales. Additionally, the cost of our inventories is primarily determined using the LIFO method. Under the LIFO inventory valuation method, changes in the cost of raw materials and production activities are recognized in cost of sales in the current period. In a period of rising raw material prices, cost of sales expense recognized under LIFO is generally higher than the cash costs incurred to acquire the inventory sold. Conversely, in a period of declining raw material prices, cost of sales recognized under LIFO is generally lower than cash costs incurred to acquire the inventory sold. The impact of LIFO accounting on our financial results may be significant with respect to period-to-period comparisons. During 2016, certain domestic metal inventory quantities were reduced, resulting in a liquidation of LIFO inventory layers carried at higher costs prevailing in prior years as compared with metal prices prevailing in the market at the time of the inventory depletion and the effect of this reduction of inventory increased cost of sales by \$1.9 million. See “Management’s Discussion and Analysis of Operating Results and Financial Condition—Key Business Principles Affecting Our Results of Operations —Metal Cost.”

***Because our balanced book approach does not reduce the effects of fluctuations in metal prices on our working capital requirements, higher metal prices could have a negative effect on our liquidity.***

Our balanced book approach does not reduce the impact of the volatility in metal prices on our working capital requirements. Metal prices impact our investment in working capital because our collection terms with our customers are longer than our payment terms to our suppliers. As a result, when metal prices are rising, even if the number of pounds of metal we process does not change, we tend to use more cash or draw more on our asset-based revolving loan facility (“2016 ABL Facility”) to cover the cash flow delay from material replacement purchase to cash collection. Thus, when metal prices increase, our working capital may be negatively affected as we are required to draw more on our cash or available financing sources to pay for raw materials. As a result, our liquidity may be negatively affected by increasing metal prices. Metal price volatility may also require us to draw on working capital sources more quickly and unpredictably, and therefore at higher cost. See “Management’s Discussion and Analysis of Operating Results and Financial Condition—Key Business Principles Affecting Our Results of Operations—Metal Cost.”

***Limited access to raw materials, infrastructure or fuel could negatively affect our business, financial condition or results of operations or cash flows.***

Our ability to fulfill our customer orders in a timely and cost-effective manner depends on our ability to secure a sufficient and constant supply of raw materials and fuel and access to infrastructure adequate to fulfill our business needs. Although we often seek to source our copper from scrap, including internally generated scrap and repurchases of our customers' scrap, where scrap is either not available or is not appropriate for use, we use virgin raw materials such as copper cathode, which are generally more expensive than scrap. We depend on natural gas for our manufacturing operations and source natural gas through open-market purchases.

We depend on scrap for our operations and acquire our scrap inventory from numerous sources. These suppliers generally are not bound by long-term contracts and have no obligation to sell scrap metals to us. The supply of scrap metal available to us could be adversely impacted at any time due to slowdowns in industrial production or consumer consumption. If an adequate supply of scrap metal is not available to us, we would be unable to use scrap as a source of supply at desired volumes, forcing us to use a larger amount of more expensive virgin raw materials and our results of operations and financial condition would be materially and adversely affected. The acquisition of copper cathode by physically backed copper exchange traded funds and other similar entities may materially decrease or interrupt the availability of copper for immediate delivery in the United States, which could materially increase our cost of copper and copper scrap, result in potential supply shortages, and increase price volatility for copper and copper scrap. All of the above factors may affect our ability to secure the necessary raw materials in a cost-effective manner for production of our products.

We may experience disruptions in the supply of natural gas as a result of delivery curtailments to industrial customers due to extremely cold weather. We may also experience disruptions or increases in cost with respect to our access to water, electrical power, transport and wastewater treatment services and other infrastructure (including those subject to our transition services agreement with the parent of our predecessor). We may also experience other delays or shortages in the supply of raw materials. An inability to find an adequate and timely supply of raw materials or adequate and cost-effective access to infrastructure could have a material adverse effect on our profit margin, and in turn on our business, financial condition, results of operations or cash flows.

***Increases in the cost of energy could cause our cost of sales to increase, thereby reducing operating results and limiting our operating flexibility.***

In 2016, the cost of energy and utilities represented approximately 6% of our non-metal cost of sales and prices can be volatile. As a result, our energy and utility costs may fluctuate dramatically, and we may not be able to mitigate the effect of higher energy and utility costs on our cost of sales. A substantial increase in energy costs could cause our operating costs to increase and our business, financial condition, results of operations and cash flows may be materially and adversely affected. Although we attempt to mitigate short-term volatility in energy and utility costs through the use of derivatives contracts, we may not be able to eliminate the long-term effects of such cost volatility. Furthermore, in an effort to offset the effect of increasing costs, we may have also limited our potential benefit from declining costs.

***Our substantial leverage and debt service obligations may adversely affect our financial condition and restrict our operating flexibility, including our ability to raise additional capital to fund our operations, limit our ability to react to changes in the economy or our industry and prevent us from meeting our obligations under our indebtedness.***

We are highly leveraged. As of December 31, 2016, our total indebtedness was \$316.0 million (net of debt issuance costs). We also had an additional \$197.9 million available for borrowing under the 2016 ABL Facility as of that date. Based on the amount of indebtedness outstanding and applicable interest rates at December 31, 2016, our annualized cash interest expense would be \$17.0 million, which includes \$0.3 million of interest expense related to our capital lease obligations. Additionally, we may potentially borrow under the 2016 ABL Facility, which is a floating-rate obligation, and thus, the related interest expense is subject to increase in the event interest rates were to rise.

Our substantial indebtedness and debt service obligations could have important consequences for investors, including:

- they may impose, along with the financial and other restrictive covenants under our credit agreements, significant operating and financial restrictions, including our ability to borrow money, dispose of assets or raise equity for our working capital, capital expenditures, dividend payments, debt service requirements, strategic initiatives or other purposes;
- they may limit our flexibility in planning for, or reacting to, changes in our operations or business;
- we may be more highly leveraged than some of our competitors, which may place us at a competitive disadvantage; and

- they may make us more vulnerable to downturns in our business or the economy.

Any of these consequences could have a material adverse effect on our business, financial condition, results of operations, prospects and ability to satisfy our obligations under our indebtedness. In addition, there would be a material adverse effect on our business, financial condition, results of operations and cash flows if we were unable to service our indebtedness or obtain additional financing, as needed.

***Covenants under our debt agreements impose operating and financial restrictions. Failure to comply with these covenants could have a material adverse effect on our business, financial condition, results of operations or cash flows.***

The agreement governing the 2016 ABL Facility and the agreement covering our term loan facility that matures on July 18, 2023 (“Term Loan B Facility”) contain various covenants that limit or prohibit our ability, among other things, to:

- incur or guarantee additional indebtedness;
- pay dividends on our capital stock or redeem, repurchase, retire or make distributions in respect of our capital stock or subordinated indebtedness or make certain other restricted payments;
- make certain loans, acquisitions, capital expenditures or investments;
- sell certain assets, including stock of our subsidiaries;
- enter into certain sale and leaseback transactions;
- create or incur certain liens;
- consolidate, merge, sell, transfer or otherwise dispose of all or substantially all of our assets;
- enter into certain transactions with our affiliates; and
- engage in certain business activities.

The agreement governing the 2016 ABL Facility also contains a financial covenant that requires us to maintain a fixed charge coverage ratio that is tested whenever excess availability, as defined in such agreement, falls below a certain level. For more information regarding these covenants, please see “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Outstanding Indebtedness.”

The agreement governing the Term Loan B Facility also contains a financial covenant that requires us to maintain a total debt leverage ratio that is tested quarterly.

A violation of covenants may result in default or an event of default under our debt agreements.

Upon the occurrence of an event of default under the agreement governing the 2016 ABL Facility or the Term Loan B Facility, the requisite lenders under the 2016 ABL Facility or the Term Loan B Facility, as applicable, could elect to declare all amounts of such indebtedness outstanding to be immediately due and payable and, in the case of the 2016 ABL Facility, terminate any commitments to extend further credit. If we are unable to repay those amounts, the lenders under such facilities may proceed against the collateral granted to them to secure such indebtedness. Substantially all of our assets are pledged as collateral under the 2016 ABL Facility and the Term Loan B Facility. If the lenders under either facility, as applicable, accelerate the repayment of borrowings, such acceleration would have a material adverse effect on our business, financial condition, results of operations or cash flows. Furthermore, cross-default provisions in the 2016 ABL Facility and the Term Loan B Facility provide that any default under the other facility or other significant debt agreements could trigger a cross-default under the 2016 ABL Facility or the Term Loan B Facility, as applicable. If we are unable to repay the amounts outstanding under these agreements or obtain replacement financing on acceptable terms, which ability will depend in part upon the impact of economic conditions on the liquidity of credit markets, our creditors may exercise their rights and remedies against us and the assets that serve as collateral for the debt, including initiating a bankruptcy proceeding.

Although the terms of the credit agreement governing the 2016 ABL Facility and the Term Loan B Facility contain restrictions on our ability to incur additional indebtedness, these restrictions are subject to a number of important qualifications and exceptions, which would allow us to borrow additional indebtedness. Additional leverage could have a material adverse effect on our business, financial condition and results of operations and could increase other risks harmful to our financial condition and results of operations.

For a more detailed description on the limitations on our ability to incur additional indebtedness and our compliance with financial covenants, please see “Management’s Discussion and Analysis of Financial Condition and Results of Operations—Liquidity and Capital Resources—Outstanding Indebtedness.”

***To service our indebtedness, we will require a significant amount of cash. Our ability to generate cash and the availability of our cash to service our indebtedness depends on many factors beyond our control, and any failure to meet our debt service obligations could harm our business, financial condition and results of operations.***

If we do not generate sufficient cash flow from operations to satisfy our debt service obligations, including payments required to be made on the 2016 ABL Facility and the Term Loan B Facility, we may have to undertake alternative financing plans, such as refinancing or restructuring our indebtedness, selling assets, reducing or delaying capital investments or seeking to raise additional capital. Our ability to restructure or refinance our indebtedness will depend on the condition of the capital markets and our financial condition at such time. Any refinancing of our indebtedness could be at higher interest rates and may require us to comply with more onerous covenants, which could further restrict our business operations. The terms of existing or future debt instruments (including the 2016 ABL Facility and the Term Loan B Facility) may restrict us from adopting some of these alternatives, which in turn could exacerbate the effects of any failure to generate sufficient cash flow to satisfy our debt service obligations. In addition, any failure to make payments of interest and principal on our outstanding indebtedness on a timely basis would likely result in a reduction of our credit ratings, which could harm our ability to incur additional indebtedness or refinance our indebtedness on acceptable terms. Furthermore, we might not be able to fulfill our cash needs if one or more of the financial institutions that are lenders under the 2016 ABL Facility were to default on its obligations to provide available borrowings under the 2016 ABL Facility, and such a default could have a material adverse effect on our liquidity and ability to operate our business.

Our inability to generate sufficient cash flow to satisfy our debt service obligations, or to refinance our obligations at all or on commercially reasonable terms, would have an adverse effect, which could be material, on our business, financial condition and results of operations, may restrict our current and future operations, particularly our ability to respond to business changes or to take certain actions, as well as on our ability to satisfy our obligations in respect of the 2016 ABL Facility and the Term Loan B Facility.

***If we were to lose order volumes from any of our largest customers, our sales volumes, revenues and cash flows could be reduced.***

Our business is exposed to risks related to customer concentration. Our five largest customers were responsible for approximately 30% of our net sales in 2016. A loss of order volumes from, or a loss of industry share by, any major customer could negatively affect our business, financial condition or results of operations by lowering sales volumes, increasing costs and lowering profitability. In addition, adverse economic and market conditions could also harm our business by negatively affecting our customers, which could impair their ability to pay for products they have purchased from our Company. Our balance sheet reflected an allowance for doubtful accounts totaling \$0.5 million at December 31, 2016. If adverse economic and market conditions impair the ability of our customers to pay us in the future, our allowance for doubtful accounts and write-offs of accounts receivable from the Company's customers may increase in the future, which could materially and adversely affect our financial condition and results of operations.

***We do not have long-term contractual arrangements with a substantial number of our customers, and our sales volumes and net sales could be reduced if our customers switch some or all of their business with us to other suppliers.***

In 2016, a majority of our net sales were generated from customers who do not have long-term contractual arrangements with us, including several of our largest customers. These customers purchase products and services from us on a purchase order basis and may choose not to continue to purchase our products and services. A significant loss of these customers or a significant reduction in their purchase orders could have a material negative impact on our sales volume and business, or cause us to reduce our prices, which could have a material adverse effect on our business, financial condition, results of operations and cash flows.

***Our business could be disrupted if our customers shift either their manufacturing or sourcing offshore.***

Much of our business depends on maintaining close geographical proximity to our customers because the costs of transporting metals across large distances can be prohibitive. If the general trend in relocating or contracting manufacturing capacity to foreign countries continues, especially those in the automotive parts, electrical connectors, and building and housing components industries, such relocations or contracting may disrupt or end our relationships with some customers and could lead to losing business to foreign competitors. In addition, some customers may seek to source their finished products offshore, thereby also increasing the amount of manufacturing offshore and thereby reducing demand for brass rod in the United States. These risks would increase to the extent we are unable to expand internationally when our customers do so.

***Decreased demand from the United States Mint could have a material adverse effect on our business, financial condition and results of operations.***

The United States Mint is a significant customer of Olin Brass. Olin Brass has a contractual arrangement to supply nickel and brass coinage strip to the two United States Mint locations. Our supply agreement with the United States Mint runs through 2017. The United States Mint can also terminate the contract in whole or in part for convenience, and the damages payable to us by the United States Mint for such a termination do not include lost profits. The loss or reduction of any authorized supplier arrangement with the United States Mint for coin manufacture could have a material adverse effect on our business, financial condition and results of operations. In addition, the United States Government contracting and procurement cycle can be affected by the timing of, and delays in, the legislative process. As a result, our net sales and operating income may fluctuate, causing us to occasionally experience declines in net sales or earnings as compared to the immediately preceding quarter, and comparisons of our operating results on a period-to-period basis may not be meaningful.

Additionally, trends in electronic commerce indicate a potential future reduction in demand for coinage strip, which could have a material adverse effect on our business, financial condition and results of operations. The U.S. Treasury department announced in December 2011 a halt in the production of Presidential dollar coins for circulation due to a lack of demand (which is primarily the result of the U.S. continuing the use of the dollar bill).

Although their production will continue for the collectibles market, it is uncertain when their production for circulation will be resumed. This action has adversely impacted our business and is expected to adversely impact our business over the next several years. Further actions to curtail coin production could have an adverse effect on our business, financial condition or results of operations.

***Decreased demand from Orbital ATK, Inc. (“ATK”) could have a material adverse effect on our business, financial condition and results of operations.***

Currently, a sizeable share of the production of our Olin Brass segment supports ATK, a supplier of munitions to the U.S. Army. ATK uses our product to service its contract with the U.S. Army to supply the U.S. Army’s arsenal located at Independence, Missouri. ATK is under contract with the U.S. Army to supply it with small-caliber ammunition and Olin Brass is under contract to supply ATK. In spite of these contractual arrangements, any decrease in demand from ATK or other disruption of our relationship with ATK could have a material adverse effect on our business, financial condition and results of operations.

***Competition in our industry could adversely affect our business, financial condition and results of operations.***

We are engaged in a highly competitive industry. Each of our segments competes with a limited number of companies. The Olin Brass segment competes with domestic and foreign manufacturers of copper and brass alloys in the form of strip, sheet and foil. The Chase Brass segment competes with domestic as well as foreign manufacturers of brass rod and beginning in 2013, encountered increased competition from foreign rod suppliers. The A.J. Oster segment primarily competes with distributors, mills and processors of copper and brass products. Furthermore, we believe that domestic sales to customers that are not made by major companies, including us, are fragmented among many smaller companies. In the future, these smaller companies may choose to combine, creating a more significant domestic competitor against our business. We may be required to explore additional initiatives in each of our segments in order to maintain our sales volume at a competitive level. Increased competition in any of the fields in which our segments operate could adversely affect our business, financial condition and results of operations.

Currently, anti-dumping orders impose import duties on copper and brass products from France, Germany, Italy and Japan which allow us and our domestic competitors to compete more fairly against French, German, Italian and Japanese producers in the U.S. copper and brass product market. On March 21, 2012, the International Trade Commission (“ITC”) Commissioners voted to continue anti-dumping orders for brass sheet and strip from Germany, Italy, France and Japan. While domestic manufacturers lobby for the continued extension of these orders, if they expire, import duties on metal products from these countries will be significantly reduced, increasing the ability of such foreign producers to compete with our products domestically. Additionally, on March 15, 2012, the United States-Korea Free Trade Agreement (“KORUS FTA”) became effective, which largely eliminates tariffs on Korean industrial products imported to the United States. The reduction in prices of Korean products resulting from the KORUS FTA has increased the ability of Korean manufacturers to compete with our products and has had a negative effect on our business. Furthermore, the termination of any anti-dumping orders or other changes to international trade regimes could adversely affect our business, financial condition and results of operations.

***Adverse developments in our relationship with our employees could have a material adverse effect on our business, financial condition, results of operations and cash flows.***

As of December 31, 2016, we had 1,857 employees, 1,130, or approximately 61%, of whom at various sites were members of unions. The current collective bargaining agreements that are in place are a meaningful determinant of our labor costs and are very important to our ability to maintain flexibility to fulfill our customers' needs. As we attempt to renew our collective bargaining agreements, labor negotiations may not conclude successfully and, in that case, may result in a significant increase in the cost of labor or may result in work stoppages or labor disturbances, disrupting our operations. Any such cost increases, stoppages or disturbances could have a material adverse effect on our business, financial condition, results of operations and cash flows by limiting plant production, sales volumes and profitability.

***Our participation in multi-employer union pension plans may have a material adverse effect on our financial performance.***

We are required to make contributions to the IAM National Pension Plan ("IAM Plan"), a multi-employer pension plan that covers certain of our union employees. Our U.S. multi-employer pension plan expense totaled \$3.5 million in 2016. Our obligations may be impacted by the funded status of the plan, the plan's investment performance, changes in the participant demographics, financial stability of contributing employers and changes in actuarial assumptions. In addition, if a participating employer becomes insolvent and ceases to contribute to a multiemployer plan, the unfunded obligation of the plan will be borne by the remaining participating employers. Under current law, an employer that withdraws or partially withdraws from a multi-employer pension plan may incur withdrawal liability to the plan. If, in the future, we choose to withdraw from the multi-employer pension plan in which we participate, we will likely need to record withdrawal liabilities, which could negatively impact our financial performance in the applicable periods.

***Our operations are subject to risks of natural disasters, acts of war, terrorism or widespread illness at our domestic and international locations, any one of which could result in a business stoppage and negatively affect our business, financial condition or results of operations.***

Our business operations depend on our ability to maintain and protect our facilities, computer systems and personnel. Our facilities and transportation for our employees are susceptible to damage from earthquakes and other natural disasters such as fires, floods, hurricanes, tornadoes and similar events. We have facilities located throughout North America, including in Illinois, Ohio, Connecticut, Rhode Island, Missouri, California, Puerto Rico and Mexico, as well as in China. We take precautions to safeguard our facilities, including obtaining insurance and maintaining health and safety protocols. However, a natural disaster, such as a tornado, fire, flood, hurricane or earthquake, could cause a substantial interruption in our operations, damage or destroy our facilities or inventory and cause us to incur additional expenses. The insurance we maintain against natural disasters may not be adequate to cover our losses in any particular case, which would require us to expend significant resources to replace any destroyed assets, thereby harming our financial condition and prospects significantly.

For example, Olin Brass's manufacturing facilities and A.J. Oster's California facility are located near geologic fault zones, and therefore are subject to greater risk of earthquakes which could result in increased costs and a disruption in our operations, which could harm our operating results and financial condition significantly. Our facility in East Alton, Illinois is located in a flood zone, and all of our facilities in the Midwestern United States are subject to the risk of tornadoes and damaging winds. Should earthquakes or other catastrophes, such as fires, tornadoes, hurricanes, floods, power outages, communication failures or similar events disable our facilities, we do not have readily available alternative facilities from which we could continue our operations, and any resulting stoppage could have a negative effect on our operating results. Acts of terrorism, widespread illness and war could also have a negative effect at our international and domestic facilities.

***Any prolonged disruptions at or failures of our manufacturing facilities and equipment could have a material adverse effect on our business, financial condition, results of operations and cash flows.***

Our ability to satisfy our customers' orders in an efficient manner and to effectively manage inventory levels is dependent on the proper operation of our facilities and equipment. On-time delivery and accurate order fulfillment are essential to maintaining customer satisfaction and generating repeat business. To the extent we experience prolonged equipment failures, quality control incidents, damage or disruption due to natural disasters, inclement weather conditions, acts of war, terrorism or widespread illness, temporary facility closures or other disruptions in operations such as a major fire or major equipment breakdown at our manufacturing facilities, our ability to satisfy our customers could be negatively impacted. In addition, we may not have adequate insurance to cover all losses. Furthermore, disruptions in operations of one or more of

our suppliers could result in production delays. Any of these events or circumstances could materially disrupt our business operations and thereby adversely affect our business, financial condition and results of operations.

In addition, we do not have redundancy in our operations on certain critical pieces of equipment, including the Olin Brass hot and cold mills and Chase Brass extruders. If this equipment were damaged, we would have to make alternative arrangements to replicate these processes, which could be costly and result in manufacturing delays, which could materially adversely affect our business, financial condition and results of operations.

***Inclement weather conditions could adversely affect our business, financial condition and results of operations.***

Inclement weather conditions in the areas where our facilities are located could have an adverse effect on our business, financial condition and results of operations. Extreme cold, heavy snowfall or other extreme weather conditions over a prolonged period could result in temporary facility closures, disruptions in our access to natural gas, electricity, fuel and other raw materials and delayed shipments of our products. Furthermore, inclement weather conditions also could disrupt the operations of one or more of our suppliers and result in production delays. Any of these events or circumstances could materially disrupt our business operations and thereby adversely affect our business, financial condition and results of operations.

***Failure to meet the capital expenditure requirements for the introduction of new products or substantial further increases in the production of existing products could have a material adverse effect on our business, financial condition and results of operations.***

Certain of our existing products, such as Eco Brass<sup>®</sup> and other potential “green portfolio” products, require separate production streams from those used for our other products in order to comply with applicable standards. As a result, in order to meet expected increased demand for such products, we will be required to make additional capital expenditures to modify or expand our facilities. In addition, if we introduce new products in the future, those products may also require modification or expansion of our production facilities. To accommodate any such production changes, we will be required to make additional capital expenditures to expand or modify our facilities. If we are unable to meet our capital expenditure requirements, we may not be able to timely respond to our customers’ needs and may lose their business to our competitors who may be better equipped to meet these needs, which could have a material adverse effect on our business, financial condition and results of operations.

***The increased use of substitute materials and miniaturization may adversely affect our business.***

In many applications, copper and other commodities may be replaced by other materials such as aluminum, stainless steel, plastic and other materials and the use of copper and other commodities may be reduced by the miniaturization of components. Increased prices of copper could encourage our customers to use substitute materials and / or miniaturization to limit the amount of copper in their products and applications in an attempt to control their overall product costs. For example, historically, there has been discussion over reducing or eliminating copper content in coins in reaction to the rising prices of copper. Such increased use of substitute materials and / or miniaturization could have a material adverse effect on prices and demand for our products.

***In order to operate our business successfully, we must meet evolving customer requirements for copper and copper-alloy products and invest in the development of new products.***

If we fail to develop or enhance our products to satisfy evolving customer demands, our business, operating results, financial condition and prospects may be harmed significantly. The market for copper and copper-alloy products is characterized by changing technologies, periodic new product introductions and evolving customer and industry standards. Our competitors are continuously searching for more cost-effective alloys and substitutes for copper and copper-alloys, and our current and prospective customers may choose products that might be offered at a lower price than our products. To achieve market acceptance for our products, we must effectively and timely anticipate and adapt to customer requirements and offer products and services that meet customer demands. This strategy may cause us to pursue other technologies or capabilities through acquisitions or strategic alliances. We may experience design, engineering and other difficulties that could delay or prevent the development, introduction or marketing of new products and services. Our failure to successfully develop and offer products or services that satisfy customer requirements may significantly weaken demand for our products and services, which would likely cause a decrease in our net sales and harm our operating results.

***If we fail to implement our business strategy, including our growth initiatives, our business, financial condition, results of operations or cash flows could be adversely affected.***

Our future financial performance and success depend in large part on our ability to successfully implement our business strategy. We may not be able to successfully implement our business strategy or be able to continue improving our operating results. In particular, we may not be able to continue to achieve all operating cost savings, further enhance our product mix, expand into selected targeted regions or continue to mitigate our exposure to metal price fluctuations.

The implementation of our business strategy may be affected by a number of factors beyond our control, such as increased competition, legal and regulatory developments, general economic conditions, the increase of operating costs or our ability to introduce new products and end-use applications. Any failure to successfully implement our business strategy could adversely affect our business, financial condition, results of operations or cash flows. We may, in addition, decide to alter or discontinue certain aspects of our business strategy at any time.

Furthermore, we may not be successful in our growth initiatives and may not be able to effectively manage expanded or acquired operations. See “We face a number of risks related to future acquisitions and joint ventures.”

***A portion of our net sales is derived from our international operations, which exposes us to certain risks inherent in doing business abroad.***

In the aggregate, our international operations accounted for 6% of our net sales in 2016. We have operations in China through Olin Luotong Metals and in Singapore through our subsidiary GBC Metals Asia Pacific PTE. In addition, we have various licensing agreements around the world and our products are distributed globally. We plan to continue to explore opportunities to expand our international operations. Our international operations generally are subject to risks, including:

- changes in U.S. and international governmental regulations, trade restrictions and laws, including tax laws and regulations;
- currency exchange rate fluctuations;
- tariffs and other trade barriers;
- the potential for nationalization of enterprises or government policies favoring local production;
- interest rate fluctuations;
- high rates of inflation;
- currency restrictions and limitations on repatriation of profits;
- differing protections for intellectual property and enforcement thereof;
- divergent environmental laws and regulations;
- political, economic and social instability;
- unfamiliarity with foreign laws and regulations and ability to enforce obligations of foreign counterparties;
- difficulties in staffing and managing international operations and labor unrest;
- language and cultural barriers;
- natural disasters and widespread illness;
- geopolitical conditions, such as terrorist attacks, war, or other military action; and
- a divergence between the price of copper on the copper exchange in China and the LME, and the COMEX.

The occurrence of any of these events could cause our costs to rise, limit growth opportunities or have a negative effect on our operations and our ability to plan for future periods, and subject us to risks not generally prevalent in North America.

***New governmental regulations or legislation, or changes in existing regulations or legislation, may subject us to significant costs, taxes and restrictions on our operations.***

Our operations are subject to a wide variety of U.S. federal, state, local and non-U.S. laws and regulations, including those relating to taxation, international trade and competition and firearms.

For example, the Olin Brass segment provides strip and cups to both the military and commercial munitions markets. In 2016, the shipments by Olin Brass to the munitions market accounted for 44% of its total shipments. The private use of firearms is subject to extensive regulation. Recent U.S. federal legislative activities generally seek either to restrict or ban the sale and, in some cases, the ownership of various types of firearms and ammunition. Several states currently have laws in effect similar to that legislation. Any restriction on the use of firearms and ammunition could affect the demand for munitions, and in turn could negatively affect our business, financial condition or results of operations. Moreover, any changes in the government budget or policy over military spending may adversely affect our contracts with customers in the munitions market.

Changes in U.S. or foreign tax laws, including possibly with retroactive effect, and audits by tax authorities could result in unanticipated increases in our tax expense and affect profitability and cash flows. From time to time, legislative initiatives are proposed in the U.S., such as the repeal of the election to use LIFO or to lower the U.S. corporate tax rate. If the U.S. corporate tax rate were lowered, we would be required to reduce our net deferred tax assets upon enactment of the related tax legislation, with a corresponding material, one-time increase to income tax expense, but our income tax expense and payments would be materially reduced in subsequent years. The cost of our inventories is primarily determined using LIFO. Under the LIFO inventory valuation method, changes in the cost of raw materials and production activities are recognized in cost of sales in the current period. Generally, in a period of rising prices, LIFO recognizes higher costs of goods sold, which both reduces current income and assigns a lower value to the year-end inventory. If the election to use the LIFO method for U.S. federal income tax purposes were repealed, taxpayers that currently use the LIFO method would be required to revalue their beginning LIFO inventory to its first-in, first-out (“FIFO”) value. The repeal of the election to use the LIFO method could result in a substantial cash tax liability, which could adversely impact our liquidity and financial condition. Furthermore, a transition to the FIFO method could result in an increase in the volatility of our earnings, a greater disparity between our earnings and net sales in our financial statements, and an increase in the costs associated with our derivative transactions to mitigate metal price fluctuations.

In addition, any termination or expiration of trade restrictions imposed on copper products by foreign governments could adversely affect our business as such products become freely tradable into the U.S. This may increase competition against our products and adversely affect our business, financial condition or results of operations. See “Competition in our industry could adversely affect our business, financial condition and results of operations.”

***We may not be able to sustain the annual cost savings realized as part of our cost-reduction initiatives.***

We will continue to undertake productivity and cost-reduction initiatives intended to improve performance and improve operating cash flow. Although we believe that the cost savings we have realized through our efforts so far are permanent reductions, we may not be able to sustain some or all of these cost savings on an annual basis in the future, which could have an adverse effect on our business, financial condition, results of operations and cash flows. Moreover, there can be no assurance that any new initiatives undertaken in the future will be completed or beneficial to us or that any estimated cost savings from such activities will be realized.

***Our operations expose our employees to risk of injury or death. We may be subject to claims that are not covered by, or exceed, our insurance. Additional safety measures or rules imposed by regulatory agencies may reduce productivity, require additional capital expenditure or reduce profitability.***

Because of the manufacturing activities conducted at our facilities, there exists a risk of injury or death to our employees or other visitors, notwithstanding the safety precautions we take. Our operations are subject to regulation by federal, state and local agencies responsible for employee health and safety, including the Occupational Safety and Health Administration, which has from time to time taken various actions with respect to our facilities, including imposing fines for certain isolated incidents. Despite policies and standards that are designed to minimize such risks, we may nevertheless be unable to avoid material liabilities for any employee death or injury that may occur in the future. These types of incidents may not be covered by or may exceed our insurance coverage and may have a material adverse effect on our results of operations and financial condition.

In addition, various regulatory agencies may impose additional safety measures or other rules designed to increase workplace safety. Compliance with such requirements could require additional capital expenditure or cause process changes that could reduce the productivity of the affected facilities, which could increase our costs and reduce our profitability.

***Our ability to retain our senior management team is critical to the success of our business, and failure to do so could materially adversely affect our business, financial condition, results of operations and cash flows.***

We are dependent on our senior management team to remain competitive in our industry. We have employment contracts or severance agreements with members of our senior management team, including John Wasz, Christopher Kodosky, Scott Hamilton, Kevin Bense, Devin Denner and William Toler. Failure to renew the employment contracts or other agreements of a significant portion of our senior management team could have a material adverse effect on our business, financial condition, results of operations and cash flows. Members of our senior management team are subject to employment conditions or arrangements that permit the employees to terminate their employment without notice. We do not maintain any life insurance policies for our benefit covering our key employees.

If our senior management team were not able to dedicate adequate time to our business, due to personal or other factors, if we lose or suffer an extended interruption in the services of a significant portion of our senior management team, or if a significant portion of our senior management team were to terminate employment within a short period it could have a material adverse effect on our business, financial condition, results of operations and cash flows. In addition, the market for qualified individuals may be highly competitive and we may not be able to attract and retain qualified personnel to replace or succeed members of our senior management team, should the need arise.

***Rising employee medical costs may adversely affect operating results.***

The extent to which our employee medical costs will increase in the future is difficult to assess at this time. In 2016, our costs related to employee health benefits were \$20.1 million. Because the implementation of various laws regarding employee medical costs and health insurance, including the Patient Protection and Affordable Care Act of 2010 and other related regulations, is currently in progress, there is some uncertainty as to how these current and future laws and regulations will affect our employee medical and other benefit costs. In addition, the cost of health care has been rising generally over time, and such increases have been in the past and will in the future be unpredictable and at times significant. If we were to incur significant increases in employee medical costs and related items, whether due to such laws and regulations or otherwise, it could adversely impact our operating results.

***Environmental costs could decrease our net cash flow and adversely affect our profitability.***

Our operations are subject to extensive regulations governing the creation, use, transportation and disposal of wastes and hazardous substances, air and water emissions, remediation, workplace exposure and other environmental matters. The costs of complying with such laws and regulations, including participation in assessments and clean-ups of sites, as well as internal voluntary programs, can be significant and will continue to be so for the foreseeable future. Future environmental regulations could impose stricter compliance requirements on us and the markets that we serve. Additional pollution control equipment, process changes, or other environmental control measures may be needed at some of our facilities to meet future requirements. Additionally, evolving regulatory standards and expectations could result in increased litigation and / or increased costs of compliance with environmental laws, all of which could have a material and adverse effect on our business, financial condition, results of operations and cash flows.

Environmental matters for which we may be liable may arise in the future at our present sites, at previously owned sites, sites previously operated by us, sites owned by our predecessors or sites that we may acquire in the future. Our operations or liquidity in a particular period could be affected by certain health, safety or environmental matters, including remediation costs and damages related to several sites. The properties we own or lease are located in areas with a history of heavy industrial use. See “Business—Government Regulation and Environmental Matters.” The CERCLA established responsibility for clean-up without regard to fault for persons who have released or arranged for disposal of hazardous substances at sites that have become contaminated and for persons who own or operate contaminated facilities. In many cases, courts have imposed joint and several liability on parties at CERCLA clean-up sites. Because a number of our properties are located in or near industrial or light industrial use areas, they may have been contaminated by pollutants which may have migrated from neighboring facilities or have been released by prior occupants. Some of our properties have been affected by releases of cutting oils and similar materials, and we are investigating and remediating such known contamination pursuant to applicable environmental laws. The costs of these clean-ups have not been material in the past. We are not currently subject to any material claims or notices with respect to clean-up or remediation under CERCLA or similar laws for contamination at our leased or owned properties or at any off-site location. However, we cannot rule out the possibility that we could be notified of such claims in the future. It is also possible that we could be identified by the Environmental Protection Agency, a state agency or one or more third parties as a potentially responsible party under CERCLA or under analogous state laws.

On November 19, 2007, we acquired the assets and operations relating to the worldwide metals business of Olin Corporation. Olin Corporation agreed to retain liability arising out of then existing conditions on certain of our properties for any remedial actions required by environmental laws, and agreed to indemnify us for all or part of a number of other environmental liabilities. Since 2007, Olin Corporation has been performing remedial actions at the facilities in East Alton, Illinois and Waterbury, Connecticut, and has been participating in remedial actions at our other properties as well. If Olin Corporation were to stop its environmental remedial activities at our properties, we could be required to assume responsibility for these activities, the cost of which could be material. For additional information concerning the indemnity granted to us by Olin Corporation for environmental liabilities, see “Business—Government Regulation and Environmental Matters.”

***New governmental regulation of greenhouse gas emissions may subject us to significant new costs and restrictions on our operations.***

In the past, Congress has considered legislation that would regulate greenhouse gas emissions, including a cap-and-trade system, under which emitters would be required to buy allowances to offset emissions of greenhouse gas. In addition, several states, including states where we have manufacturing plants, are considering various greenhouse gas registration and reduction programs. The EPA has also proposed several comprehensive regulations that would require reductions in greenhouse gas emissions by several types of sources. Certain of our manufacturing plants use significant amounts of energy, including electricity, natural gas and diesel, and certain of our plants emit amounts of greenhouse gas above certain minimum thresholds that are likely to be regulated. Greenhouse gas regulation could increase the price of the electricity we purchase, increase costs for our use of natural gas, potentially restrict access to, or the use of, natural gas, require us to purchase allowances to offset our own emissions, require operational changes or the use of new equipment or result in an overall increase in our costs of raw materials, any one of which could significantly increase our costs or capital expenditures, reduce our competitiveness or otherwise negatively affect our business, financial condition or results of operations. It is too early to predict how any potential greenhouse gas regulation may affect us.

***We may be subject to litigation that could strain our resources and distract management.***

From time to time, we are involved in a variety of claims, lawsuits and other disputes arising in the ordinary course of business. These suits concern issues including product liability, contract disputes, employee-related matters and personal injury matters. For example, if we were found liable under product liability claims, we could be required to pay substantial monetary damages and see a decrease in demand for our products. It is not feasible to predict the outcome of all pending suits and claims, and the ultimate resolution of these matters as well as future lawsuits could have a material adverse effect on our business, financial condition, results of operations, cash flows or reputation.

Further, even if we successfully defended ourselves against a claim, we could be forced to spend a substantial amount of money in litigation expenses, our management could be required to spend time and resources to defend against these claims, we could face negative publicity or our reputation could otherwise suffer, any of which could result in a decrease in demand for our products or otherwise harm our business.

***Failure to achieve and maintain effective internal controls could adversely affect our business and stock price.***

Our management is responsible for establishing and maintaining effective internal control over financial reporting. Internal control over financial reporting is a process to provide reasonable assurance regarding the reliability of financial reporting in accordance with accounting principles generally accepted in the U.S. Due to its inherent limitations, internal control over financial reporting is not intended to provide absolute assurance that we would prevent or detect a misstatement of our financial statements or fraud. While we continue to evaluate our internal controls, we cannot be certain that these measures will ensure that we implement and maintain adequate controls over our financial processes and reporting in the future. Any failure to maintain an effective system of internal control over financial reporting could limit our ability to report our financial results accurately and timely or to detect and prevent fraud. Further, we may be required to expend substantial funds and resources in order to rectify any deficiencies in our internal controls. A significant financial reporting failure or material weakness in internal control over financial reporting could cause a loss of investor and lender confidence and it could have a material adverse effect on our ability to fund our operations.

***Failure to protect, or uncertainty regarding the validity, enforceability or scope of, our intellectual property rights or the expiration of our intellectual property rights could impair our competitive position.***

We rely on a combination of patents, trademarks, trade secrets and other intellectual property rights, in addition to contractual rights, to protect the intellectual property we use in our business. Because the intellectual property associated with our products, including Eco Brass<sup>®</sup> technology, is evolving and rapidly changing, our current intellectual property rights may not protect us adequately. Furthermore, it is possible that our intellectual property rights could be challenged, invalidated, violated or made obsolete by our competitors or third parties, or our pending patent applications may not be granted.

Because the extent to which any new technologies will enjoy intellectual property protection is uncertain, there can be no assurance that we will be able to maintain our competitive position by enforcing intellectual property rights in the future. Our inability to protect our intellectual property adequately for these and other reasons could result in weakened demand for our products and services, which could result in a material adverse effect on our business, financial condition, results of operations or cash flows.

In addition, our commercial success will continue to depend in part on our ability to make and sell our products or provide our services without infringing the patents or proprietary rights of third parties. We face these risks with respect to intellectual property that we have developed internally, as well as with respect to intellectual property rights we have acquired from third parties. For example, Chase Brass has entered into agreements with Mitsubishi Shindoh pursuant to which Chase Brass has access to and the right to use certain of its technologies including lead-free Eco Brass<sup>®</sup> rod and the sublicensing of lead-free Eco Brass<sup>®</sup> ingot. To the extent that Mitsubishi Shindoh fails to adequately protect the technologies upon which we rely, our competitors may be able to use such technologies or develop similar technologies independently.

If the technologies upon which we rely infringe upon the patents or proprietary rights of third parties, we may be unable to continue using such technologies or we may face lawsuits related to our past use of these technologies. Furthermore, our competitors, who have made significant investments in competing technologies or products, may seek to apply for and obtain patents that will prevent, limit or interfere with our ability to make or sell our products or provide our services.

If we are unsuccessful in defending against any challenge to our rights to market and sell our products, our rights to use third-party technologies or to provide our services, we may, among other things, be required to:

- pay actual damages, royalties, lost profits and / or increased damages and the third party's attorneys' fees, which may be substantial;
- cease the development, manufacture and / or marketing of our products or services that use the intellectual property in question through a court-imposed injunction or settlement agreement;
- expend significant resources to modify or redesign our products or other technology or services so that they do not infringe the intellectual property rights of others or to develop or acquire non-infringing technology, which may not be possible; or
- obtain licenses to the disputed rights, which could require us to pay substantial upfront fees and future royalty payments and may not be available to us on acceptable terms, if at all.

Even if we successfully defend any infringement claims, the expense, time, delay and burden on management of litigation could prevent us from maintaining or increasing our business. Further, negative publicity could decrease demand for our products and services and cause our revenues to decline, thus harming our operating results significantly.

Finally, for our products that are covered on patent protection, once a patent has expired, the product is generally open to competition. For example, patent protection for the most popular versions of Eco Brass<sup>®</sup> expires in May 2019. The expiration of such patent could enable other companies to compete more effectively with us by allowing our competitors to make and sell products substantially similar to those we offer. This could negatively impact our ability to produce and sell the associated products, thereby adversely affecting our operations.

***If we are unable to protect the confidentiality of our proprietary information and know-how, the value of our technology, products and services could be harmed significantly.***

We rely on trade secrets, know-how and other proprietary information in operating our business. We seek to protect this information, in part, through the use of confidentiality agreements with employees, consultants, advisors and others who may have access to such proprietary information upon commencement of their relationships with us. Nonetheless, those agreements may not provide adequate protection for our trade secrets, know-how or other proprietary information and prevent their unauthorized use or disclosure. In the event of unauthorized use or disclosure of our trade secrets or proprietary information, these agreements may not provide meaningful protection, particularly for our trade secrets or other confidential information.

The risk that other parties may breach confidentiality agreements or that our trade secrets become known or independently discovered by competitors, could harm us by enabling our competitors, who may have greater experience and financial resources, to copy or use our trade secrets and other proprietary information in the advancement of their products, methods or technologies. The disclosure of our trade secrets would impair our competitive position, thereby weakening demand for our products or services and harming our ability to maintain or increase our customer base.

In addition, to the extent that we do not fulfill our contractual or other obligations to adequately protect the technologies to which we have been granted access by Mitsubishi Shindoh, we could be liable for any resulting harm to its business or could lose further access to this technology, which could harm our business, operating results or financial condition.

***Disruption or failures of our information technology systems could have a material adverse effect on our business.***

The operation of the Company's business depends on the Company's information technology systems, most of which have not been updated for many years. As a result, our information technology systems are more susceptible to security breaches, operational data loss, general disruptions in functionality, and may not be compatible with new technology. We depend on our information technology systems for the effectiveness of our operations and to interface with our customers, as well as to maintain financial records and accuracy. Disruption or failures of our information technology systems or security breaches could impair our ability to effectively and timely provide our services and products and maintain our financial records, which could damage our reputation and have a material adverse effect on our business. Olin Brass and A.J. Oster began the process of implementing fully integrated enterprise resource planning ("ERP") systems to replace their current management information systems and plan to implement the systems in a phased approach over the course of the next several years, and implemented the first phase in early fiscal 2017. These implementations may present challenges. Such challenges include, among other things, training of personnel, communication of new rules and procedures, changes in corporate culture, migration of data and the potential instability of the new system. Furthermore, large-scale system implementations are complex and time-consuming projects that are capital intensive and can span several months or even years. Certain of our business and financial processes also may require transformation in order to effectively leverage the ERP system's benefits. The ERP system implementation may not result in the anticipated improvements and the cost of implementation may outweigh the benefits. There can be no assurance that the ERP system will be successfully implemented, and failure to do so could adversely affect our business, financial condition, results of operations and the effectiveness of our internal controls over financial reporting.

***Global Brass and Copper Holdings, Inc. is a holding company and relies on future dividends and other payments, advances and transfers of funds from its subsidiaries to meet its financial obligations and provide cash for any dividends it might pay in the future.***

Global Brass and Copper Holdings, Inc. has no direct operations and derives all of its cash flow from its subsidiaries. Because Global Brass and Copper Holdings, Inc. conducts its operations through its subsidiaries, Global Brass and Copper Holdings, Inc. depends on those entities for dividends and other payments to generate the funds necessary to meet its financial obligations, and to pay any dividends with respect to its common stock. Legal and contractual restrictions in the credit agreement governing the 2016 ABL Facility, the Term Loan B Facility and other debt agreements governing current and future indebtedness of Global Brass and Copper Holdings, Inc.'s subsidiaries, as well as the financial condition and operating requirements of Global Brass and Copper Holdings, Inc.'s subsidiaries, may limit the ability of Global Brass and Copper Holdings, Inc. to obtain cash from its subsidiaries. The earnings from, or other available assets of, Global Brass and Copper Holdings, Inc.'s subsidiaries may not be sufficient to pay dividends or make distributions or loans to enable Global Brass and Copper Holdings, Inc.'s to pay any dividends on our common stock. See "Risks Related to an Investment in our Common Stock—Our ability to pay regular dividends to our shareholders is subject to the discretion of our Board of Directors and may be limited by our debt agreements and limitations in Delaware law."

***We face a number of risks related to future acquisitions and joint ventures.***

We may continue to seek opportunities for further acquisitions to supplement our operations and for expansion of our international presence, particularly in Asia, through joint ventures.

Acquisitions and joint ventures involve a number of risks which could have an adverse effect on our business, financial condition, results of operations and cash flows, including the following:

- we may experience adverse short-term effects on our operating results;
- we may be unable to successfully and rapidly integrate the new businesses, personnel and products with our existing business, including financial reporting, management and information technology systems;
- we may experience higher than anticipated costs of integration and unforeseen operating difficulties and expenditures, including potential disruption of our ongoing business and distraction of management;
- an acquisition may be in a market or geographical area in which we have little experience and could increase the scope, geographic diversity and complexity of our operations;
- the acquisition or joint venture formation process may require significant attention by our senior management and the engagement of outside advisors (and the payment of related fees), and proposed acquisitions and joint ventures may not be successfully completed;
- we may lose key employees or customers of the acquired company; and
- we may encounter unknown contingent liabilities that could be material.

In addition, we may require additional debt or equity financing for future acquisitions, and such financing may not be available on favorable terms, if available at all. We may not be able to successfully integrate or profitably operate any new business we acquire, and we cannot assure you that any such acquisition will meet our expectations. The process of integrating acquired operations into our existing operations may result in unforeseen operating difficulties and may require significant financial resources that would otherwise be available for the ongoing development or expansion of existing operations. Finally, in the event we decide to discontinue pursuit of a potential acquisition, we will be required to immediately expense all costs incurred in pursuit of the possible acquisition, which may have an adverse effect on our results of operations in the period in which the expense is recognized.

***Certain of our operations are conducted through a joint venture which has unique risks.***

Certain of our operations are conducted through our joint venture located in China. With respect to our joint venture, we may share ownership and management responsibilities with one or more partners that may not share our goals and objectives. Operating a joint venture requires us to operate the business pursuant to the terms of the agreement that we entered into with our partners, including additional organizational formalities, as well as to share information and decision making. As a result, our investments in joint ventures involve risks that are different from the risks involved in owning facilities and operations independently. These risks include the possibility that our joint ventures or our partners: have economic or business interests or goals that are or become inconsistent with our business interests or goals; are in a position to take action contrary to our instructions, requests, policies or objectives; subject the joint venture to liabilities exceeding those contemplated; take actions that reduce our return on investment; or take actions that harm our reputation or restrict our ability to run our business. Additionally, our ability to sell our interest in a joint venture may be subject to contractual and other limitations. Accordingly, any such occurrences could adversely affect our financial condition, operating results and cash flows.

**Risks Related to an Investment in Our Common Stock**

***The trading price of our common stock may be adversely affected if an active trading market in our common stock is not sustained. Our stock price may be volatile, and you may be unable to resell your shares at or above the purchase price or at all.***

We cannot predict the extent to which investor interest will sustain an active trading market. The market price of our common stock will be subject to significant fluctuations in response to, among other factors, variations in our operating results and market conditions specific to our industry. If an active public market is not sustained, it may be difficult for you to sell your shares at a price that is attractive to you, or at all.

In addition, volatility in the market price of our common stock may prevent you from being able to sell your common stock at or above the price you paid for your common stock. The market price for our common stock could fluctuate for various reasons, including:

- our operating and financial performance and prospects;
- the price outlook for copper and copper-alloys;
- our quarterly or annual earnings or those of other companies in our or other industries;
- conditions that impact demand for our products and services;
- future announcements concerning our business or our competitors' businesses;
- our results of operations that vary from those of our competitors;
- shrinkage from our processing operations;
- the public's reaction to our press releases, other public announcements and filings with the SEC;
- changes in earnings estimates or recommendations by securities analysts who track our common stock;
- market and industry perception of our success, or lack thereof, in pursuing our growth strategy;
- general market, economic and political conditions;
- strategic actions by us or our competitors, such as acquisitions or restructurings;
- changes in government and environmental regulation;
- changes in accounting standards, policies, guidance, interpretations or principles;
- arrival and departure of key personnel;
- the number of shares to be publicly traded in the future;
- sales of common stock by us, members of our management team or other holders;
- adverse resolution of new or pending litigation against us;
- business disruptions, costs and future events related to proxy contests or other shareholder activity;
- any announcements by third parties of significant claims or proceedings against us;

- changes in general market, economic and political conditions and their effects on global economies or financial markets, including those resulting from natural disasters, terrorist attacks, acts of war, widespread illness and responses to such events; or
- any material weakness in our internal control over financial reporting.

These and other factors may lower the market price of our common stock, regardless of our actual operating performance. As a result, our common stock may trade at prices significantly below the price at which it was purchased.

***Future sales of shares of our common stock in the public market could cause our stock price to fall significantly even if our business is profitable.***

We may issue shares of our common stock or other securities from time to time as consideration for future acquisitions or investments. If any such acquisition or investment is significant, the number of shares of our common stock, or the number or aggregate principal amount, as the case may be, of other securities that we may issue may in turn be substantial. We may also grant registration rights covering those shares of our common stock or other securities in connection with any such acquisitions or investments.

We cannot predict the size of future issuance of our common stock or the effect, if any, that future issuances and sales of our common stock will have on the market price of our common stock. Sales of substantial amounts of our common stock (including shares of our common stock issued in connection with an acquisition or investment), or the perception that such sales could occur, may adversely affect prevailing market prices for our common stock.

***Our ability to pay regular dividends to our shareholders is subject to the discretion of our Board of Directors and may be limited by our debt agreements and limitations in Delaware law.***

On November 7, 2013, we announced that our Board of Directors had approved the initiation of a quarterly dividend of \$0.0375 per share of our common stock to our stockholders and the Board of Directors has declared a dividend of \$0.0375 per share of common stock in every subsequent quarter to date. Any future determination to pay dividends, however, will be at the discretion of the Board of Directors and will be dependent on then-existing conditions, including our financial condition, earnings, legal requirements including limitations in Delaware law, restrictions in our debt agreements, including those governing the 2016 ABL Facility and the Term Loan B Facility, that limit our ability to pay dividends to stockholders, our strategic opportunities and other factors the Board of Directors deems relevant. The Board of Directors may, in its sole discretion, change the amount or frequency of dividends or discontinue the payment of dividends entirely. At this time, the agreement governing the 2016 ABL Facility and the agreement governing the Term Loan B Facility generally restrict or limit the payment of dividends to shareholders. The agreement governing the Term Loan B Facility includes a “restricted payments” basket based on Consolidated Net Income (as defined in the agreement). It increases based on 50% of Consolidated Net Income (as so defined) and decreases by 100% of Consolidated Net Loss (as so defined). The basket may be negative or insufficient to pay dividends. For the foregoing reasons, you will not be able to rely on dividends to receive a return on your investment. Accordingly, if you purchase shares, realization of a gain on your investment may depend on the appreciation of the price of our common stock, which may never occur.

***Provisions in our charter and bylaws and provisions of Delaware law may delay or prevent our acquisition by a third party, which might diminish the value of our common stock.***

The amended and restated certificate of incorporation and amended and restated bylaws of Global Brass and Copper Holdings, Inc. contain several provisions that may make it more difficult or expensive for a third party to acquire control of us without the approval of the Board of Directors. These provisions also may delay, prevent or deter a merger, acquisition, tender offer, proxy contest or other transaction that might otherwise result in our stockholders receiving a premium over the market price for their common stock. The provisions include, among others:

- a prohibition on actions by written consent of the stockholders;
- removal of directors only for cause;
- vacancies on the Board of Directors may be filled only by the Board of Directors;
- no cumulative voting;
- advance notice requirements for stockholder proposals and director nominations; and
- supermajority approval requirement for an amendment of the amended and restated certificate of incorporation or amended and restated bylaws.

Section 203 of the Delaware General Corporation Law may affect the ability of an “interested stockholder” to engage in certain business combinations, including mergers, consolidations or acquisitions of additional shares, for a period of three years following the time that the stockholder becomes an “interested stockholder.” An “interested stockholder” is defined to include persons owning directly or indirectly 15% or more of the outstanding voting stock of a corporation. Global Brass and Copper Holdings, Inc. has elected in its amended and restated certificate of incorporation not to be subject to Section 203 of the Delaware General Corporation Law. Nevertheless, the amended and restated certificate of incorporation contains provisions that have the same effect as Section 203 of the Delaware General Corporation Law.

The provisions of the amended and restated certificate of incorporation and amended and restated bylaws of Global Brass and Copper Holdings, Inc. and the ability of the Board of Directors to create and issue a new series of preferred stock or implement a stockholder rights plan could discourage potential takeover attempts and reduce the price that investors might be willing to pay for shares of our common stock in the future, which could reduce the market price of our common stock.

***If securities analysts do not publish research or reports about our company, or if they issue unfavorable commentary about us or our industry or downgrade our common stock, the price of our common stock could decline.***

The trading market for our common stock depends in part on the research and reports that third-party securities analysts publish about our company and our industry. One or more analysts could downgrade our common stock or issue other negative commentary about our company or our industry. In addition, we may be unable or be slow to attract research coverage. Alternatively, if one or more of these analysts cease coverage of our company, we could lose visibility in the market. As a result of one or more of these factors, the trading price of our common stock could decline.

***Any issuance of preferred stock could make it difficult for another company to acquire us or could otherwise adversely affect holders of our common stock, which could depress the price of our common stock.***

The Board of Directors has the authority to issue preferred stock and to determine the preferences, limitations and relative rights of shares of preferred stock and to fix the number of shares constituting any series and the designation of such series, without any further vote or action by its stockholders. Such preferred stock could be issued with voting, liquidation, dividend and other rights superior to the rights of common stock. The potential issuance of preferred stock may delay or prevent a change in control of Global Brass and Copper Holdings, Inc., discouraging bids for our common stock at a premium over the market price, and adversely affect the market price and the voting and other rights of the holders of our common stock.

## CAUTIONARY STATEMENT CONCERNING FORWARD-LOOKING STATEMENTS

This report contains “forward-looking statements” that involve risks and uncertainties. You can identify forward-looking statements because they contain words such as “believes,” “expects,” “projects,” “may,” “would,” “should,” “seeks,” “approximately,” “intends,” “plans,” “estimates,” “anticipates” or similar expressions that relate to our strategy, plans or intentions. All statements we make relating to our estimated and projected earnings, margins, costs, expenditures, cash flows, growth rates and financial results or to our expectations regarding future industry trends are forward-looking statements. In addition, we, through our senior management, from time to time make or may make forward-looking public statements concerning our expected future operations and performance and other developments. These forward-looking statements are subject to known and unknown risks, uncertainties and other factors that may change at any time, and, therefore, our actual results may differ materially from those that we expected. We derive many of our forward-looking statements from our operating budgets and forecasts, which are based upon many detailed assumptions. While we believe that our assumptions are reasonable, we caution that it is very difficult to predict the impact of known factors, and, of course, it is impossible for us to anticipate all factors that could affect our actual results. All forward-looking statements contained in this report are based upon information available to us on the date of this report.

Important factors that could cause actual results to differ materially from our expectations, which we refer to as “cautionary statements,” are disclosed under the “Risk Factors” section in Item 1A in this annual report on Form 10-K. All forward-looking information in this report and subsequent written and oral forward-looking statements attributable to us, or persons acting on our behalf, are expressly qualified in their entirety by the cautionary statements. Some of the factors that we believe could affect our results include, but are not limited to:

- general economic conditions affecting the markets in which our products are sold;
- our ability to implement our business strategies, including acquisition activities;
- our ability to maintain business relationships with our customers on favorable terms;
- our ability to continue implementing our balanced book approach to substantially reduce the impact of fluctuations in metal prices on our earnings and operating margins;
- shrinkage from processing operations and metal price fluctuations, particularly copper;
- the condition of various markets in which our customers operate, including the housing and commercial construction industries;
- the impact of a loss in customer volume or demand or a shift by customers of their manufacturing or sourcing offshore;
- our ability to compete effectively with existing and new competitors;
- limitations on our ability to purchase raw materials, particularly copper;
- fluctuations in commodity and energy prices and costs;
- our ability to maintain sufficient liquidity as commodity and energy prices rise;
- the effects of industry consolidation or competition in our business lines;
- operational factors affecting the ongoing commercial operations of our facilities, including technology failures, catastrophic weather-related damage, regulatory approvals, permit issues, unscheduled blackouts, outages or repairs or unanticipated changes in energy costs;
- operational factors affecting the ongoing commercial operations of our facilities resulting from inclement weather conditions;
- supply, demand, prices and other market conditions for our products;
- our ability to accommodate increases in production to meet demand for our products;
- our ability to continue our operations internationally and the risks applicable to international operations;
- government regulations relating to our products and services, including new legislation relating to derivatives and the elimination of the dollar bill and EPA regulations regarding the registration and marketing of bactericidal copper products;
- our ability to maintain effective internal control over financial reporting;
- our ability to realize the planned cost savings and efficiency gains as part of our various initiatives;
- our ability to successfully execute acquisitions and joint ventures;
- workplace safety issues;
- our ability to retain key employees;
- adverse developments in our relationship with our employees or the future terms of our collective bargaining agreements;
- the impact of our substantial indebtedness, including the effect of our ability to borrow money, fund working capital and operations and make new investments;
- rising employee medical costs;
- environmental costs and our exposure to environmental claims;

- our exposure to product liability claims;
- our ability to successfully manage litigation;
- our ability to maintain cost-effective insurance policies;
- our ability to maintain the confidentiality of our proprietary information, to protect the validity, enforceability or scope of our intellectual property rights and manage litigation regarding our intellectual property rights;
- litigation regarding our intellectual property rights could affect us and harm our business;
- fluctuations in interest rates; and
- restrictive covenants in our indebtedness that may adversely affect our operational flexibility.

We caution you that the foregoing list of factors may not contain all of the material factors that are important to you. In addition, in light of these risks and uncertainties, the matters referred to in the forward-looking statements contained in this report may not in fact occur. Accordingly, investors should not place undue reliance on those statements. We undertake no obligation to publicly update or revise any forward-looking statement as a result of new information, future events or otherwise, except as otherwise required by law.

**Item 1B. Unresolved Staff Comments.**

None.

**Item 2. Properties.**

The following table summarizes our major facilities as of December 31, 2016:

<u>Entity</u>	<u>Operation</u>	<u>Location</u>	<u>Owned or Leased</u>	<u>Products</u>
Corporate	Corporate Headquarters	Schaumburg, Illinois	Leased	N/A
Olin Brass segment	Mill Products	East Alton, Illinois	Owned (1)	Copper-based strip Clad copper & copper-alloy strip
	Fabricated Products	East Alton, Illinois	Owned (1)	Stamped & drawn copper-based parts
	Fineweld Tube	Cuba, Missouri	Owned	Welded copper-alloy tube
	Bryan Metals	Bryan, Ohio	Owned	Copper-based strip
				Copper-based strip and foil
	Somers Thin Strip	Waterbury, Connecticut	Owned	Stainless steel light gauge strip
	Olin Luotong Metals	Guangzhou, China	Owned building; 50-year lease on land	Copper-based strip
	Olin Brass Headquarters	Louisville, Kentucky	Leased	N/A
Chase Brass segment	Manufacturing	Montpelier, Ohio	Owned	Copper-based rod
	Warehouse	Los Angeles, California	Leased	Copper-based rod
A.J. Oster segment	Processing and Distribution	Warwick, Rhode Island	Leased	
	Processing and Distribution	Alliance, Ohio	Owned	Copper-alloy strip, aluminum foil, aluminum strip, specialty stainless steel strip and specialty rod
	Processing and Distribution	Carol Stream, Illinois	Owned	
	Processing and Distribution	Yorba Linda, California	Leased	
	Processing and Distribution	Caguas, Puerto Rico	Owned	
	Processing and Distribution	Queretaro, Mexico	Owned	
	A.J. Oster Headquarters	Warwick, Rhode Island	Leased	N/A

(1) Certain utility infrastructure at the East Alton, Illinois facility is leased by Olin Brass from Olin Corporation.

Pursuant to a 2007 transition services agreement, Olin Corporation supplies Olin Brass with natural gas, water, steam and waste water disposal, among other things, at Olin Brass's East Alton, Illinois facility. According to the transition services agreement, Olin Corporation has agreed to provide utility services until Olin Corporation ceases operations at its East Alton, Illinois facility, at which time Olin Brass has the option to acquire the utilities infrastructure at fair market value. The transition services agreement renewed automatically in November 2016 and automatically renews for one-year terms thereafter subject to termination by either party upon one year's notice.

**Item 3. Legal Proceedings.**

We are currently and from time to time involved in a variety of claims, lawsuits and other disputes arising in the ordinary course of business, none of which management currently believes are, or will be, material to our business.

**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.

#### *Holders of Record*

Our common stock is traded on the New York Stock Exchange (ticker symbol BRSS). As of February 21, 2017, we had approximately 77 holders of record of our common stock.

#### *Market Information for Common Stock*

The high and low selling prices per share of our common stock, as well as the cash dividend declared per share of our common stock, for the quarters during 2016 and 2015 were as follows:

	2016			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
High	\$ 25.31	\$ 28.80	\$ 30.11	\$ 35.00
Low	18.97	23.43	26.72	23.85
Cash dividends declared	0.0375	0.0375	0.0375	0.0375

	2015			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
High	\$ 15.94	\$ 18.90	\$ 21.43	\$ 24.05
Low	12.30	14.46	15.96	19.88
Cash dividends declared	0.0375	0.0375	0.0375	0.0375

For certain information regarding our equity compensation plans, see Part III—Item 12, “Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters.”

#### *Dividends*

The payment of dividends in the future will be at the discretion of our Board of Directors and will depend on a number of factors, including our financial and operating results, financial position, anticipated cash requirements and restrictions contained in the agreements governing our asset-based revolving loan facility, which matures on July 19, 2021 (“2016 ABL Facility”) and our term loan facility, which matures on July 18, 2023 (“Term Loan B Facility”). Currently, we have significant availability under our credit agreements to pay dividends consistent with past practice and future expectations. We can give no assurance that dividends will be paid in the future. See Note 11, “Financing,” of our consolidated financial statements, which are included elsewhere in this report, for further discussion of these restrictive covenants.

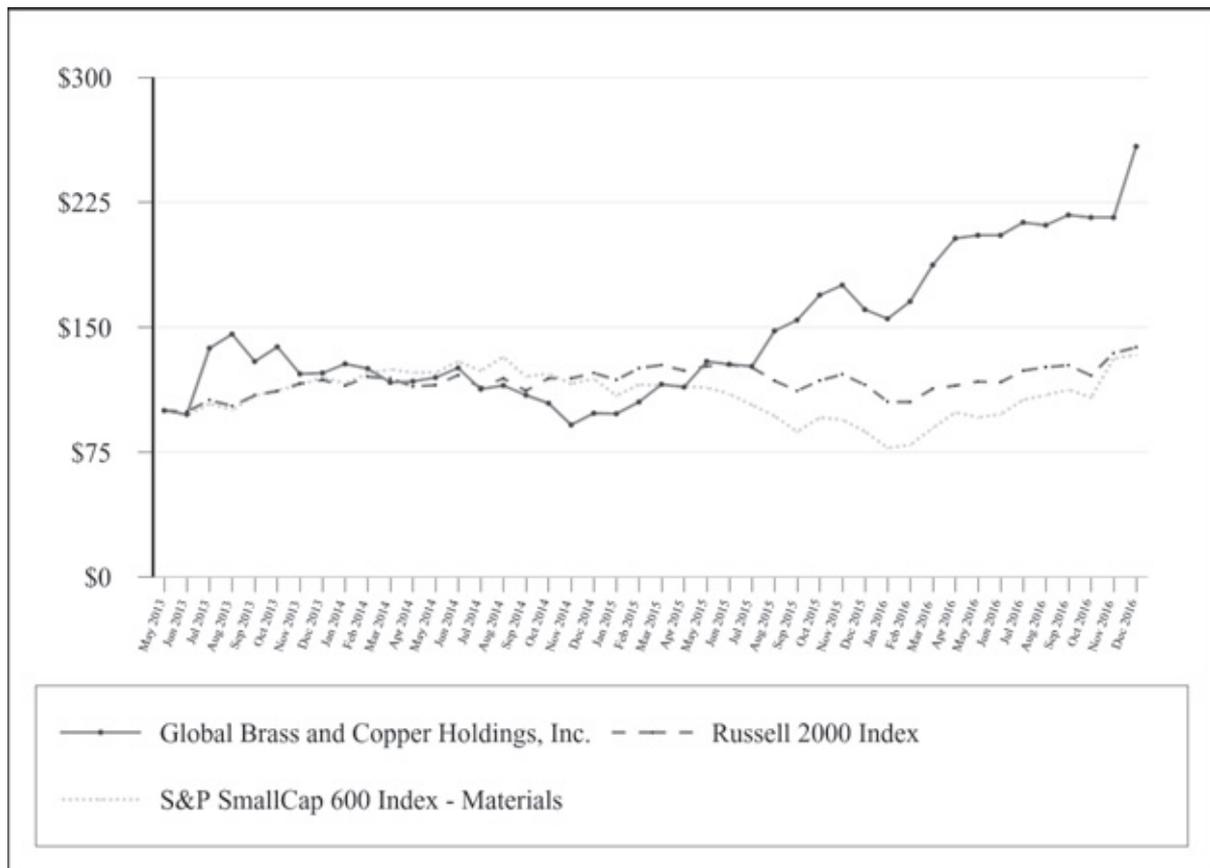
#### *Issuer Purchases of Equity Securities*

None.

**Performance Graph**

*This performance graph shall not be deemed “soliciting material” or to be “filed” with the SEC for purposes of Section 18 of the Securities Exchange Act of 1934, as amended (Exchange Act), or otherwise subject to the liabilities under that Section, and shall not be deemed to be incorporated by reference into any filing of Global Brass and Copper Holdings, Inc. under the Securities Act of 1933, as amended, or the Exchange Act.*

The following graph shows a comparison from May 23, 2013 (the date our common stock commenced trading on the New York Stock Exchange) through December 31, 2016 of the cumulative total return for our common stock, the Russell 2000 Index (“Total Market Index”) and the S&P SmallCap 600 Index—Materials (“Materials Index”). The graph assumes that \$100 was invested at the market close on May 23, 2013 in the common stock of Global Brass and Copper Holdings, Inc., the Total Market Index and the Materials Index and data assumes reinvestments of dividends. The stock price performance of the following graph is not necessarily indicative of future stock price performance.



## Item 6. Selected Financial Data.

Set forth below is selected historical consolidated financial data of our business as of the dates and for the periods indicated. The selected historical consolidated financial data for the years ended December 31, 2016, 2015 and 2014 and as of December 31, 2016 and 2015 have been derived from our consolidated financial statements included elsewhere in this report. The selected historical consolidated financial data as of December 31, 2014, 2013 and 2012 and for the years ended December 31, 2013 and 2012 have been derived from our consolidated financial statements not included in this report.

The selected historical consolidated financial data should be read in conjunction with the information about the limitations on comparability of our financial results, including as a result of acquisitions. See Item 7, “Management’s Discussion and Analysis of Financial Condition and Results of Operations,” Item 1A, “Risk Factors,” and our consolidated financial statements and related notes included in Item 8 to this report.

(in millions, except per share data)

	Year Ended December 31,				
	2016	2015	2014	2013	2012
<b>Statements of Operations Data:</b>					
Net sales	\$ 1,338.5	\$ 1,506.2	\$ 1,711.4	\$ 1,758.5	\$ 1,650.5
Cost of sales	(1,156.9)	(1,335.9)	(1,546.8)	(1,576.2)	(1,467.3)
Gross profit	181.6	170.3	164.6	182.3	183.2
Selling, general and administrative expenses (1)	(82.8)	(83.2)	(76.9)	(110.8)	(92.7)
Operating income	98.8	87.1	87.7	71.5	90.5
Interest expense	(26.2)	(39.1)	(39.6)	(39.8)	(39.7)
Loss on extinguishment of debt	(23.4)	(3.1)	—	—	(19.6)
Gain on sale of investment in joint venture	—	6.3	—	—	—
Other income (expense), net	0.2	0.2	(0.5)	(0.3)	(0.1)
<b>Income before provision for income taxes and equity income</b>	<b>49.4</b>	<b>51.4</b>	<b>47.6</b>	<b>31.4</b>	<b>31.1</b>
Provision for income taxes	(16.6)	(15.9)	(16.6)	(22.2)	(19.2)
<b>Income before equity income</b>	<b>32.8</b>	<b>35.5</b>	<b>31.0</b>	<b>9.2</b>	<b>11.9</b>
Equity income, net of tax	—	0.3	1.1	1.5	1.0
<b>Net income</b>	<b>32.8</b>	<b>35.8</b>	<b>32.1</b>	<b>10.7</b>	<b>12.9</b>
Net income attributable to noncontrolling interest	(0.6)	(0.2)	(0.4)	(0.3)	(0.4)
<b>Net income attributable to Global Brass and Copper Holdings, Inc.</b>	<b>\$ 32.2</b>	<b>\$ 35.6</b>	<b>\$ 31.7</b>	<b>\$ 10.4</b>	<b>\$ 12.5</b>
<b>Per Share Data:</b>					
Cash dividends declared per common share (2)	\$ 0.1500	\$ 0.1500	\$ 0.1500	\$ 0.0375	\$ 7.5793
Basic net income attributable to Global Brass and Copper Holdings, Inc. per common share	\$ 1.50	\$ 1.67	\$ 1.50	\$ 0.49	\$ 0.59
Diluted net income attributable to Global Brass and Copper Holdings, Inc. per common share	\$ 1.49	\$ 1.66	\$ 1.49	\$ 0.49	\$ 0.59
Number of common shares used in basic per share calculations	21.4	21.3	21.2	21.1	21.1
Number of common shares used in diluted per share calculations	21.6	21.4	21.3	21.2	21.1
<b>Balance Sheet Data:</b>					
Cash	\$ 88.2	\$ 83.5	\$ 44.6	\$ 10.8	\$ 13.9
Total assets	582.6	557.2	566.3	537.7	490.3
Total debt (3)	316.0	343.1	371.4	369.5	377.1
Total liabilities	487.4	496.5	540.3	541.1	538.1
Total equity (deficit)	95.2	60.7	26.0	(3.4)	(47.8)

- (1) For the years ended December 31, 2013 and 2012, includes non-cash profits interest compensation expense of \$29.3 million and \$19.5 million, respectively. We did not record any non-cash profits interest compensation expense in 2016, 2015 or 2014.
- (2) In 2016, 2015, 2014 and 2013, we declared dividends of \$3.3 million, \$3.2 million, \$3.2 million and \$0.8 million, respectively, to the Company’s stockholders. In 2012, we used a portion of the net proceeds from the issuance of senior secured notes to pay a \$160.0 million distribution to Halkos, the sole stockholder of the Company prior to its initial public offering in May 2013.
- (3) Consists of long-term debt, capital lease obligations and current maturities of long-term debt (presented net of discount and net of deferred financing fees incurred in connection with the issuance of debt).

## **Item 7. Management’s Discussion and Analysis of Financial Condition and Results of Operations.**

*Readers should refer to the information presented under the caption “Risk Factors” for risk factors that may affect our future performance. The following discussion and analysis of financial condition and results of operations should be read in conjunction with “Selected Financial Data” and our consolidated financial statements and related notes included elsewhere in this report. In addition to historical data, this discussion contains forward-looking statements about our business, operations and financial performance based on current expectations that involve risks, uncertainties and assumptions. Our actual results may differ materially from those discussed in the forward-looking statements as a result of various factors, including but not limited to those discussed in the sections entitled “Risk Factors” and “Cautionary Statements Concerning Forward-Looking Statements” included elsewhere in this report.*

### **Overview**

#### **Our Company**

Global Brass and Copper Holdings, Inc. (“Holdings,” the “Company,” “we,” “us,” or “our”) was incorporated in Delaware on October 10, 2007. Holdings, through its wholly-owned principal operating subsidiary, Global Brass and Copper, Inc. (“GBC”), commenced commercial operations on November 19, 2007 through the acquisition of the metals business from Olin Corporation. The majority of our operations are managed through three reportable operating segments: Olin Brass, Chase Brass and A.J. Oster. We also have a Corporate entity which includes certain administrative costs and expenses and the elimination of intercompany balances.

We are a leading value-added converter, fabricator, processor and distributor of specialized non-ferrous products including a wide range of sheet, strip, foil, rod, tube and fabricated metal component products. While we primarily process copper and copper alloys, we also reroll and form certain other metals such as stainless steel, carbon steel and aluminum. Using processed scrap, virgin metals and other refined metals, we engage in metal melting and casting, rolling, drawing, extruding, welding and stamping to fabricate finished and semi-finished alloy products. Key attributes of copper and copper alloys are conductivity, corrosion resistance, strength, malleability, cosmetic appearance and bactericidal properties.

Our products are used in a variety of applications across diversified markets, including the building and housing, munitions, automotive, transportation, coinage, electronics / electrical components, industrial machinery and equipment and general consumer markets. We access these markets through direct mill sales, our captive distribution network and third-party distributors. We hold the exclusive production and distribution rights in North America for a lead-free brass rod product, which we sell under the Green Dot® and Eco Brass® brand names. The vertical integration of Olin Brass’s manufacturing capabilities and A.J. Oster’s distribution capabilities allows us to access customers with a wide variety of volume and service needs.

We service nearly 1,600 customers in 28 countries across four continents. We employ approximately 1,850 people and operate 11 manufacturing facilities and distribution centers across the United States (“U.S.”), Puerto Rico and Mexico.

We own 80% of a value-added service center in Guangzhou, China (“Olin Luotong Metals” or “OLM”); the other 20% is owned by Chinalco Luoyang Copper Co. Ltd. (“Chinalco”). Through Olin Luotong Metals, together with our sales offices in China and Singapore, we supply our products in China and throughout Asia.

Unlike traditional metals companies, in particular those that engage in mining, smelting and refining activities, we are purely a metal converter, fabricator, processor and distributor, and we do not attempt to generate profits from fluctuations in metal prices. Our financial performance is primarily driven by metal conversion economics, not by the underlying movements in the price of copper and the other metals we use. Through our “balanced book” approach, we strive to match the timing, quantity and price of our metal sales with the timing, quantity and price of our replacement metal purchases. This practice, along with our toll processing operations and last-in, first-out (“LIFO”) inventory accounting methodology, substantially reduces the financial impact of metal price movements on our earnings and operating margins.

#### **Our Operating Segments**

We operate through three reportable operating segments: Olin Brass, Chase Brass and A.J. Oster.

Our Olin Brass segment is the leading manufacturer, fabricator and converter of specialized copper and brass sheet, strip, foil, tube and fabricated components in North America. While primarily processing copper and copper alloys, the segment also rerolls and forms other metals such as stainless steel, carbon steel and aluminum. Olin Brass’s products are used in

five primary markets: munitions, coinage, automotive, building and housing and electronics / electrical components. In 2016, Olin Brass sold approximately 15% of its domestic copper-based products to A.J. Oster.

Chase Brass is a leading manufacturer of brass rod in North America. Chase Brass primarily manufactures brass rod, including round and other shapes, ranging from 1/4 inch to 4 1/2 inches in diameter. The key attributes of brass rod include its machinability, corrosion resistance and moderate strength, making it especially suitable for forging and machining products such as valves and fittings. Brass rod is generally manufactured from copper or copper-alloy scrap. Chase Brass produces brass rod used in production applications which can be grouped into four primary markets: building and housing, transportation, electronics / electrical components and industrial machinery and equipment.

A.J. Oster is a processor and distributor primarily of copper and copper-alloy sheet, strip and foil. A.J. Oster operates six strategically-located service centers in the United States, Puerto Rico and Mexico. Each A.J. Oster service center reliably provides a broad range of high quality products at quick lead-times in small quantities. These capabilities, combined with A.J. Oster's operations of precision slitting, hot tinning, traverse winding, cutting and special packaging, provide value to a broad customer base. A.J. Oster's products are used in three primary markets: building and housing, automotive and electronics / electrical components. In 2016, 51% of A.J. Oster's brass and copper material requirements were supplied by our Olin Brass segment.

All three segments generate revenue from product sales and earn a premium margin over the cost of metal as a result of our metal conversion, value-added processing, and service capabilities.

Corporate and other includes compensation for corporate executives and officers, corporate office and administrative salaries, and professional fees for accounting, tax and legal services. Corporate and other also includes interest expense, state and federal income taxes, overhead costs that management has not allocated to the operating segments, share-based compensation expense, gains and losses associated with certain acquisitions and dispositions and the elimination of intercompany sales and balances.

### ***Formation and Acquisition of the Worldwide Metals Business of Olin Corporation***

On October 10, 2007, the Company was formed by affiliates of KPS Capital Partners, L.P. ("KPS") as an acquisition vehicle to acquire the worldwide metals business of Olin Corporation, which was completed on November 19, 2007. The transaction was accounted for under the purchase method of accounting, and the assets and liabilities of the business were recorded at fair value at the acquisition date.

At the time of the transaction, the fair market value of the net assets acquired exceeded the purchase price in the acquisition. This resulted in a bargain purchase, and we reduced the value of all identified intangible assets and other noncurrent assets, including the acquired property, plant and equipment, to zero in the opening balance sheet as of the acquisition date. Accordingly, our fixed assets reflect only post-acquisition capital investments, and our cost of sales and selling, general and administrative expense, depending on the nature and use of the underlying asset, includes depreciation only on capital investments made after the acquisition date.

### ***Recent Transactions***

#### ***2016 Refinancing***

On July 18, 2016, we entered into a long-term credit agreement that matures on July 18, 2023 (the "Term Loan B Credit Agreement" and the loans thereunder, the "Term Loan B Facility").

The Term Loan B Facility provides for borrowings of \$320.0 million. Amounts outstanding under the Term Loan B Facility bear interest at a rate per annum equal to, at our option, either (1) 3.00% to 3.25% subject to a total net leverage ratio pricing grid set forth in the Term Loan B Credit Agreement plus an Alternate Base Rate (as defined in the Term Loan B Credit Agreement) or (2) 4.00% to 4.25% subject to a total net leverage ratio pricing grid set forth in the Term Loan B Credit Agreement plus the Adjusted LIBO Rate (as defined in the Term Loan B Credit Agreement). At December 31, 2016, amounts outstanding under the Term Loan B Facility accrued interest at a rate of 5.25%.

The Term Loan B Credit Agreement requires mandatory prepayments based on various events and circumstances as are customary in such agreements. In addition, starting on December 31, 2017, we are subject to a 50% excess cash flow sweep, subject to step-downs to 25% and 0% depending on the total net leverage ratio from time to time. We may, however, voluntarily prepay outstanding loans under the Term Loan B Facility at any time. In connection with the Term Loan B Facility, commencing on December 30, 2016, we must make quarterly payments of \$0.8 million with the balance expected to be due on July 18, 2023.

On July 18, 2016, we also entered into a credit agreement with a syndicate of lenders that matures on July 19, 2021 (the “ABL Credit Agreement” and the facility thereunder, the “2016 ABL Facility”). The 2016 ABL Facility is an asset-based revolving loan facility that provides for borrowings of up to the lesser of \$200.0 million or the borrowing base, in each case less outstanding loans and letters of credit.

Amounts outstanding, if any, under the 2016 ABL Facility bear interest at a rate per annum equal to, at our option, either (1) 0.25% to 0.75% subject to an average quarterly availability pricing grid set forth in the ABL Credit Agreement plus an Alternate Base Rate (as defined in the ABL Credit Agreement) or (2) 1.25% to 1.75% subject to an average quarterly availability pricing grid set forth in the ABL Credit Agreement plus the Adjusted LIBO Rate (as defined in the ABL Credit Agreement). Unused amounts under the 2016 ABL Facility incur an unused line fee of 0.375% or 0.25% per annum (depending on the percentage of aggregate revolving exposure), payable in arrears on a quarterly basis.

#### *Purchases and Redemption of Senior Secured Notes*

Prior to obtaining the Term Loan B Credit Agreement and the ABL Credit Agreement, our debt facilities consisted of our 9.50% senior secured notes due 2019 (“Senior Secured Notes”) and a former asset-based loan facility (“ABL Facility”).

During 2016, we purchased in the open market an aggregate of \$40.0 million principal amount of our then existing Senior Secured Notes for an aggregate purchase price of \$42.5 million, plus accrued interest. On July 18, 2016, we used a portion of the proceeds from our Term Loan B Facility to redeem the remaining \$305.3 million principal amount outstanding of our Senior Secured Notes. As part of this refinancing and in accordance with the indenture governing the Senior Secured Notes (“Indenture”), we called the notes at a redemption price of 104.75% plus accrued interest, and we terminated the related Indenture.

We recognized a loss on the extinguishment of debt in the year ended December 31, 2016 of \$23.4 million, which includes a premium of \$17.0 million and the write-off of \$6.4 million of unamortized debt issuance costs for both the Senior Secured Notes and the former ABL Facility. No amounts were outstanding under the former ABL Facility at the time of termination.

For additional information regarding the purchases of Senior Secured Notes and the 2016 Refinancing, see Note 11, “Financing,” of our consolidated financial statements, which are included elsewhere in this report.

### ***Key Business Principles Affecting Our Results of Operations***

#### *LIFO Accounting*

The metals component of inventories that is valued on last-in, first-out (“LIFO”) basis comprises approximately 70% of total inventory at December 31, 2016 and 2015, respectively. The impact of LIFO accounting on our financial results may be significant with respect to period-to-period comparisons depending on the fluctuations in our inventory levels. During 2016, 2015 and 2014, certain domestic metal inventory quantities were reduced, resulting in a liquidation of LIFO inventory layers. The effect of this reduction increased cost of sales by \$1.9 million, \$0.1 million and \$0.6 million in 2016, 2015 and 2014, respectively.

#### *Metal Cost*

We are a leading, value-added converter, fabricator, processor and distributor of specialized non-ferrous products in North America. We generate our profits from the conversion, manufacturing and fabrication of metal into end products, and not by taking advantage of fluctuations in the price of copper and other metals. Our business model uses various methods to substantially reduce the financial impact of fluctuations in metal prices, such that our operating margins are largely unaffected by trends in metal prices. Nevertheless, fluctuations in metal prices will impact the total amount of our net sales, the cost of shrinkage loss, the impact of LIFO liquidations (as previously discussed) and our working capital requirements.

Shrinkage loss, which is primarily the loss of metal that occurs in the melting and casting operations, is an inherent part of any metal casting process. While the shrinkage loss rate is very low relative to the total volume of metal cast, the cost of the shrinkage loss and its impact on financial performance increases as metal prices increase.

Over the last three years, approximately 25% of our sales volumes were made on a toll basis where our customers supply us with the metal and we charge them a processing or conversion fee to melt the metal and convert it into a finished product. For metal processed on a non-toll basis, we procure and own the metal until we sell it to the customer, whereby we charge them not only a conversion fee but also a metal replacement fee. For these non-toll sales, we use our balanced book

approach, discussed below, to substantially reduce the impact of metal price movements on earnings and operating margins.

Metal prices also impact our investment in working capital because our collection terms with our customers are longer than our payment terms to our suppliers. Therefore, when metal prices increase, even if the number of pounds processed does not change, our working capital requirements will also increase. When metal prices fall, the opposite occurs.

#### *Balanced Book*

The majority of our sales volume is from non-toll customers. To substantially reduce the financial impact of metal price volatility on earnings and operating margins on these non-toll sales, we use a balanced book approach to hedge the impact of metal price fluctuations. The balanced book approach minimizes the financial impact of metal price movements in the period between date of order and date of shipment by matching the timing, quantity and price of the metal cost recovery component of net sales made on a non-toll basis with the timing, quantity and price of the replacement metal purchases. For any non-toll sale, we seek to achieve our balanced book through one of the following three mechanisms:

- Metal sales and replacement purchases on “price date of shipment” terms, meaning that metal sale price to the customer and the purchase price for replacement metal from a supplier are set on the date of shipment. The customer bears the risk of metal price changes from the date of order to the date of shipment.
- Metal sales and replacement purchases on a “firm price basis,” meaning that metal sale price to the customer are fixed on the order date, and a matching replacement purchase at a fixed price is established with a metal supplier. The supplier therefore bears the risk of metal price changes from the date of order to the date of shipment.
- Metal sales on a firm price basis in circumstances where a matching firm price replacement purchase is unavailable: in this situation, we execute a forward purchase on “price date of shipment” terms by entering into a financial derivative transaction in the form of a forward purchase contract. The impact of price changes from date of order to the date of shipment on the previously required metal replacement purchase is offset by gains or losses on the derivative contract. The derivative counterparty bears the risk of metal price changes from the date of order to the date of shipment.

In 2016, approximately 60% of our non-toll sales volumes (45% of our total unit shipments) were conducted with price date of shipment terms. All other non-toll unit sales volumes were conducted with firm price replacement purchases or price date of shipment replacement purchases plus a derivative contract.

#### *Metal Derivatives*

As discussed above, we use derivative contracts in support of our balanced book approach. These derivative contracts are not designated as hedges for accounting purposes and are recorded at fair value in accordance with the Financial Accounting Standards Board (“FASB”) Accounting Standards Codification (“ASC”) 820, Fair Value Measurements and Disclosures (“ASC 820”). Thus, we include the unrealized and realized gains and losses on these derivatives within cost of sales in our consolidated statements of operations.

#### ***Industry Dynamics and Demand for Our Products***

Demand for our product is driven predominantly by six markets: 1) building and housing, 2) munitions, 3) automotive, 4) electronics / electrical components, 5) coinage and 6) industrial machinery and equipment.

#### *Building and Housing*

According to our estimates, we expect U.S. housing starts and U.S. existing home sales to increase 6.6% and 4.3% annually, respectively, from 2016 through 2019.

We also expect continued growth for lead-free plumbing products in our green portfolio products, including Eco Brass<sup>®</sup>. We intend to continue our efforts to build key, strategic partnerships with our customers in the building and housing market to help drive growth.

Demand within this market is affected by new residential housing, existing home sales and commercial construction, all of which are significantly dependent on overall economic conditions. In addition, the correlation between housing statistics and our sales is not entirely direct as products containing our metal are typically installed near the completion of construction. Thus, there is an inherent lag time compared to housing starts. Sales of our products to customers in the building and housing market can be also affected by factors such as housing mix (single family versus multi-family

homes), unit size and unit price point. Sales of our products can also be impacted by changes and trends in the composition of materials and fixtures used in construction.

### *Munitions*

In 2014, our customers began destocking their munitions inventories and thus, Olin Brass's munitions volumes decreased in 2015 as these efforts continued. In 2016, we saw improved volumes in this market, but were still approximately 5% below the average annual munitions volumes in the 2012-2014 period. We expect a longer-term normalized run rate that is at or slightly above these historical 2012-2014 average annual volumes.

We remain focused on managing the factors within our control from a volume standpoint and we are encouraged by the continued improvements in quality and on-time performance at Olin Brass.

### *Automotive*

The automotive market is dependent on the level of consumer spending on automobiles, which is significantly dependent on overall economic conditions, replacement needs, and the amount of electrical components contained within automobiles. According to our estimates, North American light vehicle production is expected to grow by 1.5% annually from 2016 through 2019.

Particularly within Olin Brass and A.J. Oster, we are implementing pricing strategies that focus on pricing our products: to earn a return commensurate with cost complexity required to produce them, to earn an appropriate return on the assets used to produce them, and to earn an appropriate return in relation to other competitive offerings. We believe these pricing strategies will better position us in the long-term.

### *Electronics / Electrical Components*

Customers use our products to manufacture electronics / electrical components in a wide range of applications, from medical devices to computers to aviation components, and demand is largely correlated to general economic activity and technological developments.

### *Coinage*

As has been the case from time to time for over 40 years, Olin Brass renewed its long-term contract with the U.S. Mint in 2012 to extend the supply agreement into 2017. We would expect to earn a similar renewal in 2017. Demand for coinage is directly tied to consumer transactions and coinage demand has improved in the last three years as a result of an overall increase in demand, as well as due to the U.S. Mint replenishing coin inventories which had become too low.

### *Industrial Machinery and Equipment ("IM&E")*

Sales in this market primarily lie within Chase Brass. IM&E volumes decreased in both 2015 and 2016 as compared to each previous year due to softness in the oil and gas, metals and mining, and agricultural industries, as well as competition from imported parts.

### ***Industry Dynamics Affecting Growth Opportunities***

Regarding demand for copper and copper-alloy sheet, strip and plate ("SSP"), there are a number of growth opportunities that could increase the demand for SSP products, including our CuVerro<sup>®</sup> bactericidal products. Olin Brass completed the federal and state registration processes necessary to market its CuVerro<sup>®</sup> materials as having bactericidal properties. It has also registered more than 30 component manufacturers to market products made with CuVerro<sup>®</sup>.

Legislation to replace the one-dollar paper notes with dollar coins keeps receiving attention in Congress, most recently by the reintroduction of the Unified Savings and Accountability Act ("USA Act") in July 2015. Among other matters, the USA Act brings added focus and support to replace the one dollar note with the dollar coin. We anticipate a significant increase in the size of the coinage market if the U.S. transitions to the dollar coin and eliminates the one-dollar paper note.

Regarding demand for brass rod, we anticipate volume growth in our green products portfolio from the building and construction market resulting from the need for plumbing devices to be compliant with national potable water regulations.

Finally, the North American market may be affected by certain factors related to the supply of brass and copper, including imported rod and finished parts. Therefore, competition from offshore suppliers could become more significant in the future if certain factors change. Historically these factors have included foreign trade agreements, competition,

antidumping orders, foreign exchange rate fluctuations, domestic capacity and pricing levels, as well as costs in the import supply chain.

### ***Management's View of Performance***

In addition to the results reported in accordance with accounting principles generally accepted in the United States of America, ("US GAAP"), we also report "adjusted sales," "adjusted gross profit," "adjusted selling, general and administrative expenses," "adjusted EBITDA" and "adjusted diluted earnings per common share," all of which are non-GAAP financial measures as defined below.

Adjusted sales, adjusted gross profit, adjusted selling, general and administrative expenses, adjusted EBITDA and adjusted diluted earnings per common share may not be comparable to similarly titled measures presented by other companies and are not intended as alternatives to any other measure of performance in conformity with US GAAP.

You should therefore not place undue reliance on adjusted sales, adjusted gross profit, adjusted selling, general and administrative expenses, adjusted EBITDA, adjusted diluted earnings per common share, or any ratios calculated using them. The most comparable US GAAP-based measure for each respective non-GAAP financial measure can be found in our consolidated financial statements and the related notes thereto included elsewhere in this report.

### ***Net sales and adjusted sales***

Net sales is the most directly comparable US GAAP measure to adjusted sales, which represents the value-added premium we earn over our conversion and fabrication costs. Adjusted sales is defined as net sales less the metal cost of products sold. We use adjusted sales on a consolidated basis to monitor the revenues that are generated from our value-added conversion and fabrication processes excluding the effects of fluctuations in metal costs. We believe that adjusted sales supplements our US GAAP results because it provides a more complete understanding of the results of our business, and we believe it is useful to our investors and other parties for these same reasons.

Net sales is reconciled to adjusted sales as follows:

<i>(in millions, except per pound values)</i>	Year Ended December 31,			Change: 2016 vs. 2015		Change: 2015 vs. 2014	
	2016	2015	2014	Amount	Percent	Amount	Percent
Pounds shipped (a)	520.8	511.9	520.4	8.9	1.7 %	(8.5)	(1.6)%
Net sales	\$ 1,338.5	\$ 1,506.2	\$ 1,711.4	\$ (167.7)	(11.1)%	\$ (205.2)	(12.0)%
Metal component of net sales	(796.3)	(971.9)	(1,168.8)	175.6	(18.1)%	196.9	(16.8)%
Adjusted sales	<u>\$ 542.2</u>	<u>\$ 534.3</u>	<u>\$ 542.6</u>	<u>\$ 7.9</u>	1.5 %	<u>\$ (8.3)</u>	(1.5)%
Net sales per pound	\$ 2.57	\$ 2.94	\$ 3.29	\$ (0.37)	(12.6)%	\$ (0.35)	(10.6)%
less: Metal component of net sales per pound	1.53	1.90	2.25	(0.37)	(19.5)%	(0.35)	(15.6)%
Adjusted sales per pound	<u>\$ 1.04</u>	<u>\$ 1.04</u>	<u>\$ 1.04</u>	<u>\$ —</u>	— %	<u>\$ —</u>	— %
Average copper price per pound (b)	\$ 2.20	\$ 2.51	\$ 3.12	\$ (0.31)	(12.4)%	\$ (0.61)	(19.6)%

(a) Amounts exclude quantity of unprocessed metal sold.

(b) Copper prices reported by the Commodity Exchange ("COMEX").

### **2016 compared to 2015**

Net sales decreased by \$167.7 million, or 11.1%, primarily the result of a \$175.6 million decline in the metal cost recovery component due to decreased metal prices and less sales of unprocessed metals (combined \$189.7 million), partially ameliorated by increased volumes (\$24.0 million). Adjusted sales increased by \$7.9 million due to increased volumes as the result of increased demand in the munitions and building and housing markets, partially offset by lower demand in the coinage, industrial machinery and equipment and transportation markets. Average selling prices also decreased slightly due to increased concentration of sales to lower margin customers and increased mix of sales in generally lower priced markets.

## 2015 compared to 2014

Net sales decreased by \$205.2 million, or 12.0%, primarily due to decreased metal prices (\$133.0 million) and a decline in sales of unprocessed metal (\$56.9 million). Adjusted sales decreased by \$8.3 million, primarily due to decreased volume as a result of lower demand in the munitions market partially offset by increased demand in the coinage market.

### *Gross profit and adjusted gross profit*

Gross profit is the most directly comparable US GAAP measure to adjusted gross profit. Adjusted gross profit is defined as gross profit less items excluded from the calculation of adjusted EBITDA. We believe that adjusted gross profit supplements our US GAAP results because it provides a more complete understanding of the results of our business, and we believe it is useful to our investors and other parties for these same reasons. We believe adjusted gross profit represents a meaningful presentation of the financial performance of our core operations, in order to provide period-to-period comparisons that are more consistent and more easily understood.

Gross profit is reconciled to adjusted gross profit as follows:

<i>(in millions)</i>	Year Ended December 31,			Amount change:	
	2016	2015	2014	2016 vs. 2015	2015 vs. 2014
Total gross profit	\$ 181.6	\$ 170.3	\$ 164.6	\$ 11.3	\$ 5.7
Unrealized (gain) loss on derivative contracts (a)	(3.1)	(0.6)	3.0	(2.5)	(3.6)
LIFO liquidation loss (gain)	1.9	0.1	0.6	1.8	(0.5)
Lower of cost or market adjustment to inventory (b)	(1.7)	6.6	0.2	(8.3)	6.4
Restructuring and other business transformation charges	—	0.4	0.1	(0.4)	0.3
Depreciation expense	12.9	12.0	10.2	0.9	1.8
Adjusted gross profit	<u>\$ 191.6</u>	<u>\$ 188.8</u>	<u>\$ 178.7</u>	<u>\$ 2.8</u>	<u>\$ 10.1</u>

- (a) We use our balanced book approach, which includes derivative contracts, to substantially reduce the impact of metal price fluctuations on operating margins. We also use derivative contracts to reduce uncertainty and volatility related to energy and utility costs.
- (b) 2016 amounts represent net recoveries of previous charges as market prices for certain non-copper metals increased. For 2015 and 2014, the amounts represent lower of cost or market charges for the write down of domestic, non-copper metal inventory.

## 2016 compared to 2015

Gross profit increased by \$11.3 million, or 6.6%, and benefited \$8.3 million from a reduction in lower of cost or market charges and favorable fluctuations (\$2.5 million) in unrealized gains / losses on derivative contracts. Adjusted gross profit increased by \$2.8 million (1.5%) due to increased volumes, partially offset by a negative impact from the aforementioned shift in sales towards less profitable customers and markets. Additionally, while gross profit was unfavorably impacted by the one-time production costs incurred as a result of the production outage, these were more than offset by productivity improvements leading to an overall decrease in production costs.

## 2015 compared to 2014

Gross profit increased by \$5.7 million, or 3.5%, primarily due to increased production yields and productivity improvements. Adjusted gross profit increased by \$10.1 million, predominantly due to the aforementioned yield and productivity improvements.

### *Selling, general and administrative expenses and adjusted selling, general and administrative expenses*

Selling, general and administrative expenses are the most directly comparable US GAAP measure to adjusted selling, general and administrative expenses. Adjusted selling, general and administrative expenses is defined as selling, general and administrative expenses less items excluded from the calculation of adjusted EBITDA. We believe that adjusted selling, general and administrative expenses supplement our US GAAP results because it provides a more complete understanding of the results of our business, and we believe it is useful to our investors and other parties for these same reasons. We believe adjusted selling, general and administrative expenses represent a meaningful presentation of the

financial performance of our core operations, in order to provide period-to-period comparisons that are more consistent and more easily understood.

Selling, general and administrative expenses is reconciled to adjusted selling, general and administrative expenses as follows:

<i>(in millions)</i>	Year Ended December 31,			Amount change:	
	2016	2015	2014	2016 vs. 2015	2015 vs. 2014
Total selling, general and administrative expenses	\$ 82.8	\$ 83.2	\$ 76.9	\$ (0.4)	\$ 6.3
Specified legal / professional expenses	(1.2)	(2.8)	(4.3)	1.6	1.5
Share-based compensation expense	(6.9)	(4.2)	(1.7)	(2.7)	(2.5)
Restructuring and other business transformation charges	—	(0.5)	(0.3)	0.5	(0.2)
Depreciation and amortization expense	(2.0)	(1.6)	(2.1)	(0.4)	0.5
Adjusted selling, general and administrative expenses	<u>\$ 72.7</u>	<u>\$ 74.1</u>	<u>\$ 68.5</u>	<u>\$ (1.4)</u>	<u>\$ 5.6</u>

#### 2016 compared to 2015

Selling, general and administrative expenses decreased by \$0.4 million (0.5%) and adjusted selling, general and administrative expenses decreased by \$1.4 million (1.9%), primarily due to lower employee and employee related costs (\$3.1 million), partially offset by an increase in outside services. Additionally, selling, general and administrative expenses were unfavorably impacted by an increase in share-based compensation expense and favorably impacted by decreased professional fees. We have made significant progress in reducing professional fees for accounting, tax, legal and consulting services incurred in our early years as a public company and thus, in 2017, these costs will no longer be an adjustment for purposes of calculating adjusted selling, general and administrative expenses. In 2016, adjusted selling, general and administrative expenses would have been \$1.2 million greater and adjusted EBITDA (defined hereafter) would have decreased by this same amount had we not adjusted for these expenses.

#### 2015 compared to 2014

Selling, general and administrative expenses increased by \$6.3 million, or 8.2%, primarily due to higher incentive compensation expenses related to improved performance. Adjusted selling, general and administrative expenses increased by \$5.6 million, again due to the aforementioned incentive compensation fluctuations.

#### *Net income and adjusted EBITDA*

Net income attributable to Global Brass and Copper Holdings, Inc. is the most directly comparable US GAAP measure to adjusted EBITDA.

Adjusted EBITDA is defined as net income attributable to Global Brass and Copper Holdings, Inc., plus interest, taxes, depreciation and amortization (“EBITDA”) adjusted to exclude the following:

- unrealized gains and losses on derivative contracts in support of our balanced book approach;
- unrealized gains and losses associated with derivative contracts related to energy and utility costs;
- the impact associated with lower of cost or market adjustments to inventory;
- gains and losses due to the depletion of a LIFO layer of inventory;
- share-based compensation expense;
- loss on extinguishment of debt;
- income accretion related to Dowa Olin Metal Corporation (the “Dowa Joint Venture”);
- restructuring and other business transformation charges;
- specified legal and professional expenses; and
- certain other items.

We believe adjusted EBITDA represents a meaningful presentation of the financial performance of our core operations, because it provides period-to-period comparisons that are more consistent and more easily understood. We also believe it is an important supplemental measure that is frequently used by securities analysts, investors and other interested parties in the evaluation of companies in our industry.

Adjusted EBITDA is the key metric used by our Chief Operating Decision Maker to evaluate the segment performance in a way that we believe reflects our core operating performance, and in turn, incentivize members of management and certain employees. For example, we use adjusted EBITDA per pound in order to measure the effectiveness of the balanced book

approach in reducing the financial impact of metal price volatility on earnings and operating margins, and to measure the effectiveness of our business transformation initiatives in improving earnings and operating margins.

Adjusted EBITDA has limitations as an analytical tool, and you should not consider it in isolation or as a substitute for analysis of our results as reported under US GAAP.

We compensate for these limitations by using adjusted EBITDA along with other comparative tools, together with US GAAP measurements, to assist in the evaluation of operating performance. Such US GAAP measurements include operating income and net income.

Net income attributable to Global Brass and Copper Holdings, Inc. is reconciled to adjusted EBITDA as follows:

<i>(in millions)</i>	Year Ended December 31,			Amount change:	
	2016	2015	2014	2016 vs. 2015	2015 vs. 2014
Net income attributable to Global Brass and Copper Holdings, Inc.	\$ 32.2	\$ 35.6	\$ 31.7	\$ (3.4)	\$ 3.9
Interest expense	26.2	39.1	39.6	(12.9)	(0.5)
Provision for income taxes	16.6	15.9	16.6	0.7	(0.7)
Depreciation expense	14.8	13.5	12.2	1.3	1.3
Amortization expense	0.1	0.1	0.1	—	—
Unrealized (gain) loss on derivative contracts (a)	(3.1)	(0.6)	3.0	(2.5)	(3.6)
LIFO liquidation loss (gain) (b)	1.9	0.1	0.6	1.8	(0.5)
Loss on extinguishment of debt (c)	23.4	3.1	—	20.3	3.1
Non-cash accretion of income of Dowa Joint Venture (d)	—	(0.2)	(0.7)	0.2	0.5
Specified legal / professional expenses (e)	1.2	2.8	4.3	(1.6)	(1.5)
Lower of cost or market adjustment to inventory (f)	(1.7)	6.6	0.2	(8.3)	6.4
Share-based compensation expense (g)	6.9	4.2	1.7	2.7	2.5
Restructuring and other business transformation charges (h)	—	0.9	0.4	(0.9)	0.5
Adjusted EBITDA	<u>\$ 118.5</u>	<u>\$ 121.1</u>	<u>\$ 109.7</u>	<u>\$ (2.6)</u>	<u>\$ 11.4</u>

- (a) Represents unrealized gains and losses on derivative contracts.
- (b) Calculated based on the difference between the base year LIFO carrying value and the metal prices prevailing in the market at the time of inventory depletion.
- (c) Represents the loss on extinguishment of debt recognized in connection with the open market purchases and refinancing of our former senior secured notes (“Senior Secured Notes”) and asset-based revolving loan facility (“ABL Facility”).
- (d) As a result of the application of purchase accounting in connection with the November 2007 acquisition, no carrying value was initially assigned to our equity investment in our Dowa Joint Venture. This adjustment represents the accretion of equity in our Dowa Joint Venture at the date of the acquisition over a 13-year period (i.e., the estimated useful life of the technology and patents of the joint venture). In 2015, we sold our investment in the Dowa Joint Venture.
- (e) Represents selected professional fees for accounting, tax, legal and consulting services incurred as a public company that exceed our expected long-term requirements.
- (f) Represents the impact of lower of cost or market adjustments to domestic, non-copper metal inventory.
- (g) Represents compensation expense resulting from stock compensation awards to certain employees and our Board of Directors.
- (h) Restructuring and other business transformation charges in 2015 and 2014 represent severance charges at Olin Brass.

#### 2016 compared to 2015

Net income attributable to Global Brass and Copper Holdings, Inc. decreased by \$3.4 million, or 9.6% mainly due to the increase in the loss on extinguishment of debt and the fact that the prior year included a gain on the sale of our joint venture, partially offset by the aforementioned increase in gross profit and decreased interest expense, as described later herein.

Excluding the \$6.3 million gain on the sale of our joint venture in 2015, adjusted EBITDA increased \$3.7 million in 2016. Despite the 2016 production outage at Olin Brass, which required us to outsource some production activities at increased costs, productivity and yield improvements resulted in a decrease in overall manufacturing costs even as volumes increased almost two percent. Adjusted EBITDA also benefited from an overall increase in volumes despite volumes being more concentrated in lower priced markets and customers. Last, adjusted EBITDA benefited from the aforementioned decrease in adjusted selling, general and administrative expenses.

#### 2015 compared to 2014

Net income attributable to Global Brass and Copper Holdings, Inc. increased by \$3.9 million, or 12.3%, primarily due to an increase in gross profit and the gain on the sale of our joint venture, partially offset by an increase in selling, general and administrative expenses and the loss on extinguishment of debt, as described elsewhere in this report.

Adjusted EBITDA increased by \$11.4 million, or 10.4%, due to decreased manufacturing conversion costs of \$11.2 million and the gain on the sale of our joint venture of \$6.3 million, partially offset by an increase of \$5.3 million in employee compensation and related costs.

#### *Diluted earnings per common share and adjusted diluted earnings per common share*

Diluted income per common share decreased by \$0.17 in 2016 and increased by \$0.17 in 2015 as compared to the previous year for each, largely due to the fluctuations in net income. Diluted net income attributable to Global Brass and Copper Holdings, Inc. per common share is the most directly comparable US GAAP measure to adjusted diluted earnings per common share.

Adjusted diluted earnings per common share is defined as diluted net income attributable to Global Brass and Copper Holdings, Inc. per common share adjusted to remove the per share impact of the add backs to EBITDA in calculating adjusted EBITDA.

We believe adjusted diluted earnings per common share represents a meaningful presentation of the financial performance of our consolidated results because it provides period-to-period comparisons that are more consistent and more easily understood. We also believe it is an important supplemental measure that is frequently used by securities analysts, investors and other interested parties in the evaluation of companies in our industry.

Adjusted diluted earnings per share is a key metric used to evaluate the Company's performance, and in turn, incentivize members of management and certain employees.

We believe that adjusted diluted earnings per common share supplements our US GAAP results to provide a more complete understanding of the results of our business, and we believe it is useful to our investors and other parties for these same reasons.

Diluted net income attributable to Global Brass and Copper Holdings, Inc. per common share is reconciled to adjusted diluted earnings per common share as follows:

	<b>Year Ended December 31,</b>			<b>Amount change:</b>	
	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2016 vs. 2015</b>	<b>2015 vs. 2014</b>
Diluted net income attributable to Global Brass and Copper Holdings, Inc. per common share	\$ 1.49	\$ 1.66	\$ 1.49	\$ (0.17)	\$ 0.17
Unrealized (gain) loss on derivative contracts	(0.15)	(0.03)	0.14	(0.12)	(0.17)
Loss on extinguishment of debt	1.08	0.14	—	0.94	0.14
Non-cash accretion of income of Dowa Joint Venture	—	(0.01)	(0.03)	0.01	0.02
Specified legal / professional expenses	0.06	0.13	0.20	(0.07)	(0.07)
Lower of cost or market adjustment to inventory	(0.08)	0.31	0.01	(0.39)	0.30
LIFO liquidation loss (gain)	0.09	0.01	0.03	0.08	(0.02)
Share-based compensation expense	0.32	0.19	0.08	0.13	0.11
Restructuring and other business transformation charges	—	0.05	0.01	(0.05)	0.04
Tax impact on above adjustments (a)	(0.45)	(0.25)	(0.16)	(0.20)	(0.09)
Adjusted diluted earnings per common share	<u>\$ 2.36</u>	<u>\$ 2.20</u>	<u>\$ 1.77</u>	<u>\$ 0.16</u>	<u>\$ 0.43</u>

(a) Calculated based on our estimated tax rate.

## Results of Operations

### *Consolidated Results of Operations for the Year Ended December 31, 2016, Compared to the Year Ended December 31, 2015.*

<i>(in millions)</i>	Year ended December 31,				Change: 2016 vs. 2015	
	2016	% of Net Sales	2015	% of Net Sales	Amount	Percent
Net sales	\$ 1,338.5	100.0 %	\$ 1,506.2	100.0 %	\$ (167.7)	(11.1)%
Cost of sales	(1,156.9)	86.4 %	(1,335.9)	88.7 %	179.0	(13.4)%
Gross profit	181.6	13.6 %	170.3	11.3 %	11.3	6.6 %
Selling, general and administrative expenses	(82.8)	6.2 %	(83.2)	5.5 %	0.4	(0.5)%
Operating income	98.8	7.4 %	87.1	5.8 %	11.7	13.4 %
Interest expense	(26.2)	2.0 %	(39.1)	2.6 %	12.9	(33.0)%
Loss on extinguishment of debt	(23.4)	1.7 %	(3.1)	0.2 %	(20.3)	N/M
Gain on sale of investment in joint venture	—	— %	6.3	0.4 %	(6.3)	(100.0)%
Other income (expense), net	0.2	— %	0.2	— %	—	— %
Income before provision for income taxes and equity income	49.4	3.7 %	51.4	3.4 %	(2.0)	(3.9)%
Provision for income taxes	(16.6)	1.2 %	(15.9)	1.1 %	(0.7)	4.4 %
Income before equity income	32.8	2.5 %	35.5	2.4 %	(2.7)	(7.6)%
Equity income, net of tax	—	— %	0.3	— %	(0.3)	(100.0)%
Net income	32.8	2.5 %	35.8	2.4 %	(3.0)	(8.4)%
Net income attributable to noncontrolling interest	(0.6)	— %	(0.2)	— %	(0.4)	N/M
Net income attributable to Global Brass and Copper Holdings, Inc.	\$ 32.2	2.4 %	\$ 35.6	2.4 %	\$ (3.4)	(9.6)%
Adjusted EBITDA (a)	\$ 118.5	8.9 %	\$ 121.1	8.0 %	\$ (2.6)	(2.1)%

(a) See “Management’s View of Performance—Net income and adjusted EBITDA.”

N/M - not meaningful

The following discussions present an analysis of our results of operations for 2016 as compared to 2015. See “Management’s View of Performance” for discussions of net sales, adjusted sales, gross profit, adjusted gross profit, selling, general and administrative expenses, adjusted selling, general and administrative expenses, net income attributable to Global Brass and Copper Holdings, Inc., adjusted EBITDA, diluted net income attributable to Global Brass and Copper Holdings, Inc. per common share and adjusted diluted earnings per common share. These discussions should be read in conjunction with the accompanying consolidated financial statements and the notes thereto.

### *Interest expense*

The following table summarizes the components of interest expense:

<i>(in millions)</i>	Year Ended December 31,		Amount change:
	2016	2015	2016 vs. 2015
Interest on principal	\$ 24.4	\$ 35.5	\$ (11.1)
Amortization of debt discount and issuance costs	2.0	2.8	(0.8)
Capitalized interest	(1.1)	(0.2)	(0.9)
Other borrowing costs (a)	0.9	1.0	(0.1)
Total interest expense	<u>\$ 26.2</u>	<u>\$ 39.1</u>	<u>\$ (12.9)</u>

(a) Includes fees related to letters of credit and unused line of credit fees.

Interest expense decreased by \$12.9 million primarily due to lower average interest rates and lower borrowings under our debt facilities as we bought back an aggregate of \$69.7 million of Senior Secured Notes in the open market during the latter half of 2015 and the first half of 2016. Additionally, in July of 2016, we refinanced the remaining \$305.3 million of 9.5% Senior Secured Notes with a new \$320.0 million Term Loan B Facility, which accrued interest at a rate of 5.25% during the second half of 2016. Lastly, we capitalized interest relating to the construction of long-term assets in the amount of \$1.1 million, \$0.2 million and \$0.2 million in 2016, 2015 and 2014, respectively.

### *Loss on extinguishment of debt*

We bought back an aggregate of \$69.7 million of Senior Secured Notes in the open market during the latter half of 2015 and the first half of 2016. Additionally, in July of 2016, we refinanced the remaining \$305.3 million of 9.5% Senior Secured Notes. As a result of the activity in 2016, we recognized a loss on the extinguishment of debt of \$23.4 million, which includes a premium of \$17.0 million and the write-off of \$6.4 million of unamortized debt issuance costs related to both the Senior Secured Notes and the former asset-based loan facility.

### *Provision for income taxes*

The provision for income taxes increased by \$0.7 million, or 4.4%, and the effective income tax rate increased from 30.9% to 33.6%. The prior year effective tax rate benefited from the utilization of foreign tax credits in 2015 due to the sale of our joint venture. Due to the expected decrease in interest expense in future years resulting from our refinancing, we released the valuation allowance recorded against our foreign tax credits, resulting in a one-time reduction in income tax expense of approximately \$1.0 million, which benefited our effective tax rate in 2016. Additionally, the effective tax rate increased from 2015 to 2016 due to less Section 199 manufacturing credit benefit.

## Segment Results of Operations

### *Segment Results of Operations for the Year Ended December 31, 2016, Compared to the Year Ended December 31, 2015.*

<i>(in millions)</i>	Year Ended December 31,		Change: 2016 vs. 2015	
	2016	2015	Amount	Percent
Pounds shipped (a)				
Olin Brass	260.5	260.0	0.5	0.2 %
Chase Brass	222.7	218.9	3.8	1.7 %
A.J. Oster	75.6	73.1	2.5	3.4 %
Corporate (b)	(38.0)	(40.1)	2.1	5.2 %
Total	520.8	511.9	8.9	1.7 %
Net sales				
Olin Brass	\$ 629.6	\$ 721.9	\$ (92.3)	(12.8)%
Chase Brass	502.7	544.1	(41.4)	(7.6)%
A.J. Oster	282.7	293.3	(10.6)	(3.6)%
Corporate (b)	(76.5)	(53.1)	(23.4)	(44.1)%
Total	\$ 1,338.5	\$ 1,506.2	\$ (167.7)	(11.1)%
Adjusted EBITDA				
Olin Brass	\$ 49.8	\$ 48.3	\$ 1.5	3.1 %
Chase Brass	68.0	68.9	(0.9)	(1.3)%
A.J. Oster	18.4	15.8	2.6	16.5 %
Total adjusted EBITDA of operating segments	136.2	133.0	3.2	2.4 %
Corporate and other (c)	(17.7)	(11.9)	(5.8)	48.7 %
Total consolidated adjusted EBITDA	\$ 118.5	\$ 121.1	\$ (2.6)	(2.1)%

- (a) Amounts exclude quantity of unprocessed metal sold.  
(b) Amounts represent intercompany eliminations.  
(c) 2015 includes a \$6.3 million gain on the sale of investment in joint venture

See Note 4, "Segment Information," of our consolidated financial statements, which are included elsewhere in this report, for a reconciliation of adjusted EBITDA of segments to income before provision for income taxes and equity income.

The following discussions present an analysis of our results by segment for 2016 as compared to 2015. This discussion should be read in conjunction with the accompanying consolidated financial statements and the notes thereto.

#### ***Olin Brass***

Net sales decreased by \$92.3 million as the metal cost recovery component decreased by \$89.9 million due mostly to decreased metal prices (\$84.2 million). Adjusted sales decreased by \$2.4 million due to unfavorable product mix changes (\$3.2 million) as volumes were more concentrated in munitions and less in coinage. This decrease was partially ameliorated by increased volumes (\$0.8 million). Volumes increased in the munitions market and decreased in the coinage market, all due to underlying demand.

Adjusted EBITDA increased by \$1.5 million, primarily due to improvements in productivity and decreased selling, general and administrative expenses, especially those related to employee and employee related expenses. These results included one-time costs incurred as a result of the production outage and the impact of unfavorable changes in product mix noted above.

#### ***Chase Brass***

Net sales decreased by \$41.4 million as the metal cost recovery component declined by \$38.7 million due to lower metal prices (\$46.1 million), partially offset by increased volumes (\$7.4 million). Adjusted sales decreased by \$2.7 million, which was the result of decreased pricing (\$5.1 million), partially ameliorated by improved volumes (\$2.4 million). Pricing

decreased both as a result of increased competition and increased volumes with customers secured under longer term contracts.

Volumes increased in the building and housing market and decreased in the transportation and industrial machinery and equipment markets, all due to underlying demand.

Adjusted EBITDA decreased by \$0.9 million predominantly due to the decreased pricing, which was nearly offset by increased volumes, decreased manufacturing conversion costs, and decreased employee and employee related costs.

#### ***A.J. Oster***

Net sales decreased by \$10.6 million, as the metal cost recovery component declined by \$23.8 million due to lower metal prices (\$29.4 million), partially offset by increased volumes (\$5.6 million). Adjusted sales increased by \$13.2 million due to the impact of increased selling prices (\$8.8 million) and increased volume (\$4.4 million). A.J. Oster continues to pass on certain price increases from its sister company Olin Brass. Both entities are focusing on pricing their products in order to earn a return that better reflects the complexity of the products being produced and the assets used to produce them.

Volumes increased primarily due to increased demand in the electronics / electrical components markets due to underlying demand.

Adjusted EBITDA increased by \$2.6 million, due to the impact of increased selling prices and increased volumes, which were partially offset by increased pricing from Olin Brass and increased selling, general and administrative expenses, particularly those related to employee and employee related costs.

### **Results of Operations**

#### ***Consolidated Results of Operations for the Year Ended December 31, 2015, Compared to the Year Ended December 31, 2014.***

<i>(in millions)</i>	Year ended December 31,				Change: 2015 vs. 2014	
	2015	% of Net Sales	2014	% of Net Sales	Amount	Percent
Net sales	\$ 1,506.2	100.0 %	\$ 1,711.4	100.0 %	\$ (205.2)	(12.0)%
Cost of sales	(1,335.9)	88.7 %	(1,546.8)	90.4 %	210.9	(13.6)%
Gross profit	170.3	11.3 %	164.6	9.6 %	5.7	3.5 %
Selling, general and administrative expenses	(83.2)	5.5 %	(76.9)	4.5 %	(6.3)	8.2 %
Operating income	87.1	5.8 %	87.7	5.1 %	(0.6)	(0.7)%
Interest expense	(39.1)	2.6 %	(39.6)	2.3 %	0.5	(1.3)%
Loss on extinguishment of debt	(3.1)	0.2 %	—	— %	(3.1)	N/A
Gain on sale of investment in joint venture	6.3	0.4 %	—	— %	6.3	N/A
Other income (expense), net	0.2	— %	(0.5)	— %	0.7	(140.0)%
Income before provision for income taxes and equity income	51.4	3.4 %	47.6	2.8 %	3.8	8.0 %
Provision for income taxes	(15.9)	1.1 %	(16.6)	1.0 %	0.7	(4.2)%
Income before equity income	35.5	2.4 %	31.0	1.8 %	4.5	14.5 %
Equity income, net of tax	0.3	— %	1.1	0.1 %	(0.8)	(72.7)%
Net income	35.8	2.4 %	32.1	1.9 %	3.7	11.5 %
Net income attributable to noncontrolling interest	(0.2)	— %	(0.4)	— %	0.2	(50.0)%
Net income attributable to Global Brass and Copper Holdings, Inc.	\$ 35.6	2.4 %	\$ 31.7	1.9 %	\$ 3.9	12.3 %
Adjusted EBITDA (a)	\$ 121.1	8.0 %	\$ 109.7	6.4 %	\$ 11.4	10.4 %

(a) See “Management’s View of Performance—Net income and adjusted EBITDA.”

N/A - not applicable

The following discussions present an analysis of our results of operations for 2015 as compared to 2014. See “Management’s View of Performance” for discussions of net sales, adjusted sales, gross profit, adjusted gross profit, selling, general and administrative expenses, adjusted selling, general and administrative expenses, net income attributable to Global Brass and Copper Holdings, Inc., adjusted EBITDA, diluted net income attributable to Global Brass and Copper Holdings, Inc. per common share and adjusted diluted earnings per common share. These discussions should be read in conjunction with the accompanying consolidated financial statements and the notes thereto.

*Interest expense*

The following table summarizes the components of interest expense:

<i>(in millions)</i>	<b>Year Ended December 31,</b>		<b>Amount change:</b>
	<b>2015</b>	<b>2014</b>	<b>2015 vs. 2014</b>
Interest on principal	\$ 35.5	\$ 36.1	\$ (0.6)
Amortization of debt issuance costs	2.8	2.7	0.1
Capitalized interest	(0.2)	(0.2)	—
Other borrowing costs (a)	1.0	1.0	—
Total interest expense	<u>\$ 39.1</u>	<u>\$ 39.6</u>	<u>\$ (0.5)</u>

(a) Includes fees related to letters of credit and unused line of credit fees.

*Loss on extinguishment of debt*

In 2015, we bought back \$29.7 million principal amount of Senior Secured Notes in the open market for an aggregate price of \$32.2 million, plus accrued interest. As a result of these purchases, we recognized a loss on the extinguishment of debt of \$3.1 million, which includes a premium of \$2.5 million and the write-off of \$0.6 million of unamortized debt issuance costs.

*Gain on sale of investment in joint venture*

In April 2015, we sold our 50% share of the Dowa Joint Venture to Dowa Co. for \$8.0 million. During 2015, we recognized a gain of \$6.3 million and related tax expense of \$1.5 million on the sale.

*Provision for income taxes*

Our provision for income taxes decreased by \$0.7 million, or 4.2%, and the effective income tax rate decreased from 34.9% to 30.9%. The effective tax rate declined predominantly due to a reduction in the valuation allowance based on our increase in foreign source income, which was attributable to the gain on the sale of our joint venture investment in 2015, as well as the expected reduction in interest expense in 2016 and beyond.

## Segment Results of Operations

### *Segment Results of Operations for the Year Ended December 31, 2015, Compared to the Year Ended December 31, 2014*

<i>(in millions)</i>	Year Ended December 31,		Change: 2015 vs. 2014	
	2015	2014	Amount	Percent
Pounds shipped (a)				
Olin Brass	260.0	269.1	(9.1)	(3.4)%
Chase Brass	218.9	221.3	(2.4)	(1.1)%
A.J. Oster	73.1	68.7	4.4	6.4 %
Corporate (b)	(40.1)	(38.7)	(1.4)	(3.6)%
Total	511.9	520.4	(8.5)	(1.6)%
Net Sales				
Olin Brass	\$ 721.9	\$ 847.8	\$ (125.9)	(14.9)%
Chase Brass	544.1	603.7	(59.6)	(9.9)%
A.J. Oster	293.3	313.9	(20.6)	(6.6)%
Corporate (b)	(53.1)	(54.0)	0.9	1.7 %
Total	\$ 1,506.2	\$ 1,711.4	\$ (205.2)	(12.0)%
Adjusted EBITDA				
Olin Brass	\$ 48.3	\$ 36.9	\$ 11.4	30.9 %
Chase Brass	68.9	69.2	(0.3)	(0.4)%
A.J. Oster	15.8	16.2	(0.4)	(2.5)%
Total adjusted EBITDA of operating segments	133.0	122.3	10.7	8.7 %
Corporate and other (c)	(11.9)	(12.6)	0.7	(5.6)%
Total consolidated adjusted EBITDA	\$ 121.1	\$ 109.7	\$ 11.4	10.4 %

- (a) Amounts exclude quantity of unprocessed metal sold.  
(b) Amounts represent intercompany eliminations.  
(c) 2015 includes a \$6.3 million gain on the sale of investment in joint venture

See Note 4, "Segment Information," of our consolidated financial statements, which are included elsewhere in this report, for a reconciliation of adjusted EBITDA of segments to income before provision for income taxes and equity income.

The following discussions present an analysis of our results by segment for 2015 as compared to 2014. This discussion should be read in conjunction with the accompanying consolidated financial statements and the notes thereto.

#### ***Olin Brass***

Net sales decreased by \$125.9 million, predominately due to a \$113.7 million decline in the metal cost recovery component. The majority of that decline, approximately \$100.0 million, is due to less sales of unprocessed metals and decreased metal prices.

Adjusted sales decreased by \$12.2 million primarily due to lower volume, which accounted for \$11.1 million of the decline. Volume decreased due to lower munitions demand partially offset by increased coinage volume resulting from an overall increase in demand, as well as due to the U.S. Mint replenishing coin inventories which had become too low.

Adjusted EBITDA increased by \$11.4 million, the primary drivers of which were a decrease in manufacturing conversion costs resulting from improvements in productivity, yield, and cost controls and selling price increases due to complexity of product, partially offset by the negative effect of decreased volume and increased employee compensation and related costs.

#### ***Chase Brass***

Net sales decreased by \$59.6 million primarily due to a decline in the metal cost recovery component, which included a decrease of \$5.2 million due to lower volume and \$55.1 million due to decreased metal prices.

Adjusted sales increased by \$0.6 million, which was the result of favorable price and product mix fluctuations of \$2.0 million partially offset by decreased volume of \$1.4 million. Volume in the building and housing market increased, while volumes decreased in the transportation, electronics / electrical components and industrial machinery and equipment markets.

Adjusted EBITDA decreased by \$0.3 million as the \$0.6 million increase in adjusted sales was not large enough to offset the increase in manufacturing and increased selling, general and administrative expenses.

#### ***A.J. Oster***

Net sales decreased by \$20.6 million, due to a decrease in the metal cost recovery component, which included a decline of \$34.5 million as a result of decreased metal prices, partially offset by an increase in volume of \$12.1 million.

Adjusted sales increased by \$1.9 million due to higher volume, which had a favorable impact of \$7.8 million, partially offset by unfavorable product mix fluctuations of \$5.9 million due to less sales of high performance alloys. Volume increased by 4.4 million pounds, or 6.4%, due to A.J. Oster's success in achieving its commercial growth initiatives, especially in the electronics / electrical components market and in miscellaneous stamping.

Adjusted EBITDA decreased by \$0.4 million, which was primarily due to unfavorable product mix fluctuations and increased supply costs from Olin Brass. The decrease was partially offset by increased volume and decreased manufacturing conversion costs.

### **Changes in Financial Condition**

The following discussions present an analysis of fluctuations in certain accounts within our consolidated balance sheet as of December 31, 2016 as compared to the amounts as of December 31, 2015. These discussions should be read in conjunction with the accompanying consolidated financial statements and the notes thereto.

Accounts receivable increased by \$14.4 million due to increased volumes.

Inventory decreased by \$12.6 million primarily due to improved inventory management.

Accounts payable increased by \$17.9 million primarily due to an increase in days payable outstanding resulting from the timing and mix of vendor payments.

Other noncurrent liabilities increased by \$10.7 million as certain workers' compensation liabilities were reclassified to other noncurrent liabilities in 2016.

Our non-current portion of debt decreased by \$30.5 million, due to the activities and refinancing as discussed in Note 11, "Financing," to our consolidated financial statements, which are included elsewhere in this report.

### **Liquidity and Capital Resources**

#### ***Sources and Uses of Cash***

Our primary uses of cash are to fund working capital, operating expenses, service our debt and make capital expenditures. Historically, our primary sources of short-term liquidity and long-term liquidity have been cash flow from operations and borrowings under our ABL Facility. All of our operations are conducted at Holdings' subsidiary, GBC. GBC is the primary obligor on our indebtedness, and Holdings has no indebtedness other than its guarantee of GBC's indebtedness.

At December 31, 2016, cash and cash equivalents held by our foreign subsidiaries totaled \$7.5 million. We believe cash held by our foreign subsidiaries provides these operations with the necessary liquidity to meet future obligations and allows them to reinvest in their operations. We do not expect restrictions on repatriation of cash held outside of the United States for domestic purposes to have a material effect on our overall liquidity, financial condition, or the results of operations for the foreseeable future.

On July 18, 2016, we entered into an agreement governing our new asset-based revolving facility that matures on July 19, 2021 ("ABL Credit Agreement") and a new agreement governing our loans under the long-term credit agreement that matures on July 18, 2023 ("Term Loan B Credit Agreement," together, the "Credit Agreements"), both of which contain various customary covenants that limit or prohibit our ability, among other things, to (i) incur or guarantee additional indebtedness; (ii) pay certain dividends on our capital stock or redeem, repurchase, retire or make distributions in respect of our capital stock or subordinated indebtedness or make certain other restricted payments; (iii) make certain loans,

acquisitions, capital expenditures or investments; (iv) sell certain assets, including stock of our subsidiaries; (v) enter into certain sale and leaseback transactions; (vi) create or incur certain liens; (vii) consolidate, merge, sell, transfer or otherwise dispose of all or substantially all of our assets; (viii) enter into certain transactions with our affiliates; and (ix) engage in certain business activities.

We do not believe that the restrictions on dividends and distributions to Holdings and its equityholders imposed by the terms of our debt agreements have any significant impact on our liquidity, financial condition or results of operations. We believe that these resources will be sufficient to meet our working capital, debt service, dividend obligations and capital investment obligations for the foreseeable future, including costs that we may incur in connection with our growth strategy.

Capital improvements and replacement costs account for the majority of our capital expenditures, which we expect to relatively be in line with our historical spend over the foreseeable future.

### **Cash Flows**

The following table presents the summary components of net cash provided by (used in) operating, investing and financing activities for the periods indicated. The following discussion presents an analysis of cash flows for each of the years ended December 31, 2016, December 31, 2015 and December 31, 2014 and should be read in conjunction with our consolidated statements of cash flows in our consolidated financial statements included elsewhere in this report.

<b>Cash Flow Analysis</b> <i>(in millions)</i>	<b>Year Ended December 31,</b>			<b>Change</b>	
	<b>2016</b>	<b>2015</b>	<b>2014</b>	<b>2016 vs. 2015</b>	<b>2015 vs. 2014</b>
Net cash provided by operating activities	\$ 95.3	\$ 88.8	\$ 64.5	\$ 6.5	\$ 24.3
Net cash used in investing activities	\$ (34.3)	\$ (13.3)	\$ (22.3)	\$ (21.0)	\$ 9.0
Net cash used in financing activities	\$ (55.8)	\$ (36.7)	\$ (9.0)	\$ (19.1)	\$ (27.7)

#### *Cash flows from operating activities*

Net cash provided by operating activities increased by \$6.5 million in 2016 as compared to 2015 due to increased cash generated from earnings and less cash generated from working capital. Cash from earnings increased \$26.3 million, the largest fluctuations being in deferred income taxes (\$11.9 million due to favorable temporary items in 2016 as compared to 2015) and loss on extinguishment of debt (\$20.3 million due to our debt refinancing in July 2016). Cash from working capital changes decreased \$19.8 million as inflows from improved inventory management were more than offset by increased investments in net accounts receivable and accounts payable resulting from increased volumes and less of a benefit in 2016 from decreased metal prices.

Net cash provided by operating activities increased by \$24.3 million in 2015 as compared to 2014 due primarily to the impact of decreased metal prices on working capital, the utilization in 2015 of the overpayment of taxes that occurred in 2014 and a decrease in incentive compensation payments in 2015.

#### *Cash flows from investing activities*

Net cash used in investing activities in 2016 increased due to increased capital expenditures as compared to both 2015 and 2014 and additionally, our cash flows from investing activities in 2015 benefited from \$8.0 million in proceeds from the sale of our joint venture. We made \$9.6 million, \$2.5 million and \$2.2 million of capital expenditures in each of the 2016, 2015 and 2014 fiscal years on technology investments related to our new enterprise resource planning (“ERP”) systems.

#### *Cash flows from financing activities*

Net cash used in financing activities was \$55.8 million in 2016 as compared to \$36.7 million and \$9.0 million in 2015 and 2014, respectively. The significant increase in cash used in financing activities in 2016 and 2015 is due to the buyback of Senior Secured Notes in 2015 and 2016 and our debt refinancing in 2016.

In 2016, we used \$362.3 million to buy back our Senior Secured Notes. We also incurred \$5.4 million of debt issuance costs related to the issuance of our new Term Loan B Facility and 2016 ABL Facility. All of these outflows were offset by proceeds from the Term Loan B Facility (net of discount) of \$316.8 million. In 2015, we used \$32.2 million to purchase Senior Secured Notes in the open market. See further discussion in Note 11, “Financing,” to our consolidated financial statements, which are included elsewhere in this report.

## ***Outstanding Indebtedness***

As described more fully in Note 11, “Financing,” we bought back some of our Senior Secured Notes in the latter half of 2015 and the first half of 2016, and on July 18, 2016, refinanced all of our debt instruments.

For additional information regarding our 2016 ABL Facility, our Term Loan B Facility and our capital lease obligations, see Note 11, “Financing,” to our consolidated financial statements, which are included elsewhere in this report.

Substantially all of our assets are pledged as collateral under the agreements governing the Term Loan B Facility and the 2016 ABL Facility. The ABL Facility is secured by a senior-priority interest in our cash, accounts receivable and inventory (which secure the Term Loan B Facility on a junior-priority basis) and the Term Loan B is secured by a senior-priority security interest in the remaining pledged assets (most significant of which is our fixed assets), which secure the ABL Facility on a junior-priority basis.

### ***Term Loan B Facility***

On July 18, 2016, we entered into a long-term credit agreement for the Term Loan B Facility that matures on July 18, 2023. The Term Loan B Facility provides for borrowings of \$320.0 million. Amounts outstanding under the Term Loan B Facility bear interest at a rate per annum equal to, at our option, either (1) 3.00% to 3.25% subject to a total net leverage ratio pricing grid set forth in the Term Loan B Credit Agreement plus an Alternate Base Rate (as defined by the agreement governing the Term Loan B Facility) or (2) 4.00% to 4.25% subject to a total net leverage ratio pricing grid set forth in the agreement governing the Term Loan B Facility plus the Adjusted LIBO Rate (as defined in the agreement governing the Term Loan B Facility). At December 31, 2016, amounts outstanding under the Term Loan B Facility accrued interest at a rate of 5.25%.

The Term Loan B Credit Agreement requires mandatory prepayments based on various events and circumstances as are customary in such agreements. In addition, starting on December 31, 2017, we are subject to a 50% excess cash flow sweep, subject to step-downs to 25% and 0% depending on the total net leverage ratio from time to time. We may, however, voluntarily prepay outstanding loans under the Term Loan B Facility at any time subject to a prepayment premium of 1.00% if such voluntary prepayment occurs before July 18, 2017.

In connection with the Term Loan B Facility, commencing on December 30, 2016, we must make quarterly payments of \$0.8 million with the balance expected to be due on July 18, 2023.

The credit agreement governing the Term Loan B Facility contains certain covenants, obligations and restrictions that are customary in these types of indebtedness. We were in compliance with all covenants relating to the Term Loan B Facility as of December 31, 2016.

For additional information regarding the Term Loan B Facility, see Note 11, “Financing,” to our consolidated financial statements, which are included elsewhere in this report.

### ***The 2016 ABL Facility***

Our borrowing base is equal to a percentage of receivables and inventories less reserves. We may request, but the lenders are not obligated to, increase the maximum borrowings available up to \$200.0 million. At any time, if the amount outstanding under the 2016 ABL Facility exceeds the maximum allowable borrowings, we may be required to make a mandatory prepayment for the amount of the excess borrowings. The agreement governing the 2016 ABL Facility requires us to prepay or cash collateralize the applicable portion of any outstanding revolving loans under circumstances as are customary in agreements of this type. However, we may voluntarily repay and reborrow outstanding loans under the 2016 ABL Facility at any time without a premium or penalty, other than customary “breakage” costs with respect to loans made utilizing the Adjusted LIBO Rate (as defined in the ABL Credit Agreement).

As of December 31, 2016, we had \$197.9 million available for borrowing under the 2016 ABL Facility after giving effect to \$2.1 million of letters of credit outstanding, which are used to provide collateral for our insurance programs.

We may elect to receive advances under the 2016 ABL Facility at either an Alternate Base Rate or Adjusted LIBO Rate, as defined by the agreement governing the 2016 ABL Facility. The unused portion under the 2016 ABL Facility determines the applicable spread added to the Alternate Base Rate or Adjusted LIBO Rate. We had no outstanding borrowings as of December 31, 2016.

The 2016 ABL Facility has an expiration date of July 19, 2021 and contains various debt covenants to which we are subject on an ongoing basis. As of December 31, 2016, we were in compliance with all such covenants.

For additional information regarding the 2016 ABL Facility, see Note 11, “Financing,” to our consolidated financial statements, which are included elsewhere in this report.

### Contractual Obligations

The following table illustrates our contractual commitments as of December 31, 2016:

<b>Contractual commitments</b> <i>(in millions)</i>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020</b>	<b>2021</b>	<b>Beyond</b>	<b>Total</b>
Term Loan B—Principal (a)	\$ 3.2	\$ 3.2	\$ 3.2	\$ 3.2	\$ 3.2	\$ 303.2	\$ 319.2
Term Loan B—Interest (b)	16.7	16.5	16.4	16.2	16.0	24.4	106.2
Capital Lease Obligation (c)	1.5	1.6	1.0	—	—	—	4.1
Purchase Obligations	159.0	2.9	0.7	—	—	—	162.6
IAM National Pension Fund	3.3	—	—	—	—	—	3.3
Leases	2.7	2.2	1.3	0.8	0.5	—	7.5
Total	<u>\$ 186.4</u>	<u>\$ 26.4</u>	<u>\$ 22.6</u>	<u>\$ 20.2</u>	<u>\$ 19.7</u>	<u>\$ 327.6</u>	<u>\$ 602.9</u>

- (a) Represents quarterly payments required in connection with the Term Loan B Facility. As discussed in “Liquidity and Capital Resources—Outstanding Indebtedness,” we are also subject to excess cash flow sweep payments depending on the total net leverage ratio from time to time; however, it is not practicable to estimate these payments.
- (b) Assumes that interest will be paid on the Term Loan B Facility at the rate prevailing at December 31, 2016. Future interest rates may change and actual interest payments could differ from those disclosed in the table above.
- (c) Represents principal and interest portion of capital lease obligation.

We are obligated to make future payments under various contracts such as debt agreements, lease agreements and collective bargaining agreements. Operating lease obligations are payment obligations under leases classified as operating leases. Most leases are for a period of three years but some last up to five years and are primarily for equipment used in our manufacturing and distribution operations. Our purchase obligations are agreements to purchase goods or services that are enforceable and legally binding on us (i.e. non-cancelable) that specify all significant terms, including fixed or minimum quantities, fixed or variable prices and the approximate timing of the transaction. Purchase obligations include the pricing of anticipated metal purchases using contractual metal prices, or where pricing is dependent on prevailing COMEX or London Metal Exchange (“LME”) prices at the time of delivery, market metal prices as of December 31, 2016, as well as energy and utility prices. As a result of the variability in the pricing of many of our metal purchasing obligations, actual amounts may vary from the amounts shown above.

We participate in a multi-employer pension plan under the collective bargaining agreement that covers the East Alton, Illinois operations of our Olin Brass segment and the Alliance, Ohio operations of our A.J. Oster segment. These collective bargaining agreements obligate us to contribute to the union’s pension plan at a rate per eligible hour per covered employee as specified in the agreement. The contributions to the multi-employer plan are a function of employment levels and eligible work hours. As a result, actual amounts may vary from the amounts shown above.

The 2016 ABL Facility bears interest at variable rates, and the outstanding amounts under the 2016 ABL Facility will vary from time to time, so estimating future interest and principal payments under the 2016 ABL Facility is not practicable. The 2016 ABL Facility matures on July 19, 2021.

At December 31, 2016, we had a noncurrent liability for workers’ compensation of \$10.7 million, but as we are unable to reasonably estimate the ultimate timing of settlement, it is not practical to present annual payment information.

At December 31, 2016, we had a liability for uncertain tax positions, including interest and penalties, of \$25.2 million, but as we are unable to reasonably estimate the ultimate amount or timing of settlement or other resolution, it is not practical to present annual payment information.

## **Off-Balance Sheet Arrangements**

We have not created, and are not party to, any special-purpose or off-balance sheet entities for the purpose of raising capital, incurring debt or operating our business. We do not have any off-balance sheet arrangements or relationships with entities that are not consolidated into our financial statements that have or are reasonably likely to have a material current or future effect on our financial condition, changes in financial condition, sales, expenses, results of operations, liquidity, capital expenditures or capital resources.

## **Critical Accounting Policies and Estimates**

The preparation of our consolidated financial statements in accordance with US GAAP requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, equity, revenues and expenses, and various disclosures. Estimates are based on historical experience and on various other assumptions that are believed to be reasonable under the circumstances. The result of this process forms the basis for making judgments about the carrying value of assets and liabilities that are not readily apparent from other sources. We review our estimates and judgments on a regular, ongoing basis. Actual results may differ from these estimates due to changes in circumstances and conditions.

The following accounting policies and estimates are considered critical in light of the potentially material impact that the estimates, judgments and uncertainties affecting the application of these policies might have on our reported financial information.

Our accounting policies are more fully described in Note 2, “Summary of Significant Accounting Policies,” to our consolidated financial statements included elsewhere in this report. There have been no significant changes to our critical accounting policies or estimates for the year ended December 31, 2016.

### ***Revenue Recognition***

We recognize revenue when title and risk of loss are transferred to customers, which is generally the date the product is shipped. Estimates for future rebates on certain product lines and product returns are recognized in the period in which the revenue is recorded. Rebates and returns are estimated based upon our historical experience, combined with a review of current developments. The allowance for doubtful accounts is estimated based upon our historical experience, combined with a review of current developments and the specific identification method of accounts for which payment has become unlikely. Billings to customers for shipping costs are included in net sales and the cost of shipping product to those customers is reflected as a component of cost of sales.

We defer the revenue from the sales of the unprocessed metal to toll customers (and the corresponding deferred expense for the sales) until the finished product has been shipped. The deferred revenue is recorded within accrued liabilities and the related deferred expense is recorded within prepaid expenses and other current assets on the consolidated balance sheets.

### ***Inventories***

Inventories include costs attributable to direct labor and manufacturing overhead but are primarily comprised of material costs. The metals component of inventories that is valued on a LIFO basis comprised approximately 70% of total inventory at both December 31, 2016 and 2015.

Other manufactured inventories, including the direct labor and manufacturing overhead components and certain non-U.S. inventories, are valued on a first-in, first-out (“FIFO”) basis. Elements of cost in finished goods inventory in addition to the cost of material include depreciation, amortization, utilities, consumable production supplies, maintenance, production wages and transportation costs.

Inventories are stated at the lower of cost or market. The market price of metals used in production and related scrap is subject to volatility. During periods when open-market prices decline below net book value, we may need to record a provision to reduce the carrying value of our inventory. We analyze the carrying value of inventory for impairment if circumstances indicate impairment may have occurred. If an impairment occurs, the amount of impairment loss is determined by measuring the excess of the carrying value of inventory over the net realizable value of inventory.

We record an estimate for slow moving and obsolete inventory based upon product knowledge, physical inventory observation, estimated future demand, market conditions and an aging analysis of the inventory on hand. Our policy is to evaluate all inventories including raw material, work-in-process and finished goods. Inventory in excess of our estimated usage requirements is written down to its estimated net realizable value.

### ***Purchase Accounting***

Determining the fair value of certain assets, liabilities and subsidiaries assumed in a business combination is judgmental in nature and often involves the use of significant estimates and assumptions. Some of the more significant estimates and assumptions used in valuing our acquisition of the worldwide metals business of Olin Corporation in 2007 and our acquisition of the order book, customer list and certain other assets of the North American operations of Bolton Metals Product Company (“Bolton”) in January 2008 included projected future cash flows and discount rates reflecting the risk inherent in future cash flows.

We recognized goodwill related to the acquisition of the order book, customer list and certain other assets of Bolton’s North American operations, as the purchase price exceeded the fair value of net assets. For the acquisition of the worldwide metals business of Olin Corporation, the estimated fair value of the net assets exceeded the purchase price, thus creating negative goodwill under then current GAAP guidance. As such, noncurrent assets were assigned no value in the acquisition from Olin Corporation.

### ***Uncertain Tax Positions***

We evaluate the recognition and measurement of uncertain tax positions based on applicable tax law, regulations, case law, administrative rulings and pronouncements and the facts and circumstances surrounding the tax position. Changes in our estimates related to the recognition and measurement of the amount recorded for uncertain tax positions could result in significant changes in our provision for (benefit from) income taxes, which could be material to our consolidated statements of operations.

### ***Derivative Contracts***

We measure the fair value of our derivative contract positions under the provisions of ASC 820, which defines fair value, establishes a framework for measuring fair value and enhances disclosures about fair value measures required under other accounting pronouncements but does not change existing guidance as to whether or not an instrument is carried at fair value. This guidance also specifies a fair value hierarchy based upon the observability of inputs used in valuation techniques.

In accordance with this guidance, fair value measurements are classified under the following hierarchy:

- **Level 1**—Quoted prices for identical instruments in active markets.
- **Level 2**—Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active and model-derived valuations in which all significant inputs or significant value-drivers are observable in active markets.
- **Level 3**—Model-derived valuations in which one or more significant inputs or significant value-drivers are unobservable.

In accordance with ASC 820, we determine the fair value of derivative contracts using Level 2 inputs. As of December 31, 2016, we did not hold assets or liabilities requiring a Level 3 measurement, and there were no transfers between the hierarchy levels during 2016 or 2015. We do not use hedge accounting for our derivative contracts. All gains and losses are recorded as cost of sales in the consolidated statements of operations as these contracts are marked to market each period.

### **Recently Issued and Recently Adopted Accounting Pronouncements**

For information on recently issued and recently adopted accounting pronouncements, see Note 2, “Summary of Significant Accounting Policies,” to the consolidated financial statements, which are included elsewhere in this report.

## Inflation and Seasonality

We experience effects of inflation on input costs, such as wages, medical benefits, natural gas, electricity, plating and other key inputs. We may not be able to offset fully the impact of inflation on these input costs or energy costs through price increases, productivity improvements or cost reduction programs.

There is a slight decrease in our net sales in each fourth quarter as a result of a decrease in demand due to customer shutdowns for the holidays and year-end maintenance of plants and inventory by customers. We also typically experience slight working capital increases in the first quarter as operations start up again. We do not foresee these seasonality trends to change materially.

### Item 7A. Quantitative and Qualitative Disclosures About Market Risk.

Market risk represents the risk of changes in the value of market risk sensitive instruments caused by fluctuations in interest rates, commodity prices and foreign exchange rates. Changes in these factors could cause fluctuations in the results of our operations and cash flows. In the ordinary course of business, we are primarily exposed to changes in commodity prices, interest rates and foreign currency exchange rates. To manage the volatility related to these exposures we use various financial instruments, including some derivatives, to help us manage our metal price, energy price, and interest rate risk. We also use offsetting forward sale and purchase agreements to help mitigate commodity price risks on operating margins. These agreements generally do not contain minimum purchase requirements.

We do not use derivative instruments for trading or speculative purposes and have not elected to use hedge accounting. We manage credit risk associated with derivative contracts by executing derivative instruments with counterparties that we believe are credit-worthy.

The following tables set forth the impact of a 10% price change on our hedging positions as of December 31, 2016 and December 31, 2015, respectively.

*(in millions)*

<i>December 31, 2016</i>	Notional value	Fair value	Unrealized (losses) gains	Impact of 10% price change on fair value
Metals	\$ 6.7	\$ 8.9	\$ 2.2	\$ 0.9
Energy and utilities	1.2	1.4	0.2	0.1
Totals	\$ 7.9	\$ 10.3	\$ 2.4	\$ 1.0

<i>December 31, 2015</i>	Notional value	Fair value	Unrealized (losses) gains	Impact of 10% price change on fair value
Metals	\$ 18.2	\$ 17.1	\$ (1.1)	\$ 1.7
Energy and utilities	4.3	4.0	(0.3)	0.4
Totals	\$ 22.5	\$ 21.1	\$ (1.4)	\$ 2.1

### **Commodity Prices**

In the ordinary course of business, we are exposed to earnings and cash flow volatility resulting from fluctuations in metal, energy and utility costs. We use our balanced book approach, supported, where required, by derivative contracts, to substantially reduce the impact of metal price fluctuations on operating margins. Despite this, we must bear the cost of any shrinkage during production, which may increase the volatility of our results of operations. We also use derivative contracts to reduce uncertainty and volatility in energy and utility costs.

### **Interest Rates**

We are exposed to volatility in interest rates and expense under the terms of our credit agreements. Interest rates under the 2016 ABL Facility and the Term Loan B Facility are comprised of a base rate and margin. The 2016 ABL Facility and the Term Loan B Facility provide the option of a LIBOR or alternate base rate (as defined in the agreements governing the credit facilities) and the Term Loan B Facility rate is subject to a total net leverage ratio pricing grid set forth in the

agreement governing the Term Loan B Facility. We had no amounts outstanding under the 2016 ABL Facility during 2016; however, an increase of 1% in the interest rates on our Term Loan B Facility would have increased our 2016 debt service requirements by approximately \$1.4 million (annualized increase of \$3.2 million).

### ***Foreign Exchange***

We have international operations that accounted for approximately 6% of our net sales in 2016. The functional currency of our operating subsidiaries is the related local currency, and the currency effects of translating the financial statements are included in accumulated other comprehensive income and do not impact earnings unless there is a liquidation or sale of those foreign subsidiaries. During 2016, the fluctuation of the U.S. dollar against other currencies resulted in an unrealized currency translation loss that decreased our equity by \$1.8 million. Gains or losses from currency translation primarily relate to our operations in China (Olin Luotong Metals) and Mexico (A.J. Oster Mexico).

We also have exposure to foreign exchange risk on transactions that can potentially be denominated in foreign currencies other than the U.S. dollar. As our results of operations historically have not been materially affected by foreign currency transaction gains and losses, we do not attempt to hedge foreign currency exposure in a manner that would eliminate the effect of changes in foreign currency exchange rates on net income and cash flow. We do not speculate in foreign currency nor do we hedge the foreign currency translation of our international business to the U.S. dollar for purposes of consolidating our financial results, or other foreign currency net asset positions. During 2016, foreign currency transaction gains and losses resulted in an increase of income before provision for income taxes and equity income of approximately \$0.9 million.

## Item 8. Financial Statements and Supplementary Data.

### Report of Independent Registered Public Accounting Firm

To the Board of Directors and Stockholders of Global Brass and Copper Holdings, Inc.

In our opinion, the consolidated financial statements listed in the index appearing under Item 15(a)(1) present fairly, in all material respects, the financial position of Global Brass and Copper Holdings, Inc. and its subsidiaries at December 31, 2016 and 2015, and the results of their operations and their cash flows for each of the three 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, the Company maintained, in all material respects, effective internal control over financial reporting 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 (COSO). The Company's management is responsible for these financial statements, for maintaining effective internal control over financial reporting and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Annual Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on these financial statements and on the Company's internal control over financial reporting based on our integrated 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 audits to obtain reasonable assurance about whether the financial statements are free of material misstatement and whether effective internal control over financial reporting was maintained in all material respects. Our audits of the financial statements included examining, on a test basis, evidence supporting the amounts and disclosures in the financial statements, assessing the accounting principles used and significant estimates made by management, and evaluating the overall financial statement presentation. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) 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 (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

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

/s/ PricewaterhouseCoopers LLP  
Chicago, Illinois  
March 7, 2017

**Global Brass and Copper Holdings, Inc.**  
**Consolidated Balance Sheets**

	As of	
	December 31, 2016	December 31, 2015
<i>(in millions, except share and par value data)</i>		
<b>Assets</b>		
Current assets:		
Cash	\$ 88.2	\$ 83.5
Accounts receivable (net of allowance of \$0.5 and \$1.2 at December 31, 2016 and December 31, 2015, respectively)	134.0	119.6
Inventories	163.7	176.3
Prepaid expenses and other current assets	18.3	17.4
Income tax receivable	5.4	2.4
Total current assets	409.6	399.2
Property, plant and equipment, net	130.4	111.1
Goodwill	4.4	4.4
Intangible assets, net	0.4	0.5
Deferred income taxes	34.1	38.0
Other noncurrent assets	3.7	4.0
Total assets	\$ 582.6	\$ 557.2
<b>Liabilities and equity</b>		
Current liabilities:		
Current portion of debt	\$ 4.5	\$ 1.1
Accounts payable	88.9	71.0
Accrued liabilities	45.0	53.9
Accrued interest	0.2	3.0
Income tax payable	1.3	0.2
Total current liabilities	139.9	129.2
Noncurrent portion of debt	311.5	342.0
Other noncurrent liabilities	36.0	25.3
Total liabilities	487.4	496.5
Commitments and contingencies (Note 16)		
Global Brass and Copper Holdings, Inc. stockholders' equity:		
Common stock - \$0.01 par value; 80,000,000 shares authorized; 21,712,216 and 21,553,883 shares issued at December 31, 2016 and December 31, 2015, respectively	0.2	0.2
Additional paid-in capital	45.0	36.9
Retained earnings	51.2	22.3
Treasury stock - 79,149 and 46,729 shares at December 31, 2016 and December 31, 2015, respectively	(1.5)	(0.7)
Accumulated other comprehensive loss	(4.1)	(2.3)
Total Global Brass and Copper Holdings, Inc. stockholders' equity	90.8	56.4
Noncontrolling interest	4.4	4.3
Total equity	95.2	60.7
Total liabilities and equity	\$ 582.6	\$ 557.2

The accompanying notes are an integral part of these consolidated financial statements.

**Global Brass and Copper Holdings, Inc.**  
**Consolidated Statements of Operations**

	Year Ended December 31,		
	2016	2015	2014
<i>(in millions, except per share data)</i>			
Net sales	\$ 1,338.5	\$ 1,506.2	\$ 1,711.4
Cost of sales	(1,156.9)	(1,335.9)	(1,546.8)
Gross profit	181.6	170.3	164.6
Selling, general and administrative expenses	(82.8)	(83.2)	(76.9)
Operating income	98.8	87.1	87.7
Interest expense	(26.2)	(39.1)	(39.6)
Loss on extinguishment of debt	(23.4)	(3.1)	—
Gain on sale of investment in joint venture	—	6.3	—
Other income (expense), net	0.2	0.2	(0.5)
Income before provision for income taxes and equity income	49.4	51.4	47.6
Provision for income taxes	(16.6)	(15.9)	(16.6)
Income before equity income	32.8	35.5	31.0
Equity income, net of tax	—	0.3	1.1
Net income	32.8	35.8	32.1
Net income attributable to noncontrolling interest	(0.6)	(0.2)	(0.4)
Net income attributable to Global Brass and Copper Holdings, Inc.	\$ 32.2	\$ 35.6	\$ 31.7
Net income attributable to Global Brass and Copper Holdings, Inc. per common share:			
Basic	\$ 1.50	\$ 1.67	\$ 1.50
Diluted	\$ 1.49	\$ 1.66	\$ 1.49
Weighted average common shares outstanding:			
Basic	21.4	21.3	21.2
Diluted	21.6	21.4	21.3
Dividends declared per common share	\$ 0.1500	\$ 0.1500	\$ 0.1500

The accompanying notes are an integral part of these consolidated financial statements.

**Global Brass and Copper Holdings, Inc.**  
**Consolidated Statements of Comprehensive Income**

<i>(in millions)</i>	Year Ended December 31,		
	2016	2015	2014
Net income	\$ 32.8	\$ 35.8	\$ 32.1
Other comprehensive loss:			
Foreign currency translation adjustment	(2.8)	(2.5)	(1.7)
Income tax benefit on foreign currency translation adjustment	0.7	0.7	0.6
Comprehensive income	30.7	34.0	31.0
Comprehensive income attributable to noncontrolling interest	(0.3)	(0.1)	(0.4)
Comprehensive income attributable to Global Brass and Copper Holdings, Inc.	\$ 30.4	\$ 33.9	\$ 30.6

The accompanying notes are an integral part of these consolidated financial statements.

**Global Brass and Copper Holdings, Inc.**  
**Consolidated Statements of Changes in Equity / (Deficit)**

<i>(in millions, except share data)</i>	Shares outstanding	Common stock	Additional paid-in capital	Retained earnings / (accumulated deficit)	Treasury stock	Accumulated other comprehensive (loss) income	Total Global Brass and Copper Holdings, Inc. stockholders' equity/(deficit)	Noncontrolling interest	Total equity/(deficit)
<b>Balance at December 31, 2013</b>	21,251,486	\$ 0.2	\$ 30.5	\$ (38.6)	\$ —	\$ 0.5	\$ (7.4)	\$ 4.0	\$ (3.4)
Share-based compensation	106,316	—	1.7	—	—	—	1.7	—	1.7
Exercise of stock options	11,605	—	0.1	—	—	—	0.1	—	0.1
Share repurchases	(29,200)	—	—	—	(0.4)	—	(0.4)	—	(0.4)
Excess tax benefit on share-based compensation	—	—	0.2	—	—	—	0.2	—	0.2
Dividends declared	—	—	—	(3.2)	—	—	(3.2)	—	(3.2)
Net income	—	—	—	31.7	—	—	31.7	0.4	32.1
Other comprehensive loss, net of tax	—	—	—	—	—	(1.1)	(1.1)	—	(1.1)
<b>Balance at December 31, 2014</b>	21,340,207	\$ 0.2	\$ 32.5	\$ (10.1)	\$ (0.4)	\$ (0.6)	\$ 21.6	\$ 4.4	\$ 26.0
Share-based compensation	172,678	—	4.2	—	—	—	4.2	—	4.2
Exercise of stock options	11,798	—	0.1	—	—	—	0.1	—	0.1
Share repurchases	(17,529)	—	—	—	(0.3)	—	(0.3)	—	(0.3)
Excess tax benefit on share-based compensation	—	—	0.1	—	—	—	0.1	—	0.1
Dividends declared	—	—	—	(3.2)	—	—	(3.2)	—	(3.2)
Distribution to noncontrolling interest	—	—	—	—	—	—	—	(0.2)	(0.2)
Net income	—	—	—	35.6	—	—	35.6	0.2	35.8
Other comprehensive loss, net of tax	—	—	—	—	—	(1.7)	(1.7)	(0.1)	(1.8)
<b>Balance at December 31, 2015</b>	21,507,154	\$ 0.2	\$ 36.9	\$ 22.3	\$ (0.7)	\$ (2.3)	\$ 56.4	\$ 4.3	\$ 60.7
Share-based compensation	117,267	—	6.9	—	—	—	6.9	—	6.9
Exercise of stock options	41,066	—	0.5	—	—	—	0.5	—	0.5
Share repurchases	(32,420)	—	—	—	(0.8)	—	(0.8)	—	(0.8)
Excess tax benefit on share-based compensation	—	—	0.7	—	—	—	0.7	—	0.7
Dividends declared	—	—	—	(3.3)	—	—	(3.3)	—	(3.3)
Distribution to noncontrolling interest	—	—	—	—	—	—	—	(0.2)	(0.2)
Net income	—	—	—	32.2	—	—	32.2	0.6	32.8
Other comprehensive loss, net of tax	—	—	—	—	—	(1.8)	(1.8)	(0.3)	(2.1)
<b>Balance at December 31, 2016</b>	21,633,067	\$ 0.2	\$ 45.0	\$ 51.2	\$ (1.5)	\$ (4.1)	\$ 90.8	\$ 4.4	\$ 95.2

The accompanying notes are an integral part of these consolidated financial statements.

**Global Brass and Copper Holdings, Inc.**  
**Consolidated Statements of Cash Flows**

<i>(in millions)</i>	Year Ended December 31,		
	2016	2015	2014
<b>Cash flows from operating activities</b>			
Net income	\$ 32.8	\$ 35.8	\$ 32.1
Adjustments to reconcile net income to net cash provided (used in) by operating activities:			
Lower of cost or market adjustment to inventory	(1.7)	6.6	0.2
Unrealized (gain) loss on derivatives	(3.1)	(0.6)	3.0
Depreciation	14.8	13.5	12.2
Amortization of intangible assets	0.1	0.1	0.1
Amortization of debt discount and issuance costs	2.0	2.8	2.7
Loss on extinguishment of debt	23.4	3.1	—
Share-based compensation expense	6.9	4.2	1.7
Excess tax benefit from share-based compensation	(0.7)	(0.1)	(0.2)
Provision for bad debts, net of reductions	(0.3)	0.3	—
Deferred income taxes	4.6	(7.3)	6.4
Loss on disposal of property, plant and equipment	0.1	0.4	—
Gain on sale of investment in joint venture	—	(6.3)	—
Equity earnings, net of distributions	—	0.1	(0.7)
Change in assets and liabilities:			
Accounts receivable	(15.0)	31.4	18.9
Inventories	13.0	4.8	0.9
Prepaid expenses and other current assets	2.8	9.3	(7.0)
Accounts payable	18.5	(11.6)	(2.3)
Accrued liabilities	0.7	(3.5)	1.3
Accrued interest	(2.8)	(0.2)	(0.1)
Income taxes, net	(1.2)	5.7	(3.8)
Other, net	0.4	0.3	(0.9)
Net cash provided by (used in) operating activities	<u>95.3</u>	<u>88.8</u>	<u>64.5</u>
<b>Cash flows from investing activities</b>			
Capital expenditures	(34.4)	(21.4)	(23.4)
Proceeds from sale of property, plant and equipment	0.1	0.1	1.1
Proceeds from sale of investment in joint venture	—	8.0	—
Net cash provided by (used in) investing activities	<u>(34.3)</u>	<u>(13.3)</u>	<u>(22.3)</u>
<b>Cash flows from financing activities</b>			
Borrowings on ABL Facility	1.2	1.2	248.4
Payments on ABL Facility	(1.2)	(1.2)	(253.9)
Retirement of Senior Secured Notes	(345.3)	(29.7)	—
Premium payment on extinguishment of debt	(17.0)	(2.5)	—
Payments of debt issuance costs	(5.4)	—	—
Proceeds from term loan, net of discount	316.8	—	—
Payments on term loan	(0.8)	—	—
Principal payments under capital lease obligation	(1.1)	(1.0)	(0.2)
Dividends paid	(3.2)	(3.2)	(3.2)
Distribution to noncontrolling interest owner	(0.2)	(0.2)	—
Proceeds from exercise of stock options	0.5	0.1	0.1
Excess tax benefit from share-based compensation	0.7	0.1	0.2
Share repurchases	(0.8)	(0.3)	(0.4)
Net cash provided by (used in) financing activities	<u>(55.8)</u>	<u>(36.7)</u>	<u>(9.0)</u>
Effect of foreign currency exchange rates	(0.5)	0.1	0.6
Net increase (decrease) in cash	<u>4.7</u>	<u>38.9</u>	<u>33.8</u>
Cash at beginning of period	83.5	44.6	10.8
Cash at end of period	<u>\$ 88.2</u>	<u>\$ 83.5</u>	<u>\$ 44.6</u>
<b>Noncash investing and financing activities</b>			
Purchases of property, plant and equipment not yet paid	\$ 4.1	\$ 4.3	\$ 4.1
Acquisition of equipment under capital lease obligation	\$ —	\$ —	\$ 6.0
<b>Supplemental disclosure of cash flow information</b>			
Cash paid during the period for:			
Interest, net of amount capitalized	\$ 27.0	\$ 36.5	\$ 37.0
Income taxes, net of refunds	\$ 13.3	\$ 17.5	\$ 14.4

The accompanying notes are an integral part of these consolidated financial statements.

## **1. Organization and Formation of the Company**

Global Brass and Copper Holdings, Inc. (“Holdings,” the “Company,” “we,” “us,” or “our”) was incorporated in Delaware, on October 10, 2007. Holdings, through its wholly-owned principal operating subsidiary, Global Brass and Copper, Inc. (“GBC”), commenced commercial operations on November 19, 2007 through the acquisition of the metals business from Olin Corporation. In 2013, we completed our initial public offering and the shares of common stock began trading on the New York Stock Exchange on May 23, 2013 under the ticker symbol “BRSS.”

GBC is a leading, value-added converter, fabricator, processor and distributor of specialized non-ferrous products in North America. We are operated and managed through three distinct divisions which are also our reportable segments: GBC Metals, LLC (“Olin Brass”), Chase Brass and Copper Company, LLC (“Chase Brass”) and A.J. Oster, LLC (“A.J. Oster”). We also have a Corporate entity which includes certain administrative costs and expenses and the elimination of intercompany balances.

## **2. Summary of Significant Accounting Policies**

### **Principles of Consolidation**

The consolidated financial statements include the accounts of the Company, our wholly-owned subsidiaries and our majority-owned subsidiaries, in which we hold a controlling interest. All intercompany accounts and transactions are eliminated in consolidation. We use the equity method to account for investments in affiliated companies that are 20% to 50% owned, and in cases where we do not hold a controlling voting interest and do not direct the matters that most significantly impact the investee’s operations.

We own an 80% interest in Olin Luotong (GZ) Corporation (“Olin Luotong Metals” or “OLM”), based in China, and Olin Luotong Metals’ financial information is consolidated herein, with the net results attributable to the 20% noncontrolling interest reflected in the accompanying consolidated financial statements.

### **Use of Estimates and Assumptions**

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (“US GAAP”) requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements. In addition, it requires management to make estimates and assumptions that affect the reported amount of net sales and expenses during the reporting period. Actual amounts could differ from those estimates.

### **Accounts Receivable and Allowance for Doubtful Accounts**

Accounts receivable primarily consists of trade receivables for amounts billed to customers for products sold and other receivables. The determination of collectibility of our accounts receivable requires management to make frequent judgments and estimates in order to determine the appropriate allowance needed for doubtful accounts. In circumstances where we are aware of a customer’s inability to meet its financial obligations (e.g., bankruptcy filings or substantial downgrading of credit ratings), we record an allowance for bad debts equal to the amount we believe is not collectible. For all other customers, we recognize allowances for bad debts based on historical collection experience. If circumstances change (e.g., greater than expected defaults or an unexpected material change in a major customer’s ability to meet its financial obligations), the estimate of the allowance could change by a material amount. Accounts are written off once deemed to be uncollectible.

### **Inventories**

Inventories include costs attributable to direct labor and manufacturing overhead but are primarily comprised of metal costs. The metals component of inventories that is valued on a last-in, first-out (“LIFO”) basis comprised approximately 70% of total inventory at both December 31, 2016 and 2015. Other manufactured inventories, including the direct labor and manufacturing overhead components and certain non-U.S. inventories, are valued on a first-in, first-out (“FIFO”) basis. In addition to the cost of material, finished goods inventory includes costs for depreciation, utilities, consumable production supplies, maintenance, production wages and transportation.

Inventories are stated at the lower of cost or market. The market price of metals used in production and related scrap is subject to volatility. We evaluate the need to record adjustments for inventory on a regular basis. During periods when open market prices decline below carrying value, we record a provision to reduce the carrying value of inventory. Additionally, we record an estimate for slow moving and obsolete inventory based upon product knowledge, physical inventory observation, future demand, market conditions and an aging analysis of the inventory on hand. Our policy is to evaluate all inventories including raw material, work-in-process, finished goods, and spare parts. Inventory in excess of estimated usage requirements is written down to its estimated net realizable value.

### **Property, Plant and Equipment**

Property, plant and equipment are recorded at cost. Depreciation of property, plant and equipment, which includes the depreciation of assets under capital leases, is computed using the straight-line method based on the estimated useful lives of the assets as they are placed into service. Property, plant and equipment are generally depreciated over the useful lives, which are detailed in the notes to the accompanying consolidated financial statements. Depreciation expense is recorded in cost of sales or selling, general and administrative costs depending on the nature and use of the underlying asset.

Expenditures for repairs and maintenance are expensed as incurred. Expenditures which improve an asset or extend its estimated useful life are capitalized. Interest costs related to the construction of qualifying assets are capitalized as part of the construction costs. When assets are retired or otherwise disposed of, the related cost and accumulated depreciation are removed from the accounts and any gain or loss is included in the accompanying consolidated statements of operations.

We review property, plant and equipment for impairment when a change in events or circumstances indicates that the carrying value of the assets may not be recoverable. We determine the fair value of our asset group through various valuation techniques, including discounted cash flow models, quoted market values and third-party independent appraisals, as considered necessary.

### **Acquisitions and Goodwill**

All acquisitions are accounted for using the acquisition method as prescribed by ASC 805, *Business Combinations*. The purchase price paid is allocated to the assets acquired and liabilities assumed based on their estimated fair values. Any excess purchase price over the fair value of the net assets acquired is recorded as goodwill.

Goodwill is not amortized but is tested for impairment annually and whenever events or changes in circumstances indicate that impairment may have occurred. Management performs its annual goodwill impairment test as of October 31 and monitors for interim triggering events on an ongoing basis.

We utilized the qualitative goodwill evaluation model for our annual goodwill impairment test conducted as of October 31, 2016. Based on the results of that qualitative assessment, we believe it was more likely than not that the fair value of the reporting units exceeded their carrying values as of October 31, 2016, indicating no impairment of goodwill.

### **Intangible Assets**

Definite-lived intangible assets are recorded at fair value under the purchase method of accounting as of the respective acquisition dates and are amortized using the straight-line method over the estimated useful lives of the assets. Amortization expense related to intangible assets is reflected in selling, general and administrative expenses. Identifiable definite-lived intangible assets are reviewed for impairment whenever events or circumstances indicate that the carrying value may not be recoverable. We do not have any indefinite-lived intangible assets as of December 31, 2016 and 2015. Accumulated amortization was \$1.3 million and \$1.2 million as of December 31, 2016 and 2015, respectively. Annual amortization expense is expected to be \$0.1 million for each of the next four years.

### **Deferred Financing Fees**

Deferred financing fees incurred in connection with the issuance of debt are amortized as non-cash interest expense over the terms of the debt agreements. The unamortized balances of deferred financing fees incurred in connection with the issuance of our long-term debt facilities are presented in noncurrent portion of debt in the consolidated balance sheets and are amortized using the effective interest method over the term of the debt facility. The unamortized balances of deferred financing fees incurred in connection with the issuance of our asset based loan facility are presented in other noncurrent assets in the consolidated balance sheets and are amortized on a straight-line basis over the term of the facility.

### **Derivative Contracts**

Our operating activities expose us to a variety of market risks, including risks related to the effects of commodity prices and interest rates. We monitor and manage these financial exposures as an integral part of our overall risk-management program. We do not enter into derivative contracts for speculation purposes where the objective is to generate profits. We have not applied hedge accounting to our derivative contracts in 2016, 2015 or 2014. We include the fair value of the derivative contracts as assets or liabilities in our consolidated balance sheet and recognize all amounts paid and received and changes in fair value of derivative contracts, including unrealized gains and losses, as adjustments to income in the accompanying consolidated statements of operations.

### **Treasury Stock**

Our Board of Directors has not enacted a program to purchase our common stock in the open market. However, management periodically purchases shares of our common stock from employees as part of equity-based compensation programs. These repurchases are reflected at cost within treasury stock in the consolidated balance sheets.

### **Share-Based Compensation**

We have one share-based compensation plan, which is described in Note 17, "Share-based Compensation." Pursuant to this plan, we have granted non-qualified options, restricted stock and performance-based shares to certain employees and members of our management and our Board of Directors. See Note 17, "Share-based Compensation" for further detail.

### **Revenue Recognition**

We recognize revenue when title and risk of loss are transferred to customers, which is generally the date products are shipped. Estimates for future rebates on certain product lines and product returns are recognized in the period in which the revenue is recorded. Such rebates were not material for 2016, 2015 or 2014. Billings to customers for shipping costs are included in net sales and the cost of shipping product to those customers is reflected in cost of sales in the accompanying consolidated statements of operations.

In connection with sales of unprocessed metal to toll customers, we record deferred expense and deferred revenue in prepaid expenses and other current assets and in accrued liabilities, respectively, in the consolidated balance sheets. The unprocessed metal is held for the account of the toll customers at our premises, together with our other inventory. Deferred expense represents the deferral of cost of sales and deferred revenue represents the deferral of sales revenue, in each case, associated with such sales of unprocessed metal to toll customers. We defer the expense for such unprocessed metal sales (and the corresponding revenue from sales of unprocessed metal) to toll customers until the finished product has been manufactured and shipped, at which time risk of loss and title passes to the customer.

### **Provision for Income Taxes**

The provision for income taxes is determined using the asset and liability approach. The current and deferred tax consequences are measured by applying the provisions of enacted tax laws to determine the amount of taxes payable currently or in future years. Deferred income taxes are provided for temporary differences between the income tax basis of assets and liabilities and their carrying amounts for financial reporting purposes. A valuation allowance is recorded to reduce deferred tax assets when management determines it is "more likely than not" that some portion or all of the deferred tax assets will not be realized.

### **Foreign Currency Translation**

The financial statements of foreign subsidiaries are translated into United States dollars in accordance with ASC 830, *Foreign Currency Matters*. The functional currency of our foreign subsidiaries is the local currency. The consolidated statements of foreign operations are translated at weighted-average exchange rates for the periods. Assets and liabilities are translated at period-end exchange rates and equity transactions are translated at historical rates. Gains and losses resulting from the translation adjustment are reported as a component of other comprehensive income (loss). The income tax effect of currency translation adjustments related to foreign subsidiaries and joint ventures that are not considered indefinitely reinvested are recorded as a component of deferred taxes with an offset to other comprehensive income (loss).

### **Concentrations of Credit Risk and Certain Other Exposures**

We sell and distribute our products to a wide range of companies primarily in the building and housing, munitions, automotive, transportation, coinage, electronics / electrical components and industrial machinery and equipment markets. We perform ongoing credit evaluations of our customers and generally do not require collateral. In 2015, sales to one major customer amounted to 12% of net sales. In 2016 and 2014, no customer represented 10% or more of consolidated net sales.

We use various strategies to minimize the impact of changes in the base metal prices between the date of order from a customer and the date of sale to a customer. Generally, we price a forward replacement purchase of an equivalent amount of copper and other metals under flexible pricing arrangements with our suppliers, at the same time we determine the forward selling price of finished products to our customers. We have various sources of raw materials and are not materially dependent on any one supplier.

As of December 31, 2016, approximately 61% of our employees at various sites were members of unions. Generally, our various agreements with unions in the United States have contractual terms which range from 1 to 5 years. Since our establishment in November 2007, we have not experienced any work stoppages at any of our facilities.

We are required to make contributions to the IAM National Pension Plan (“IAM Plan”), a multi-employer pension plan that covers certain of our union employees. Our obligations may be impacted by the funded status of the plan, the plan’s investment performance, changes in the participant demographics, financial stability of contributing employers and changes in actuarial assumptions. In addition, if a participating employer becomes insolvent and ceases to contribute to a multiemployer plan, the unfunded obligation of the plan will be borne by the remaining participating employers. Under current law, an employer that withdraws or partially withdraws from a multi-employer pension plan may incur withdrawal liability to the plan. Given that the IAM Plan is over funded, many other participating employers are much larger than us and there are a large number of participating employers in the plan, we do not view this to be a significant risk.

### **Self-Insurance Programs**

We are self-insured up to a retention amount for workers’ compensation claims and benefits paid under employee health care programs. Accruals for employee health care are primarily based on estimated undiscounted cost of claims, which includes incurred but not reported claims. Accruals for workers’ compensation benefits and related expenses for claims are estimated, in part, by considering historical claims experience and undiscounted claims estimates provided by insurance carriers, third-party administrators and actuaries. Self-insurance accruals are deemed to be sufficient to cover outstanding claims, including those incurred but not reported as of the estimation date.

### **Environmental Reserves and Environmental Expenses**

We recognize an environmental liability when it is probable the liability exists and the amount is reasonably estimable. We estimate the duration and extent of our remediation obligations based upon internal analyses of clean-up costs, ongoing monitoring costs and estimated legal fees, communications with regulatory agencies and changes in environmental law. If we were to determine that our estimates of the duration or extent of environmental obligations were no longer accurate, we would adjust our environmental liabilities accordingly in the period that such determination is made. Estimated future expenditures for environmental remediation are not discounted to their present value. Accrued environmental liabilities are not reduced by potential insurance reimbursements.

Environmental expenses that relate to ongoing operations are included as a component of cost of sales in the accompanying consolidated statement of operations.

### **Recently Issued and Recently Adopted Accounting Pronouncements**

In August 2016, the Financial Accounting Standards Board (“FASB”) issued Accounting Standards Update (“ASU”) No. 2016-15, *Statement of Cash Flows (Topic 230): Classification of Certain Cash Receipts and Cash Payments* (“ASU 2016-15”). The amendments in ASU 2016-15 address the presentation and classification for eight specific issues in the statement of cash flows, with the objective of reducing diversity in practice. The new standard provides specific guidance for:

- Debt prepayment or debt extinguishment costs;
- Settlement of zero-coupon debt instruments or other debt instruments with coupon interest rates that are insignificant in relation to the effective interest rate of the borrowing;

- Contingent consideration payments made after a business combination;
- Proceeds from the settlement of insurance claims;
- Proceeds from the settlement of corporate-owned life insurance policies, including bank-owned life insurance policies;
- Distributions received from equity method investees;
- Beneficial interests in securitization transactions; and
- Separately identifiable cash flows and application of the predominance principle.

The required transition method will use a full retrospective approach for all periods presented with limited exceptions. The standard update is effective for fiscal years beginning after December 15, 2017 and interim periods within those years. Early adoption is permitted in any interim or annual period. The new standard addresses the classification of debt extinguishment costs, which we have reported in both the current and prior years. The new guidance is consistent with our presentation in the statement of cash flows. Thus, our early adoption of this standard during 2016 did not have an impact on our consolidated financial statements.

In March 2016, the FASB issued ASU No. 2016-9, *Compensation-Stock Compensation (Topic 718)* (“ASU 2016-9”). ASU 2016-9 simplifies various aspects of the accounting for share-based payment transactions, including income tax consequences, classification of awards as either equity or liabilities, classification on the statement of cash flows and forfeiture rate calculations. The provisions of ASU 2016-9 are effective for fiscal years, and interim reporting periods within those fiscal years, beginning after December 15, 2016, with early adoption permitted. We do not believe that the adoption of this standard will have a material impact on our consolidated financial statements, however, the impact is affected by future transactions and changes in our stock price.

In February 2016, the FASB issued ASU No. 2016-2, *Leases (Topic 842)* (“ASU 2016-2”). ASU 2016-2 sets out the principles for the recognition, measurement, presentation and disclosure of leases for both parties to a contract (i.e., lessees and lessors). The new standard requires lessees to apply a dual approach, classifying leases as either finance or operating leases based on the principle of whether or not the lease effectively finances a purchase by the lessee. This classification will determine whether lease expense is recognized based on an effective interest method (finance lease) or on a straight line basis over the term of the lease (operating lease). A lessee is also required to record a right-of-use asset and a lease liability for all leases with a term of greater than 12 months regardless of their classification. Leases with a term of 12 months or less will be accounted for similar to existing guidance for operating leases today. ASU 2016-2 supersedes the existing guidance on accounting for leases in “*Leases (Topic 840)*.” The provisions of ASU 2016-2 are effective for fiscal years, and interim reporting periods within those fiscal years, beginning after December 15, 2018. Early adoption is permitted and the provisions are to be applied using a modified retrospective approach. We are in the process of evaluating the impact of adoption on our consolidated financial statements.

In September 2015, the FASB issued ASU 2015-16, *Business Combinations (Topic 805): Simplifying the Accounting for Measurement-Period Adjustments* (“ASU 2015-16”). ASU 2015-16 requires that an acquirer recognize adjustments to provisional amounts that are identified during the measurement period in the reporting period in which the adjustment amounts are determined. ASU 2015-16 is effective for fiscal years, and interim reporting periods within those fiscal years, beginning after December 15, 2015. The adoption of this standard did not have a material impact on our consolidated financial statements.

In May 2014, the FASB issued ASU No. 2014-9, *Revenue from Contracts with Customers (Topic 606)* (“ASU 2014-9”). The guidance provides companies with a single model for use in accounting for revenue arising from contracts with customers and supersedes current revenue recognition guidance, including industry-specific revenue guidance. The FASB subsequently issued ASU No. 2015-14, *Revenue From Contracts With Customers (Topic 606): Deferral of the Effective Date* (“ASU 2015-14”), ASU No. 2016-8, *Revenue from Contracts with Customers - Principal versus Agent Considerations (Reporting Revenue Gross versus Net) (Topic 606)* (“ASU 2016-8”), ASU No. 2016-10, *Identifying Performance Obligations and Licensing (Topic 606)*, ASU No. 2016-12, *Narrow-Scope Improvements and Practical Expedients (Topic 606)* and ASU No. 2016-20, *Technical Corrections and Improvements to Topic 606, Revenue from Contracts with Customers*, which further clarify aspects of the initial ASU. The guidance is effective for fiscal years, and interim reporting periods within those fiscal years, beginning after December 15, 2017. The revenue recognition guidance permits companies to either apply the requirements retrospectively to all prior periods presented, or apply the requirements in the year of adoption, through a cumulative adjustment. We are in the process of evaluating the impact of adoption on our consolidated financial statements.

### 3. Earnings Per Share

Basic earnings per share is computed based on the weighted-average number of common shares outstanding and diluted earnings per share is computed based on the weighted-average number of common shares outstanding adjusted by the number of additional shares that would have been outstanding had potentially dilutive common shares been issued. Potentially dilutive securities include nonvested share awards and stock options for which the exercise price was less than the average market price of our outstanding common stock. Nonvested performance-based share awards are included in the average diluted shares outstanding for each period if established performance criteria have been met at the end of the respective periods.

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

	Year Ended December 31,		
	2016	2015	2014
<i>(in millions, except per share data)</i>			
<b>Numerator</b>			
Net income attributable to Global Brass and Copper Holdings, Inc.	\$ 32.2	\$ 35.6	\$ 31.7
<b>Denominator</b>			
Weighted-average common shares outstanding	21.4	21.3	21.2
Effect of potentially dilutive securities:			
Stock options and nonvested share awards	0.2	0.1	0.1
Weighted-average common shares outstanding, assuming dilution	<u>21.6</u>	<u>21.4</u>	<u>21.3</u>
Anti-dilutive shares excluded from above	0.1	—	0.1
Net income attributable to Global Brass and Copper Holdings, Inc. per common share:			
Basic	\$ 1.50	\$ 1.67	\$ 1.50
Diluted	\$ 1.49	\$ 1.66	\$ 1.49

### 4. Segment Information

Our Chief Operating Decision Maker allocates resources and evaluates performance at the divisional level. As such, we have determined that we have three reportable segments: Olin Brass, Chase Brass and A.J. Oster.

Olin Brass is a leading manufacturer, fabricator and converter of non-ferrous products, including sheet, strip, foil, tube and fabricated products. Olin Brass also rerolls and forms other alloys such as stainless steel, carbon steel and aluminum. Sheet and strip is generally manufactured from copper and copper-alloy scrap. Olin Brass's products are used in five primary markets: building and housing, munitions, automotive, coinage, and electronics / electrical components.

Chase Brass is a leading manufacturer of brass rod in North America. Chase Brass primarily manufactures rod in round and other shapes, ranging from 1/4 inch to 4.5 inches in diameter. The key attributes of brass rod include its machinability, corrosion resistance and moderate strength, making it especially suitable for forging and machining products such as valves and fittings. Brass rod is generally manufactured from copper or copper-alloy scrap. Chase Brass produces brass rod used in production applications which can be grouped into four primary markets: building and housing, transportation, electronics / electrical components and industrial machinery and equipment.

A.J. Oster primarily processes and distributes copper and copper-alloy sheet, strip and foil through six strategically-located service centers in the United States, Puerto Rico and Mexico. Each A.J. Oster service center reliably provides a broad range of high quality products at quick lead-times in small quantities. These capabilities, combined with A.J. Oster's operations of precision slitting, hot tinning, traverse winding, cutting and special packaging, provide value to a broad customer base. A.J. Oster's products are used in three primary markets: building and housing, automotive and electronics / electrical components.

Corporate includes compensation for corporate executives and officers, corporate office and administrative salaries, and professional fees for accounting, tax and legal services. Corporate also includes interest expense, state and federal income taxes, overhead costs, share-based compensation expense, gains and losses associated with certain acquisitions and dispositions and the elimination of intercompany sales and balances.

The Chief Operating Decision Maker evaluates performance and determines resource allocations based on a number of factors, the primary performance measure being adjusted EBITDA.

Adjusted EBITDA is defined as net income attributable to Global Brass and Copper Holdings, Inc., plus interest, taxes, depreciation and amortization (“EBITDA”) adjusted to exclude the following:

- unrealized gains and losses on derivative contracts in support of our balanced book approach;
- unrealized gains and losses associated with derivative contracts related to energy and utility costs;
- the impact associated with lower of cost or market adjustments to inventory;
- gains and losses due to the depletion of a LIFO layer of inventory;
- share-based compensation expense;
- loss on extinguishment of debt;
- income accretion related to Dowa Olin Metal Corporation (the “Dowa Joint Venture”);
- restructuring and other business transformation charges;
- specified legal and professional expenses; and
- certain other items.

Each of these items are excluded because our management believes they are not indicative of the ongoing performance of our core operations.

**Global Brass and Copper Holdings, Inc.**  
**Notes to Consolidated Financial Statements**

Below is a reconciliation of adjusted EBITDA of operating segments to income before provision for income taxes and equity income:

<i>(in millions)</i>	Year Ended December 31,		
	2016	2015	2014
<b>Net Sales, External Customers</b>			
Olin Brass	\$ 554.1	\$ 670.5	\$ 794.2
Chase Brass	501.7	542.5	603.6
A.J. Oster	282.7	293.2	313.6
Total net sales, external customers	<u>\$ 1,338.5</u>	<u>\$ 1,506.2</u>	<u>\$ 1,711.4</u>
<b>Intersegment Net Sales</b>			
Olin Brass	\$ 75.5	\$ 51.4	\$ 53.6
Chase Brass	1.0	1.6	0.1
A.J. Oster	—	0.1	0.3
Total intersegment net sales	<u>\$ 76.5</u>	<u>\$ 53.1</u>	<u>\$ 54.0</u>
<b>Adjusted EBITDA</b>			
Olin Brass	\$ 49.8	\$ 48.3	\$ 36.9
Chase Brass	68.0	68.9	69.2
A.J. Oster	18.4	15.8	16.2
Total adjusted EBITDA of operating segments	<u>136.2</u>	<u>133.0</u>	<u>122.3</u>
Corporate	(17.7)	(11.9)	(12.6)
Depreciation expense	(14.8)	(13.5)	(12.2)
Amortization of intangible assets	(0.1)	(0.1)	(0.1)
Interest expense	(26.2)	(39.1)	(39.6)
Net income attributable to noncontrolling interest	0.6	0.2	0.4
Unrealized gain (loss) on derivative contracts (a)	3.1	0.6	(3.0)
LIFO liquidation (loss) gain (b)	(1.9)	(0.1)	(0.6)
Loss on extinguishment of debt (c)	(23.4)	(3.1)	—
Equity method investment income (d)	—	(0.1)	(0.4)
Specified legal / professional expenses (e)	(1.2)	(2.8)	(4.3)
Lower of cost or market adjustment to inventory (f)	1.7	(6.6)	(0.2)
Share-based compensation expense (g)	(6.9)	(4.2)	(1.7)
Restructuring and other business transformation charges (h)	—	(0.9)	(0.4)
Income before provision for income taxes and equity income	<u>\$ 49.4</u>	<u>\$ 51.4</u>	<u>\$ 47.6</u>

- (a) Represents unrealized gains and losses on derivative contracts.
- (b) Calculated based on the difference between the base year LIFO carrying value and the metal prices prevailing in the market at the time of inventory depletion.
- (c) Represents the loss on extinguishment of debt recognized in connection with the open market purchases and refinancing of our former senior secured notes (“Senior Secured Notes”) and asset-based revolving loan facility (“ABL Facility”).
- (d) Excludes accretion income of \$0.2 million and \$0.7 million for 2015 and 2014, respectively. Equity method investment income is exclusive to Olin Brass. In 2015, we sold our investment in the Dowa Joint Venture.
- (e) Represents selected professional fees for accounting, tax, legal and consulting services incurred as a public company that exceed our expected long-term requirements.
- (f) Represents the impact of lower of cost or market adjustments to domestic, non-copper metal inventory.
- (g) Represents compensation expense resulting from stock compensation awards to certain employees and our Board of Directors.
- (h) Restructuring and other business transformation charges in 2015 and 2014 represent severance charges at Olin Brass.

<i>(in millions)</i>	Year Ended December 31,		
	2016	2015	2014
<b>Depreciation and amortization</b>			
Olin Brass	\$ 9.2	\$ 8.6	\$ 7.9
Chase Brass	4.9	4.3	3.6
A.J. Oster	0.5	0.4	0.5
Corporate	0.3	0.3	0.3
Total depreciation and amortization	<u>\$ 14.9</u>	<u>\$ 13.6</u>	<u>\$ 12.3</u>
<b>LIFO liquidation (loss)/gain</b>			
Olin Brass	\$ (1.6)	\$ 0.1	\$ (1.5)
Chase Brass	(0.3)	—	—
A.J. Oster	0.1	(1.0)	—
Corporate	(0.1)	0.8	0.9
Total LIFO liquidation (loss)/gain	<u>\$ (1.9)</u>	<u>\$ (0.1)</u>	<u>\$ (0.6)</u>
<b>Interest expense</b>			
Olin Brass	\$ 0.3	\$ 0.4	\$ 0.3
Corporate	25.9	38.7	39.3
Total interest expense	<u>\$ 26.2</u>	<u>\$ 39.1</u>	<u>\$ 39.6</u>
<b>Capital expenditures</b>			
Olin Brass	\$ 15.1	\$ 10.0	\$ 16.9
Chase Brass	10.0	8.0	5.3
A.J. Oster	9.3	3.4	1.1
Corporate	—	—	0.1
Total capital expenditures	<u>\$ 34.4</u>	<u>\$ 21.4</u>	<u>\$ 23.4</u>

<i>(in millions)</i>	As of December 31,	
	2016	2015
<b>Total Assets</b>		
Olin Brass	\$ 230.8	\$ 228.6
Chase Brass	120.4	116.6
A.J. Oster	99.6	90.2
Corporate	131.8	121.8
Total assets	<u>\$ 582.6</u>	<u>\$ 557.2</u>

Summarized geographic information is shown in the following table. Net sales are attributed to individual countries based on the location from which the products are shipped.

<i>(in millions)</i>	Year Ended December 31,		
	2016	2015	2014
<b>Net sales:</b>			
United States	\$ 1,261.6	\$ 1,421.5	\$ 1,613.9
Asia Pacific	37.1	41.1	50.6
Mexico	39.8	43.6	46.9
Total net sales	<u>\$ 1,338.5</u>	<u>\$ 1,506.2</u>	<u>\$ 1,711.4</u>

Substantially all long-lived assets are maintained in the United States.

In 2015, net sales to one Olin Brass customer amounted to \$185.5 million, which represents 12% of our consolidated net sales for 2015. No customer represented 10 percent or more of consolidated revenues in 2016 or 2014.

## 5. Inventories

Inventories were as follows:

<i>(in millions)</i>	As of December 31,	
	2016	2015
Raw materials and supplies	\$ 22.7	\$ 31.3
Work-in-process	65.6	69.7
Finished goods	75.4	75.3
Total inventories	<u>\$ 163.7</u>	<u>\$ 176.3</u>

We recorded adjustments for certain domestic, non-copper metal inventory during 2016, 2015 and 2014 resulting from the fluctuations in market value of these metals. These adjustments decreased cost of sales by \$1.7 million in 2016 and increased cost of sales by \$6.6 million and \$0.2 million in 2015 and 2014, respectively.

During 2016, 2015 and 2014, certain domestic metal inventory quantities were reduced resulting in a liquidation of LIFO inventory layers. The effect of this reduction of inventory increased cost of sales by \$1.9 million, \$0.1 million and \$0.6 million in 2016, 2015 and 2014, respectively.

Below is a summary of inventories valued at period-end market values compared to the as reported values.

<i>(in millions)</i>	As of December 31,	
	2016	2015
Market value	\$ 232.9	\$ 213.1
As reported	163.7	176.3
Excess of market over reported value	<u>\$ 69.2</u>	<u>\$ 36.8</u>

## 6. Prepaid Expenses and Other Current Assets

Prepaid expenses and other current assets were as follows:

<i>(in millions)</i>	As of December 31,	
	2016	2015
Workers' compensation plan deposits	\$ 6.3	\$ 6.0
Deferred cost of sales - toll customers	4.0	4.0
Derivative contract assets	2.8	1.8
Prepaid insurance	1.7	2.0
Prepaid tooling	—	0.5
Other	3.5	3.1
Total prepaid expenses and other current assets	<u>\$ 18.3</u>	<u>\$ 17.4</u>

**7. Property, Plant and Equipment**

Property, plant and equipment balances, including assets under capital lease, were as follows:

<i>(in millions)</i>	As of December 31,		Useful Life (in years)
	2016	2015	
Land improvements	\$ 3.2	\$ 2.9	12 - 20
Buildings and building improvements	26.0	18.8	20 - 50
Machinery and equipment	130.3	119.0	3 - 12
Leasehold improvements	1.1	1.1	
Construction-in-process	31.1	17.0	
Gross property, plant and equipment	191.7	158.8	
Accumulated depreciation	(61.3)	(47.7)	
Property, plant and equipment, net	\$ 130.4	\$ 111.1	

Leasehold improvements are amortized over the lesser of their useful lives or the remaining lease term.

We capitalized interest relating to the construction of long-term assets in the amount of \$1.1 million in 2016, \$0.2 million in 2015 and \$0.2 million in 2014.

See Note 11, "Financing," to the accompanying consolidated financial statements for further information regarding the capital lease.

**8. Investment in Joint Venture**

During 2015 and 2014, we received cash dividends from the Dowa Joint Venture of \$0.4 million and \$0.4 million, respectively, which were recorded as a reduction in our investment in the Dowa Joint Venture.

In April 2015, we sold our 50% share of the Dowa Joint Venture to our joint venture partner, DOWA Metaltech Co. Ltd. for \$8.0 million. Thus, we no longer own any portion of the Dowa Joint Venture. During 2015, we recognized a gain of \$6.3 million and related tax expense of \$1.5 million on the sale.

**9. Other Noncurrent Assets**

Other noncurrent assets consisted of the following:

<i>(in millions)</i>	As of December 31,	
	2016	2015
Deferred financing fees, net - ABL Facility	\$ 1.7	\$ 1.5
Utility and other deposits	1.3	1.4
Other	0.7	1.1
Total other noncurrent assets	\$ 3.7	\$ 4.0

**10. Accrued Liabilities**

Accrued liabilities consisted of the following:

<i>(in millions)</i>	As of December 31,	
	2016	2015
Compensation and benefits	\$ 25.1	\$ 23.8
Deferred sales revenue - toll customers	4.0	4.0
Workers' compensation	3.0	13.3
Insurance	3.1	2.6
Utilities	2.0	1.6
Professional fees	1.8	2.5
Taxes	1.3	1.3
Tooling	—	0.5
Other	4.7	4.3
Total accrued liabilities	<u>\$ 45.0</u>	<u>\$ 53.9</u>

**11. Financing**

Long-term debt consisted of the following:

<i>(in millions)</i>	As of December 31,	
	2016	2015
Term Loan B Facility	\$ 319.2	\$ —
Senior Secured Notes	—	345.3
Deferred financing fees and discount on debt	(6.9)	(7.0)
Obligations under capital lease	3.7	4.8
Total debt	<u>316.0</u>	<u>343.1</u>
Current portion of debt	(4.5)	(1.1)
Noncurrent portion of debt	<u>\$ 311.5</u>	<u>\$ 342.0</u>

*Term Loan B Facility*

On July 18, 2016, we entered into a long-term credit agreement that matures on July 18, 2023 (the "Term Loan B Credit Agreement" and the loans thereunder, the "Term Loan B Facility").

The Term Loan B Facility provides for borrowings of \$320.0 million. Amounts outstanding under the Term Loan B Facility bear interest at a rate per annum equal to, at our option, either (1) 3.00% to 3.25% subject to a total net leverage ratio pricing grid set forth in the Term Loan B Credit Agreement plus an Alternate Base Rate (as defined in the Term Loan B Credit Agreement) or (2) 4.00% to 4.25% subject to a total net leverage ratio pricing grid set forth in the Term Loan B Credit Agreement plus the Adjusted LIBO Rate (as defined in the Term Loan B Credit Agreement). At December 31, 2016, amounts outstanding under the Term Loan B Facility accrued interest at a rate of 5.25%. We may request an increase in the aggregate term loans, at our option and under certain circumstances, of up to an additional \$75.0 million or an unlimited amount so long as after giving effect to any incremental facility or incremental equivalent debt, the net senior secured leverage ratio does not exceed 2.50 to 1.00 (but the lenders, in either case, are not obligated to grant such an increase).

The Term Loan B Credit Agreement requires mandatory prepayments based on various events and circumstances as are customary in such agreements. In addition, starting on December 31, 2017, we are subject to a 50% excess cash flow sweep, subject to step-downs to 25% and 0% depending on the total net leverage ratio from time to time. We may, however, voluntarily prepay outstanding loans under the Term Loan B Facility at any time subject to a prepayment premium of 1.00% if the voluntary prepayment occurs before July 18, 2017.

The Term Loan B Credit Agreement also contains a financial covenant that requires us to maintain a total net leverage ratio that is tested quarterly. The “total net leverage ratio” requires us to maintain a ratio of the amount of total net debt to “Consolidated Adjusted EBITDA” (for all terms, as defined in the Term Loan B Credit Agreement) for the twelve consecutive months prior to the date on which the ratio is tested of no greater than 4.0 to 1.0.

In connection with the Term Loan B Facility, commencing on December 30, 2016, we must make quarterly payments of \$0.8 million (\$3.2 million annually) with the balance expected to be due on July 18, 2023.

#### *2016 ABL Facility*

On July 18, 2016, we entered into a credit agreement with a syndicate of lenders that matures on July 19, 2021 (the “ABL Credit Agreement” and the facility thereunder, the “2016 ABL Facility”). No amounts were outstanding under this facility at closing.

The 2016 ABL Facility is an asset-based revolving loan facility that provides for borrowings of up to the lesser of \$200.0 million or the borrowing base, in each case less outstanding loans and letters of credit. As of December 31, 2016, available borrowings under the 2016 ABL Facility were \$197.9 million after giving effect to \$2.1 million of letters of credit outstanding, which are used to provide collateral for our insurance programs. We may request an increase in the maximum commitments, at our option and under certain circumstances, of up to \$200.0 million (but the lenders are not obligated to grant such an increase).

Amounts outstanding, if any, under the 2016 ABL Facility bear interest at a rate per annum equal to, at our option, either (1) 0.25% to 0.75% subject to an average quarterly availability pricing grid set forth in the ABL Credit Agreement plus an Alternate Base Rate (as defined in the ABL Credit Agreement) or (2) 1.25% to 1.75% subject to an average quarterly availability pricing grid set forth in the ABL Credit Agreement plus the Adjusted LIBO Rate (as defined in the ABL Credit Agreement). Unused amounts under the 2016 ABL Facility incur an unused line fee of 0.375% or 0.25% per annum (depending on the percentage of aggregate revolving exposure), payable in arrears on a quarterly basis.

The ABL Credit Agreement requires us to prepay or cash collateralize the applicable portion of any outstanding revolving loans under circumstances as are customary in agreements of this type. However, we may voluntarily repay and reborrow outstanding loans under the 2016 ABL Facility at any time without a premium or penalty, other than customary “breakage” costs with respect to loans made utilizing the Adjusted LIBO Rate (as defined in the ABL Credit Agreement).

The ABL Credit Agreement also contains a financial covenant requiring us to maintain a fixed charge coverage ratio that is tested whenever excess availability, as defined in the ABL Credit Agreement, falls below the greater of \$20.0 million or 10% of our potential borrowings. The “fixed charge coverage ratio” requires us to maintain a ratio of “Consolidated Adjusted EBITDA” to the amount of our “fixed charges” (for all terms, as defined in the ABL Credit Agreement) for the twelve consecutive months prior to the date on which the ratio is tested equal to or greater than 1.0 to 1.0.

#### *The Credit Agreements*

The ABL Credit Agreement and the Term Loan B Credit Agreement (together, the “Credit Agreements”) contain various other covenants consistent with debt agreements of this kind, such as restrictions on the amounts of dividends we can pay.

A violation of covenants under either of the Credit Agreements may result in default or an event of default under the 2016 ABL Facility or Term Loan B Facility, as applicable. Upon the occurrence of an event of default under one or both of the Credit Agreements, the requisite lenders could elect to declare all amounts of such indebtedness outstanding to be immediately due and payable and terminate any commitments to extend further credit.

If we are unable to repay those amounts, the lenders under the applicable Credit Agreement may proceed against the collateral granted to them to secure such indebtedness. Substantially all of our assets are pledged as collateral under the Credit Agreements. The ABL Facility is secured by a senior-priority interest in our cash, accounts receivable and inventory (which secure the Term Loan B Facility on a junior-priority basis) and the Term Loan B is secured by a senior-priority security interest in the remaining pledged assets (most significant of which is our fixed assets), which secure the ABL Facility on a junior-priority basis. If the lenders accelerate the repayment of borrowings, such acceleration could have a material adverse effect on our business, financial condition, results of operations or cash flows. Furthermore, cross-default provisions in the Credit Agreements provide that any default under the Credit Agreements or other significant debt agreements could trigger a cross-default under the Credit Agreements, as applicable.

As of December 31, 2016, we were in compliance with all of the covenants relating to the Credit Agreements.

Refinancing

Prior to obtaining the Term Loan B Credit Agreement and the ABL Credit Agreement, our debt facilities consisted of Senior Secured Notes and a former ABL Facility. During the year ended December 31, 2016, we purchased in the open market an aggregate of \$40.0 million principal amount of our then existing Senior Secured Notes, for an aggregate purchase price of \$42.5 million, plus accrued interest. On July 18, 2016, we used a portion of the proceeds from our Term Loan B Facility to redeem the remaining \$305.3 million principal amount outstanding of our Senior Secured Notes. As part of this refinancing and in accordance with the indenture governing the then existing Senior Secured Notes (“Indenture”), we called the notes at a redemption price of 104.75% plus accrued interest, and we terminated the related Indenture.

We recognized a loss on the extinguishment of debt in the year ended December 31, 2016 of \$23.4 million, which includes a premium of \$17.0 million and the write-off of \$6.4 million of unamortized debt issuance costs for both the Senior Secured Notes and the former ABL Facility.

No amounts were outstanding under the former ABL Facility at the time of termination.

During the year ended December 31, 2015, we purchased in the open market an aggregate of \$29.7 million principal amount of our then existing Senior Secured Notes for an aggregate purchase price of \$32.2 million, plus accrued interest. As a result of these purchases, we recognized a loss on the extinguishment of debt of \$3.1 million, which includes a premium of \$2.5 million and the write-off of \$0.6 million of unamortized debt issuance costs.

Capital Lease Obligations

During 2014, we incurred capital lease obligations related to the acquisition of certain assets. As of December 31, 2016, assets recorded under capital lease obligations totaled \$6.0 million and related accumulated depreciation totaled \$3.0 million. As of December 31, 2015, assets recorded under capital lease obligations totaled \$6.0 million and related accumulated depreciation totaled \$1.8 million. Interest recorded on capital lease obligations is included in interest expense in the accompanying consolidated statements of operations.

Future minimum capital lease payments at December 31, 2016 are as follows:

<i>(in millions)</i>		
2017	\$	1.5
2018		1.6
2019		1.0
Total	\$	4.1
Amount representing interest		(0.4)
Present value of minimum lease payments	\$	3.7
Current portion of capital lease obligations		(1.3)
Noncurrent portion of capital lease obligations	\$	2.4

**12. Income Taxes**

Income before provision for income taxes and equity income is comprised of the following:

	Year Ended December 31,		
<i>(in millions)</i>	2016	2015	2014
Domestic	\$ 40.7	\$ 45.5	\$ 42.9
Foreign	8.7	5.9	4.7
Total	\$ 49.4	\$ 51.4	\$ 47.6

**Global Brass and Copper Holdings, Inc.**  
**Notes to Consolidated Financial Statements**

The provision for income taxes is summarized as follows:

<i>(in millions)</i>	Year Ended December 31,		
	2016	2015	2014
<b>Current tax provision</b>			
U.S. federal	\$ 8.0	\$ 18.8	\$ 8.2
State and local	1.2	2.5	0.9
Foreign	2.8	1.9	1.1
Total current	<u>12.0</u>	<u>23.2</u>	<u>10.2</u>
<b>Deferred tax provision</b>			
U.S. federal	4.0	(5.9)	4.9
State and local	0.8	(1.0)	1.2
Foreign	(0.2)	(0.4)	0.3
Total deferred	<u>4.6</u>	<u>(7.3)</u>	<u>6.4</u>
Total provision	<u>\$ 16.6</u>	<u>\$ 15.9</u>	<u>\$ 16.6</u>

The effective income tax rate differs from the amount determined by applying the applicable U.S. statutory federal income tax rate to pretax results primarily as a result of the following:

	Year Ended December 31,		
	2016	2015	2014
<b>Statutory provision rate</b>	35.0 %	35.0 %	35.0 %
<b>Permanent differences and other items</b>			
State tax provision	2.4 %	2.0 %	2.4 %
Section 199 manufacturing credit	(2.0)%	(3.8)%	(2.0)%
Incremental tax effects of foreign earnings	(0.2)%	(0.8)%	(2.1)%
Valuation allowance	(2.0)%	(1.3)%	2.9 %
Other	0.4 %	(0.2)%	(1.3)%
Effective income tax rate	<u>33.6 %</u>	<u>30.9 %</u>	<u>34.9 %</u>

Deferred tax assets and liabilities are comprised of the following:

<i>(in millions)</i>	As of December 31,	
	2016	2015
<b>Deferred tax assets</b>		
Inventory	\$ 47.0	\$ 50.4
Accruals and other reserves	7.1	7.8
Accounts receivable	0.6	1.0
UNICAP adjustment	1.6	1.8
Derivative contracts	0.1	1.4
Other	5.4	2.9
Valuation allowance	—	(1.0)
Total deferred tax assets, net of valuation allowance	\$ 61.8	\$ 64.3
<b>Deferred tax liabilities</b>		
Fixed assets and intangibles	\$ 20.5	\$ 18.7
Investments in foreign entities	7.1	6.6
Financing fees	0.1	1.0
Total deferred tax liabilities	27.7	26.3
Net deferred tax asset	\$ 34.1	\$ 38.0

At December 31, 2016 and 2015, our deferred tax assets include \$24.0 million and \$23.9 million, respectively, related to the impact of the November 19, 2007 purchase price allocations to LIFO inventories for tax purposes, which resulted in a bargain purchase gain. There is a corresponding liability recorded in other noncurrent liabilities in the consolidated balance sheets in accordance with the provisions of ASC 740, *Income Taxes*.

At December 31, 2016, we had a foreign tax credit carryforward of \$1.8 million which can be utilized through 2026.

Deferred tax assets are recorded for the estimated future benefit of foreign tax credits and other temporary differences to the extent we believe these assets will be realized. A valuation allowance is recorded when we cannot reach the conclusion that it is more likely than not that the deferred tax assets will be realized. Based on this evaluation, in 2016, we decreased the valuation allowance against our foreign tax credits by \$1.0 million. In 2015, we decreased the valuation allowance and in 2014, we increased this valuation allowance by \$0.7 million and \$1.4 million, respectively. As of December 31, 2016, we no longer carry a valuation allowance on our foreign tax credits as we expect to utilize all the credits. We also recorded \$0.2 million and \$0.1 million of state net operating loss benefits in 2016 and 2015, respectively. The majority of the state net operating losses expire between 2031 through 2036.

We do not assert permanent reinvestment on the excess of our financial reporting over tax basis of our foreign investments. As a result, we have established deferred tax liabilities of \$7.1 million and \$6.6 million for the U.S. federal and state income taxes, net of applicable credits, on the excess financial reporting over tax basis of our foreign entities at December 31, 2016 and 2015, respectively. We plan foreign remittance amounts based on projected cash flow needs as well as the working capital and long-term investment requirements of our foreign subsidiaries and our domestic operations.

#### **Uncertain Tax Positions**

We are subject to income taxation in several jurisdictions around the world. We believe that an adequate provision has been made for any adjustments that may result from tax examinations. However, the outcome of tax audits cannot be predicted with certainty. If any issues addressed in our tax audits are resolved in a manner not consistent with our expectations, we could be required to adjust our provision for income taxes in the period such resolution occurs. Although timing of the resolution and/or closure of audits is not certain, we believe we have adequately reserved for any potential tax exposures at December 31, 2016. Our U.S. federal returns for the period ended December 31, 2013 and all subsequent periods remain open for audit. The majority of state returns for the period ended December 31, 2012 and all subsequent periods remain open for audit.

At December 31, 2016 and 2015, we had \$25.2 million and \$25.1 million, respectively, of unrecognized tax benefits, none of which would impact the effective tax rate, if recognized. Estimated interest and penalties related to the underpayment of

income taxes are classified as a component of the provision for income taxes in the accompanying consolidated statements of operations. Accrued interest and penalties as of both December 31, 2016 and 2015 were nil and \$0.1 million, respectively. Our liability for uncertain tax positions, including accrued interest and penalties, of \$25.2 million and \$25.2 million at December 31, 2016 and 2015, respectively, are presented in other noncurrent liabilities in the accompanying consolidated balance sheets.

A reconciliation of the summary of activity of our uncertain tax positions is summarized as follows:

*(in millions)*

<b>Balance at January 1, 2015</b>	\$	25.2
Additions for tax positions related to prior years		—
Reductions for tax positions related to prior years		(0.1)
Reductions due to tax settlements		—
Reductions due to tax statute of limitations		—
<b>Balance at December 31, 2015</b>	\$	25.1
Additions for tax positions related to prior years		0.1
Reductions for tax positions related to prior years		—
Reductions due to tax settlements		—
Reductions due to tax statute of limitations		—
<b>Balance at December 31, 2016</b>	\$	25.2

### **13. Employee Defined Contribution Plans and Multi-Employer Pension Plans**

We have a retirement savings plan (the “Plan”) for all of our domestic subsidiaries under section 401(k) of the Internal Revenue Code that covers all U.S. salaried and most hourly employees. Participants may elect to defer a percentage of their compensation to the Plan, subject to aggregate limits required by the Internal Revenue Code. The Plan provides for discretionary matching contributions under certain circumstances, for employees based on location, pay status and membership in a collective bargaining unit. In addition, we provide a retirement contribution to certain employees based on location and age. We contributed \$8.5 million, \$7.9 million and \$8.1 million to the Plan in 2016, 2015 and 2014, respectively, which is recorded as compensation expense in the year incurred.

Bargaining unit employees in East Alton, IL and Alliance, OH participate in the IAM Plan. The IAM Plan is a multi-employer pension plan with negotiated fixed company costs per employee hour worked. The risks of participating in these multi-employer plans are different from single-employer plans, as we can be subject to additional risks if other employers do not meet their obligations. In addition, if a participating employer becomes insolvent and ceases to contribute to a multiemployer plan, the unfunded obligation of the plan will be borne by the remaining participating employers. Under current law, an employer that withdraws or partially withdraws from a multi-employer pension plan may incur withdrawal liability to the plan. Given that the IAM Plan is over funded, many other participating employers are much larger than us and there are a large number of participating employers in the plan, we do not view this to be a significant risk.

We recorded expense for contributions to the IAM Plan of \$3.5 million, \$3.8 million and \$3.7 million in 2016, 2015 and 2014, respectively, which are included in cost of sales in the accompanying consolidated statements of operations. Our participation in the IAM Plan for the annual period ended December 31, 2016, is outlined in the table below. There have been no significant changes that affect the comparability of 2016 and 2015 contributions. The IAM Plan’s year-end is December 31 and the plan reported \$395.1 million and \$382.2 million in employers’ contributions for 2015 and 2014, respectively.

Pension Fund	IAM National Pension Fund
EIN/ Pension Plan Number	51-6031295 / 002
Pension Protection Act Zone Status (2016 and 2015)*	Green Zone
FIP/RP Status Pending/Implemented	No
Company Contributions (FY 2016)	\$3.5 million
Company Contributions (FY 2015)	\$3.9 million
Surcharge Imposed	No
Expiration Date of Collective-Bargaining Agreement	November 5, 2017

\* Plans in the green zone are at least 80 percent funded.

As of the date of this filing, Forms 5500 were not available for the plan year ended in 2016.

#### 14. Derivative Contracts

We maintain a metal, energy and utility pricing risk-management strategy that uses commodity derivative contracts to minimize significant, unanticipated gains or losses that may arise from volatility of the commodity indices.

We are also exposed to credit risk and market risk. Credit risk is the risk that the counterparty might fail to fulfill its performance obligations under the terms of the derivative contract. Market risk is the risk that the value of a derivative instrument might be adversely affected by a change in commodity price. We manage the market risk associated with derivative contracts by establishing and monitoring parameters that limit the types and degree of market risk that may be undertaken.

We manage credit risk associated with derivative contracts by executing derivative instruments with counterparties that we believe are credit-worthy. The amount of such credit risk is limited to the fair value of the derivative contract plus the unpaid portion of amounts due to the Company pursuant to terms of the derivative contracts, if any. If the credit-worthiness of these counterparties deteriorates, we believe the exposure is mitigated by provisions in the derivative arrangements which allow for the legal right of offset of amounts due to the Company from the counterparties, if any, with any amounts payable to the counterparties.

The following tables provide a summary of our outstanding commodity derivative contracts:

	As of December 31,	
	2016	2015
	Net Notional Amount	
<i>(in millions)</i>		
Metal	\$ 6.7	\$ 18.2
Energy and utilities	1.2	4.3
Total	\$ 7.9	\$ 22.5

	As of December 31,	
	2016	2015
	Net Notional Amount	
<i>(in millions)</i>		
Notional amount - long	\$ 24.4	\$ 28.5
Notional amount - (short)	(16.5)	(6.0)
Net long / (short)	\$ 7.9	\$ 22.5

**Global Brass and Copper Holdings, Inc.**  
**Notes to Consolidated Financial Statements**

The fair values of derivative contracts in the accompanying consolidated balance sheets include the impact of netting derivative assets and liabilities when a legally enforceable master netting arrangement exists. The following tables summarize the gross amounts of open derivative contracts, the net amounts presented in the consolidated balance sheets, and the collateral deposited with counterparties:

As of December 31, 2016			
<i>(in millions)</i>	Gross Amounts of Recognized Assets	Gross Amounts Offset in Consolidated Balance Sheet	Net Amounts of Assets Presented in Consolidated Balance Sheet
Metal	\$ 3.6	\$ (1.4)	\$ 2.2
Energy and utilities	0.2	—	0.2
Collateral on deposit	0.4	—	0.4
Total	<u>\$ 4.2</u>	<u>\$ (1.4)</u>	<u>\$ 2.8</u>
Consolidated balance sheet location:			
Prepaid expenses and other current assets			\$ 2.8

As of December 31, 2016			
<i>(in millions)</i>	Gross Amounts of Recognized Liabilities	Gross Amounts Offset in Consolidated Balance Sheet	Net Amounts of Liabilities Presented in Consolidated Balance Sheet
Metal	\$ 1.4	\$ (1.4)	\$ —
Energy and utilities	—	—	—
Total	<u>\$ 1.4</u>	<u>\$ (1.4)</u>	<u>\$ —</u>

**Global Brass and Copper Holdings, Inc.**  
**Notes to Consolidated Financial Statements**

	As of December 31, 2015		
	Gross Amounts of Recognized Assets	Gross Amounts Offset in Consolidated Balance Sheet	Net Amounts of Assets Presented in Consolidated Balance Sheet
<i>(in millions)</i>			
Metal	\$ 0.6	\$ (0.6)	\$ —
Energy and utilities	0.1	(0.1)	—
Collateral on deposit	3.2	(1.4)	1.8
Total	<u>\$ 3.9</u>	<u>\$ (2.1)</u>	<u>\$ 1.8</u>
Consolidated balance sheet location:			
Prepaid expenses and other current assets			\$ 1.8

	As of December 31, 2015		
	Gross Amounts of Recognized Liabilities	Gross Amounts Offset in Consolidated Balance Sheet	Net Amounts of Liabilities Presented in Consolidated Balance Sheet
<i>(in millions)</i>			
Metal	\$ 1.7	\$ (1.7)	\$ —
Energy and utilities	0.4	(0.4)	—
Total	<u>\$ 2.1</u>	<u>\$ (2.1)</u>	<u>\$ —</u>

The following table summarizes the effects of derivative contracts in the accompanying consolidated statements of operations:

	Year Ended December 31,		
	2016	2015	2014
<i>(in millions)</i>			
<b>Losses (gains) in cost of sales for:</b>			
Metal	\$ (3.6)	\$ 2.3	\$ (0.4)
Energy and utilities	(0.1)	1.0	—
Total	<u>\$ (3.7)</u>	<u>\$ 3.3</u>	<u>\$ (0.4)</u>

**15. Fair Value Measurements**

ASC 820 specifies a fair value framework and hierarchy based upon the observability of inputs used in valuation techniques. In accordance with this guidance, fair value measurements are classified under the following hierarchy:

- **Level 1** - Quoted prices for identical instruments in active markets.
- **Level 2** - Quoted prices for similar instruments in active markets; quoted prices for identical or similar instruments in markets that are not active and model-derived valuations in which all significant inputs or significant value-drivers are observable in active markets.
- **Level 3** - Model-derived valuations in which one or more significant inputs or significant value-drivers are unobservable.

As of December 31, 2016 and December 31, 2015 the fair value of our commodity derivative contracts was \$2.8 million and \$1.8 million, respectively. In accordance with ASC 820, our metal, energy and utility commodity derivative contracts are considered Level 2, as fair value measurements consist of both quoted price inputs and inputs provided by a third party that are derived principally from or corroborated by observable market data by correlation. These assumptions include, but are not limited to, those concerning interest rates, credit rates, discount rates, default rates and other factors. All of our derivative commodity contracts have a set term of 24 months or less.

We do not hold assets or liabilities requiring a Level 3 measurement and there have not been any transfers between the hierarchy levels during 2016 or 2015.

For purposes of financial reporting, we have determined that the carrying value of cash, accounts receivable, accounts payable, and accrued expenses approximates fair value due to their short term nature. Additionally, given the revolving nature and the variable interest rates, we have determined that the carrying value of the 2016 ABL Facility also approximates fair value. As of December 31, 2016, the fair value of our Term Loan B Facility approximated \$325.6 million compared to a carrying value of \$319.2 million. As of December 31, 2015, the fair value of our Senior Secured Notes approximated \$365.2 million compared to a carrying value of \$345.3 million. The fair values of the Term Loan B Facility and the Senior Secured Notes were based upon quotes from financial institutions (Level 2 in the fair value hierarchy as defined by ASC 820). In July 2016, we redeemed all of our outstanding Senior Secured Notes (see Note 11, "Financing").

## **16. Commitments and Contingencies**

### **Environmental Considerations**

We are subject to a variety of environmental laws and regulations governing discharges to air and water, the handling, storage and disposal of hazardous or solid waste materials and the remediation of contamination associated with releases of hazardous substances. Although we believe we are in material compliance with all of the various regulations applicable to our business, there can be no assurance that requirements will not change in the future or that we will not incur significant costs to comply with such requirements. We employ responsible personnel at each facility, along with various environmental engineering consultants from time to time to assist with ongoing management of environmental, health and safety requirements. We expense environmental costs related to existing conditions resulting from past or current operations and from which no current or future benefit is discernible. Expenditures that extend the life of the related property are capitalized. We determine our liability on a location by location basis and record a liability at the time it is deemed probable and can be reasonably estimated. We are currently not aware of any environmental matters which may have a material impact on our financial position, results of operations, or liquidity.

On November 19, 2007 (the date of inception of GBC), we acquired the assets and operations relating to the worldwide metals business of Olin Corporation. Olin Corporation agreed to retain liability arising out of the existing conditions on certain of our properties for any remedial actions required by environmental laws, and agreed to indemnify the Company for all or part of a number of other environmental liabilities. Since 2007, Olin Corporation has been performing remedial actions at the facilities in East Alton, Illinois and Waterbury, Connecticut related to environmental conditions at such facilities, and has been participating in remedial actions at certain other properties as well. If Olin Corporation were to stop its environmental remedial activities at our properties, we could be required to assume responsibility for these activities, the cost of which could be material.

### **Insurance Recoveries**

In May 2016, the East Alton facility of our Olin Brass segment temporarily reduced production due to an equipment failure impacting an intermediate segment of the production process. The disruption resulted in a temporary reduction in customer shipments and in Olin Brass securing support from other strip industry participants.

The equipment remained out of service for several weeks and resumed production in early June 2016. We are insured for property and business interruption losses related to these events subject to a deductible of up to \$2.5 million per incident. We have filed a claim with our insurance carrier to recover these losses; however, we have not yet received any proceeds related to such claim and no amounts related to such proceeds, if any, have been recorded in our financial statements.

### **Legal Considerations**

We are party to various legal proceedings arising in the ordinary course of business. We believe that none of our legal proceedings are individually material or that the aggregate exposure of all of our legal proceedings, including those that are probable and those that are only reasonably possible, is material to our financial condition, results of operations or cash flows.

**Operating Leases**

We have operating leases covering certain facilities and equipment under non-cancelable lease agreements.

As of December 31, 2016, future minimum lease payments under non-cancelable leases in effect are as follows:

<i>(in millions)</i>	<u>Payment</u>
2017	\$ 2.7
2018	2.2
2019	1.3
2020	0.8
2021	0.5
Thereafter	—
Total minimum lease payments	<u>\$ 7.5</u>

Rental expense under all operating leases was approximately \$3.2 million, \$3.1 million and \$3.2 million in 2016, 2015 and 2014, respectively, and is recorded in the accompanying consolidated statements of operations as cost of sales or selling, general and administrative costs depending on the nature and use of the underlying asset being leased.

**17. Share-based Compensation**

The Global Brass and Copper Holdings, Inc. 2013 Omnibus Equity Incentive Plan (“2013 Plan”) was adopted by the Board of Directors and approved by shareholders on April 10, 2013, and further amended and restated effective May 26, 2016. The 2013 Plan provides for an aggregate of 3,361,053 shares of Global Brass and Copper Holdings, Inc.’s common stock to be available for awards in the form of options, restricted stock, restricted stock units, performance-based shares and other equity-based awards. Pursuant to the 2013 Plan, in 2016, 2015 and 2014, we granted non-qualified options, restricted stock and performance-based shares to certain employees and members of our management and our Board of Directors. At December 31, 2016, 1,807,214 shares were available for future grant.

We will satisfy the requirement for common stock for share-based payments by issuing shares out of authorized but unissued common stock or treasury stock.

**Stock Options**

Options are granted to certain employees and the exercise prices of stock options are equal to no less than the fair market value of common stock on the date of the grant. Stock options will generally vest in three equal installments on the anniversary of the date of grant and have a maximum term of 10 years. We use the straight-line attribution method to recognize expense for all stock options. Stock options are generally subject to immediate forfeiture if employment terminates prior to vesting, except under certain conditions, in which case the options expire no more than 90 days after the date of such termination. The fair value of each option grant is estimated on the date of grant using the Black-Scholes option-pricing model and the following weighted-average inputs for the option pricing model:

	<u>2016</u>	<u>2015</u>	<u>2014</u>
Expected volatility	41%	48%	53%
Risk-free interest rate	1.6%	1.7%	2.2%
Dividend yield	0.6%	1.1%	0.9%
Expected term	6.0 years	6.0 years	6.0 years

Because we have only been a public company since May 2013, there is limited historical data on the volatility of our common stock. As a result, the expected volatility of the 2016, 2015 and 2014 option grants was estimated based on the average volatility of the common stock of a group of our publicly traded peers.

The risk-free interest rate assumption in the Black-Scholes option-pricing model is based upon the U.S. Treasury Strips available with maturity period consistent with the expected term assumption. The dividend yield assumption is based on our expectation of dividend payouts.

Because we have only very limited historical information concerning stock option exercise behavior by our employees and such information is not readily available from a peer group of companies, we estimated the expected term using the “simplified” method permitted by Staff Accounting Bulletin Topic 14 issued by the SEC.

A summary of the stock option activity is summarized as follows:

	Shares	Weighted Average Exercise Price of Shares	Average Remaining Contractual Term (in years)	Aggregate Intrinsic Value (in millions)
Outstanding at December 31, 2013	107,895	\$ 11.27	9.4	\$ 0.6
Granted	143,685	16.06		
Exercised	(11,605)	11.00		
Forfeited or expired	—	—		
Outstanding at December 31, 2014	239,975	\$ 14.15	8.9	\$ 0.2
Granted	175,727	13.73		
Exercised	(16,970)	13.07		
Forfeited or expired	(24,047)	15.79		
Outstanding at December 31, 2015	374,685	\$ 13.90	8.5	\$ 2.8
Granted	140,740	26.99		
Exercised	(41,066)	12.92		
Forfeited or expired	—	—		
Outstanding at December 31, 2016	474,359	\$ 17.87	8.1	\$ 7.8
Options exercisable at December 31, 2016	178,723	\$ 13.74	7.2	\$ 3.7

The weighted-average grant date fair value of stock options granted during 2016, 2015 and 2014 was \$10.53, \$5.84 and \$7.64, respectively. The total intrinsic value of stock options exercised in 2016, 2015 and 2014 was \$0.7 million, \$0.1 million and \$0.1 million, respectively.

As of December 31, 2016, we had \$1.1 million of total unrecognized compensation expense related to stock option grants that will be recognized over the weighted average period of 1.7 years.

### **Restricted Stock**

Restricted stock is granted to certain employees and non-employee directors and the cost of these awards is determined using the market price of our common stock on the date of grant. Restricted stock shares granted represent newly issued shares and have the same cash dividend and voting rights as other common stock and are considered to be currently issued and outstanding. Restricted stock awards granted to employees vest over periods ranging from one to three years after the grant date, and awards granted to non-employee directors generally vest from 218 days to one year following the grant date. Management uses the straight-line attribution method to recognize expense for all restricted stock awards. The awards are generally subject to forfeiture if employment terminates prior to vesting, except under certain conditions. The cash dividends on restricted stock shares are forfeitable, and payments of cash dividends on restricted stock shares are withheld until the shares vest. Compensation is recognized over the period during which the employees and non-employee directors provide the requisite service to the Company.

A summary of restricted stock activity under the 2013 Plan is presented below:

	Shares	Weighted Average Grant Date Fair Value
Nonvested restricted stock - December 31, 2013	130,548	\$ 11.37
Granted	104,563	15.66
Vested	(106,010)	11.43
Forfeited	(7,952)	14.30
Nonvested restricted stock - December 31, 2014	121,149	\$ 14.83
Granted	171,919	14.32
Vested	(84,430)	14.47
Forfeited	(5,380)	15.59
Nonvested restricted stock - December 31, 2015	203,258	\$ 14.53
Granted	119,601	27.00
Vested	(118,097)	16.05
Forfeited	(7,438)	17.59
Nonvested restricted stock - December 31, 2016	197,324	\$ 21.06

The total fair value of restricted stock that vested during 2016, 2015 and 2014 was \$2.9 million, \$1.5 million and \$1.7 million, respectively.

At December 31, 2016, total unrecognized compensation cost related to nonvested restricted stock was \$2.5 million and is expected to be recognized over a weighted average period of 1.7 years.

### Performance Shares

Performance share awards are granted to certain employees and provide for the issuance of common stock if specified Company performance targets and market conditions are achieved. The number of common shares issued is dependent upon vesting and actual performance of the Company relative to the established targets.

The fair value of performance share awards granted is determined based on the market price of our common stock on the date of grant. Additionally, the awards granted in 2016 and 2015 include a market condition that must also be achieved in order to earn more than the performance shares granted; therefore, the fair value of any shares earned in excess of 100% was determined on the date of grant using a Monte Carlo simulation model. Specific to the estimated 2016 and 2015 performance shares earned in excess of 100%, the fair value and weighted-average inputs used were as follows:

	2016	2015
Grant date fair value	\$ 20.05	\$ 5.54
Expected volatility	30%	29%
Risk-free interest rate	0.9%	0.6%
Dividend yield	—%	—%

The amount of compensation expense recognized for performance shares reflects our assessment of the probability that performance targets will be achieved. All of the performance shares granted in 2016 will vest in two equal installments on the second and third anniversaries of the grant date. One of the two tranches of the performance shares granted in 2015 will vest in two equal installments on the second and third anniversaries of the grant date, while the other will vest in one installment on the second anniversary of the grant date. For performance shares granted in 2014, the number of performance shares earned generally vest in three equal installments on the anniversary date of the grant. Performance shares that have not vested are generally subject to forfeiture if employment terminates, except under certain conditions. Cash dividends accrue on performance shares once the performance conditions have been met, but the dividends are forfeitable if the performance shares do not vest. We recognize compensation expense related to performance share grants using the graded-vesting method over the vesting periods.

A summary of the performance share award activity is summarized as follows:

	Shares	Weighted-Average Grant-Date Fair Value
Nonvested performance shares - December 31, 2013	18,166	\$ 11.31
Granted (a)	257,067	16.06
Vested	(6,059)	11.31
Unearned or forfeited (b)	(257,067)	16.06
Nonvested performance shares - December 31, 2014	12,107	\$ 11.31
Granted (a)	217,560	13.74
Vested	(6,139)	11.31
Unearned or forfeited	(4,688)	13.63
Nonvested performance shares - December 31, 2015	218,840	\$ 13.67
Granted (a)	146,916	26.97
Earned (c)	205,833	5.54
Vested	(5,104)	11.00
Unearned or forfeited	(10,072)	16.58
Nonvested performance shares - December 31, 2016	556,413	\$ 14.15

(a) Reflected at target levels.

(b) Includes shares granted in 2014 that were not earned based on performance provisions of the award grants.

(c) Includes shares earned in excess of target from prior year grant.

The total fair value of performance shares that vested during 2016, 2015 and 2014 was \$0.1 million, \$0.1 million and \$0.1 million, respectively.

At December 31, 2016, total unrecognized compensation cost related to the performance share awards granted of approximately \$4.5 million is expected to be recognized over a weighted average period of 1.4 years.

### Share-Based Compensation Expense

The following table summarizes share-based compensation expense, reported as a component of selling, general, and administrative expense, related to our stock options, restricted stock and performance share awards:

<i>(in millions)</i>	Year Ended December 31,		
	2016	2015	2014
Stock options	\$ 1.3	\$ 0.9	\$ 0.5
Restricted stock	2.4	1.7	1.1
Performance shares	3.2	1.6	0.1
Total pre-tax share-based compensation expense	\$ 6.9	\$ 4.2	\$ 1.7
Net tax benefit related to share-based compensation expense	\$ 2.6	\$ 1.6	\$ 0.7

Tax benefits realized from the exercise of stock options and the vesting of restricted stock and performance shares were \$1.6 million, \$0.5 million and \$0.6 million in 2016, 2015 and 2014, respectively.

**18. Quarterly Financial Information (Unaudited)**

	2016			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
<i>(in millions, except per share data)</i>				
Net sales	\$ 328.9	\$ 337.9	\$ 349.1	\$ 322.6
Gross profit	49.5 (a)	41.3 (a)	52.2 (a)	38.6 (a)
Income before provision for income taxes	18.9 (b)	13.2 (b)	4.8 (b)	12.5
Net income	12.2	8.6	4.1	7.9
Net income attributable to Global Brass and Copper Holdings, Inc.	12.2	8.4	3.9	7.7
Net income attributable to Global Brass and Copper Holdings, Inc. per common share:				
Basic	0.57	0.39	0.18	0.36
Diluted	0.57	0.39	0.18	0.35
	2015			
	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
<i>(in millions, except per share data)</i>				
Net sales	\$ 400.2	\$ 414.9	\$ 367.7	\$ 323.4
Gross profit	43.9 (c)	50.3 (c)	42.6	33.5 (c)
Income before provision for income taxes and equity income	12.4	25.0 (d)	10.3 (e)	3.7 (e)
Net income	8.1	17.2	7.0	3.5
Net income attributable to Global Brass and Copper Holdings, Inc.	8.1	17.1	6.9	3.5
Net income attributable to Global Brass and Copper Holdings, Inc. per common share:				
Basic	0.38	0.80	0.32	0.16
Diluted	0.38	0.80	0.32	0.16

- (a) Includes lower of cost or market adjustments for certain domestic, non-copper metal inventory, which decreased gross profit by \$0.3 million and \$0.4 million in the first and fourth quarters, respectively, and increased gross profit by \$0.2 million and \$2.2 million, in the second and third quarters, respectively. Includes \$1.9 million loss from liquidation of LIFO inventory layers in the fourth quarter.
- (b) Includes \$2.9 million, \$0.4 million and \$20.1 million loss from extinguishment of debt in the first, second and third quarters, respectively.
- (c) Includes lower of cost or market adjustments for certain domestic, non-copper metal inventory, which decreased gross profit by \$1.9 million, \$0.6 million, \$2.3 million and \$1.8 million in the first, second, third and fourth quarters, respectively. Includes \$0.1 million loss from liquidation of LIFO inventory layers in the fourth quarter.
- (d) Includes \$6.3 million gain on the sale of the investment in our joint venture in the second quarter.
- (e) Includes \$2.3 million and \$0.8 million loss from extinguishment of debt in the third and fourth quarters, respectively.

Basic and diluted EPS are computed independently for each of the periods presented. Accordingly, the sum of the quarterly EPS amounts may not equal the total for the year.

## **Item 9. Changes in and Disagreements With Accountants on Accounting and Financial Disclosure.**

None.

## **Item 9A. Controls and Procedures**

### **Evaluation of Disclosure Controls and Procedures**

Management of a reporting company, with the participation of the principal executive officer and principal financial officer, must periodically evaluate the Company's "disclosure controls and procedures" as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended ("Exchange Act"). Disclosure controls and procedures are defined as controls and other procedures of a reporting company that are designed to ensure that information required to be disclosed by the reporting company in its reports filed or submitted to the SEC under the Exchange Act (such as this Form 10-K) is (i) recorded, processed, summarized, and reported in the time periods specified in the SEC's rules and forms, and (ii) accumulated and communicated to management, including its principal executive officer and principal financial officer, as appropriate, to allow timely decisions regarding required disclosures.

The Company's management, with the participation of the Chief Executive Officer and the Chief Financial Officer, carried out an evaluation of the effectiveness of the design and operation of the Company's disclosure controls and procedures as of December 31, 2016. Management recognizes that any controls and procedures, no matter how well designed and operated, can provide only reasonable assurance of achieving their objectives and management necessarily applies its judgment in evaluating the cost benefit relationship of possible controls and procedures. Based on this evaluation, our Chief Executive Officer and Chief Financial Officer concluded that, as of December 31, 2016, the design and operation of our disclosure controls and procedures were effective to provide reasonable assurance that the desired control objectives were achieved.

### **Management's Annual Report on Internal Control Over Financial Reporting**

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rules 13a-15(f) and 15d-15(f). Our internal control over financial reporting is designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. Management assessed the design and effectiveness of the Company's internal control over financial reporting as of December 31, 2016. In making this assessment, management used the criteria set forth by the Committee of Sponsoring Organizations of the Treadway Commission ("COSO") in Internal Control—Integrated Framework (2013 framework). Based on this evaluation, management concluded that our internal control over financial reporting was effective as of December 31, 2016 based on criteria in Internal Control—Integrated Framework issued by the COSO. The effectiveness of our internal control over financial reporting as of December 31, 2016 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears under Item 8 of this Annual Report on Form 10-K.

### **Changes in internal controls**

Olin Brass and A.J. Oster are in the process of implementing fully integrated Enterprise Resource Planning ("ERP") systems to replace their current management information systems and plan to implement the systems in a phased approach over the course of the next several years, and implemented the first phase in early fiscal 2017. The implementation of an ERP system will likely affect the processes that constitute our internal controls over financial reporting and will require testing for effectiveness as the implementation progresses. There have been no changes in our internal control over financial reporting (as such term is defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) during the quarter ended December 31, 2016 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

## **Item 9B. Other Information.**

None.

## PART III

### **Item 10. Directors, Executive Officers and Corporate Governance.**

#### *Management*

Information regarding our management and directors, included under the heading “Directors, Executive Officers and Corporate Governance,” is incorporated by reference herein from our 2017 proxy statement to be filed with the SEC not later than 120 days after the end of our fiscal year ended December 31, 2016.

#### *Audit Committee*

Information with respect to the Audit Committee and Audit Committee financial experts, included under the heading “Audit Committee” in the Proxy Statement, is incorporated by reference herein from our 2017 proxy statement to be filed with the SEC not later than 120 days after the end of our fiscal year ended December 31, 2016.

#### *Section 16(a) Beneficial Ownership Reporting Compliance*

Information regarding Section 16(a) compliance, included under the heading “Section 16(a) Beneficial Ownership Reporting Compliance” in the Proxy Statement, is incorporated by reference herein from our 2017 proxy statement to be filed with the SEC not later than 120 days after the end of our fiscal year ended December 31, 2016.

#### *Codes of Conduct*

The Board has adopted a Code of Business Conduct and Ethics, which applies to all employees, including our executive officers (which includes our Principal Executive Officer, our Principal Financial Officer and our Principal Accounting Officer). Our Code of Business Conduct and Ethics can be found on our website at <http://www.gbcholdings.com>. We will post any amendment to or waiver from the provisions of the Code of Business Conduct and Ethics that applies to the executive officers above on the same website and will provide it to shareholders free of charge upon written request by contacting Global Brass and Copper Holdings, Inc. at 475 N. Martingale Road, Suite 1050, Schaumburg, IL 60173, Attention: Investor Relations.

### **Item 11. Executive Compensation.**

Information with respect to compensation of our executive officers and directors, included under the headings “Compensation Discussion and Analysis,” “Executive Compensation,” “Compensation Committee Interlocks and Insider Participation” and “Compensation Committee Report” in the Proxy Statement, is incorporated by reference herein from our 2017 proxy statement to be filed with the SEC not later than 120 days after the end of our fiscal year ended December 31, 2016.

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

Information with respect to security ownership of certain beneficial owners and management, included under the heading “Security Ownership of Certain Beneficial Owners, Directors and Management” in the Proxy Statement, is incorporated by reference herein from our 2017 proxy statement to be filed with the SEC not later than 120 days after the end of our fiscal year ended December 31, 2016. Information with respect to securities authorized for issuance under equity compensation plans, included under the heading “Equity Compensation Plan Information Table” in the Proxy Statement, is incorporated by reference herein from our 2017 proxy statement to be filed with the SEC not later than 120 days after the end of our fiscal year ended December 31, 2016.

### **Item 13. Certain Relationships and Related Transactions, and Director Independence.**

Information regarding certain relationships and related transactions, and director independence, included under the heading, “Certain Relationships and Related Party Transactions” in the Proxy Statement, is incorporated by reference herein from our 2017 proxy statement to be filed with the SEC not later than 120 days after the end of our fiscal year ended December 31, 2016.

### **Item 14. Principal Accounting Fees and Services.**

Information with respect to principal accounting fees and services, included under the heading “Fees of Independent Accountants” in the Proxy Statement, is incorporated by reference herein from our 2017 proxy statement to be filed with the SEC not later than 120 days after the end of our fiscal year ended December 31, 2016.

## PART IV

### Item 15. Exhibits, Financial Statement Schedules.

(a) The following documents are filed as part of this Annual Report on Form 10-K:

1. Financial Statements: the report of independent registered public accounting firm, financial statements and notes are contained in Item 8 of this Annual Report.
2. Financial statement schedules are omitted because they are not applicable or the required information is presented in the financial statements or related notes.

### 3. Exhibits

<u>Exhibit Number</u>	<u>Description</u>
2.1*	Purchase Agreement, between Global Brass and Copper Acquisition Co. and Olin Corporation, dated as of October 15, 2007.
3.1****	Amended and Restated Certificate of Incorporation of Global Brass and Copper Holdings, Inc.
3.2*****	Amended and Restated Bylaws of Global Brass and Copper Holdings, Inc.
4.1****	Form of Certificate of Common Stock of Global Brass and Copper Holdings, Inc.
10.1*****	Global Brass and Copper Holdings, Inc. 2013 Omnibus Equity Incentive Plan, as amended and restated May 26, 2016.
10.2**	Severance Agreement, by and between John J. Wasz and Global Brass and Copper, Inc., dated August 31, 2011.
10.3*****	Employment Agreement between Global Brass and Copper, Inc. and John J. Wasz, dated May 8, 2014.
10.4*****	Severance Agreement, by and between Robert T. Micchelli and Global Brass and Copper, Inc., dated March 17, 2014.
10.5*****	Severance Agreement, by and among Christopher J. Kodosky, Global Brass and Copper Holdings, Inc., and Global Brass and Copper, Inc., dated July 11, 2016
10.6*	Severance Agreement, by and between Devin K. Denner and Global Brass and Copper, Inc., dated July 29, 2011.
10.7**	Amendment No. 1 to Severance Agreement, by and between Devin K. Denner and Global Brass and Copper, Inc., dated February 9, 2012.
10.8*****	Severance Agreement, by and between Scott B. Hamilton and Global Brass and Copper, Inc., dated October 10, 2011.
10.9*****	Severance Agreement, by and between Kevin W. Bense and Global Brass and Copper, Inc., dated September 20, 2013.
10.10*****	Severance Agreement, by and between William G. Toler and Global Brass and Copper, Inc., dated September 9, 2013.
10.11***	ABL Credit Agreement, dated as of July 18, 2016, among the Company, Global Brass and Copper, Inc., as Borrower, the loan guarantors party thereto, the lenders party thereto, Bank of America, N.A. and Wells Fargo Bank, National Association, as Co-Syndication Agents, and JPMorgan Chase Bank, N.A., as Administrative Agent.

<u>Exhibit Number</u>	<u>Description</u>
10.12***	Term Loan B Credit Agreement, dated as of July 18, 2016, among the Company, Global Brass and Copper, Inc., as Borrower, the loan guarantors party thereto, the lenders party thereto, Bank of America, N.A. Wells Fargo Bank, National Association, and Deutsche Bank Securities Inc., as Co-Syndication Agents, Branch Banking and Trust Company, Keybank National Association and William Blair & Company, L.L.C. as Co-Documentation Agents, and JPMorgan Chase Bank, N.A., as Administrative Agent.
10.13	Intercreditor Agreement, dated as of July 18, 2016, by and among JPMorgan Chase Bank, N.A., as Administrative Agent for the ABL Secured Parties (as defined below), JPMorgan Chase Bank, N.A., as Administrative Agent for the Term Loan Secured Parties and each of the Loan Parties party thereto.
10.14	Term Loan Pledge and Security Agreement, dated as of July 18, 2016, by and among Global Brass and Copper, Inc., as Borrower, each grantor party thereto and JPMorgan Chase Bank, N.A., as administrative agent.
10.15	ABL Pledge and Security Agreement, dated as of July 18, 2016, by and among Global Brass and Copper, Inc., as Borrower, each grantor party thereto and JPMorgan Chase Bank, N.A., as administrative agent.
10.16*	Indenture of Lease, between The Lares Group II and A.J. Oster Company, dated March 1, 1995, as amended.
10.17	Fourth Amendment to Lease between The Lares Group II and A.J. Oster Company, dated March 1, 2014.
10.18*	Single Tenant Lease, between La Palma Flex, L.P. and A.J. Oster West LLC, dated February 1, 2009.
10.19	First Amendment to Single Tenant Lease, between La Palma Flex, L.P. and A.J. Oster West LLC, dated December 10, 2013.
10.20****	Form of Indemnity Agreement.
10.21*****	Investor Rights Agreement, dated as of May 29, 2013, by and between Global Brass and Copper Holdings, Inc. and Halkos Holdings, LLC.
^10.22*****	Form of Performance Share Award Agreement under the Global Brass and Copper Holdings, Inc. 2013 Omnibus Equity Incentive Plan
^10.23*****	Form of Performance Share Award Agreement under the Global Brass and Copper Holdings, Inc. 2013 Omnibus Equity Incentive Plan, as amended
^10.24*****	Form of Nonqualified Option Award Agreement under the Global Brass and Copper Holdings, Inc. 2013 Omnibus Equity Incentive Plan
^10.25*****	Form of Employee Restricted Stock Award Agreement under the Global Brass and Copper Holdings, Inc. 2013 Omnibus Equity Incentive Plan
^10.26*****	Form of Director Restricted Stock Award Agreement under the Global Brass and Copper Holdings, Inc. 2013 Omnibus Equity Incentive Plan
21.1	List of Subsidiaries of Global Brass and Copper Holdings, Inc.
23.1	Consent of PricewaterhouseCoopers LLP.
31.1	Certification of Chief Executive Officer under Section 302 of the Sarbanes-Oxley Act of 2002.
31.2	Certification of Chief Financial Officer under Section 302 of the Sarbanes-Oxley Act of 2002.
32.1†	Certification of Chief Executive Officer and Chief Financial Officer under Section 906 of the Sarbanes-Oxley Act of 2002.
101.INS	XBRL Instance Document.
101.SCH	XBRL Taxonomy Extension Schema.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase.

<u>Exhibit Number</u>	<u>Description</u>
101.DEF	XBRL Taxonomy Extension Definition Linkbase.
101.LAB	XBRL Taxonomy Extension Label Linkbase.
101.PRE	XBRL Taxonomy Extension Presentation Linkbase.
*	Filed with Amendment No. 1 to Form S-1 (No. 333-177594) of Global Brass and Copper Holdings, Inc. on January 6, 2012 and incorporated by reference herein.
**	Filed with Amendment No. 2 to Form S-1 (No. 333-177594) of Global Brass and Copper Holdings, Inc. on February 10, 2012 and incorporated by reference herein.
***	Filed on Form 8-K of Global Brass and Copper Holdings, Inc. on July 22, 2016 and incorporated by reference herein.
****	Filed with Amendment No. 6 to Form S-1 (No. 333-177594) of Global Brass and Copper Holdings, Inc. on May 8, 2013 and incorporated by reference herein.
*****	Filed on Form 8-K of Global Brass and Copper Holdings, Inc. on May 29, 2013 and incorporated by reference herein.
*****	Filed on Form 8-K of Global Brass and Copper Holdings, Inc. on May 14, 2014 and incorporated by reference herein.
*****	Filed on Form 8-K of Global Brass and Copper Holdings, Inc. on March 19, 2014 and incorporated by reference herein.
*****	Filed on Form 10-K of Global Brass and Copper Holdings, Inc. on March 19, 2014 and incorporated by reference herein.
*****	Filed on Form 8-K of Global Brass and Copper Holdings, Inc. on March 10, 2015 and incorporated by reference herein.
*****	Filed on Form 10-K of Global Brass and Copper Holdings, Inc. on March 16, 2015 and incorporated by reference herein.
*****	Filed on Form 10-Q of Global Brass and Copper Holdings, Inc. on August 5, 2016 and incorporated by reference herein.
*****	Incorporated by reference to Appendix A to the Definitive Proxy Statement on Schedule 14A of Global Brass and Copper Holdings, Inc. for its 2016 Annual Meeting of Stockholders filed on April 8, 2016.
^	Compensatory plan or arrangement
†	This certification is deemed not filed for purposes of section 18 of the Securities Exchange Act of 1934, as amended (Exchange Act), or otherwise subject to the liability of that section, nor shall it be deemed incorporated by reference into any filing under the Securities Act of 1933, as amended (Securities Act) or the Exchange Act.

**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.

GLOBAL BRASS AND COPPER HOLDINGS, INC

By:           /s/ Christopher J. Kodosky            
Christopher J. Kodosky  
Chief Financial Officer

Date: March 7, 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 Global Brass and Copper Holdings, Inc. and in the capacities indicated on March 7, 2017.

Name	Position
<u>          /s/ John J. Wasz          </u> John J. Wasz	Chief Executive Officer and President (principal executive officer) and Director
<u>          /s/ Christopher J. Kodosky          </u> Christopher J. Kodosky	Chief Financial Officer (principal financial officer and principal accounting officer)
<u>          /s/ John H. Walker          </u> John H. Walker	Chairman of the Board
<u>          /s/ Vicki L. Avril          </u> Vicki L. Avril	Director
<u>          /s/ Donald L. Marsh          </u> Donald L. Marsh	Director
<u>          /s/ Bradford T. Ray          </u> Bradford T. Ray	Director
<u>          /s/ Martin E. Welch, III          </u> Martin E. Welch, III	Director
<u>          /s/ Ronald C. Whitaker          </u> Ronald C. Whitaker	Director

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**BOARD OF DIRECTORS**

**John H. Walker**

Chairman of the Board – Independent

**Vicki L. Avril**

Director – Independent

**Donald L. Marsh, Jr.**

Director – Independent

**Bradford T. Ray**

Director – Independent

**John J. Wasz**

Director and  
Chief Executive Officer

**Martin E. Welch, III**

Director – Independent

**Ronald C. Whitaker**

Lead Independent Director

**EXECUTIVE OFFICERS**

**John J. Wasz**

Chief Executive Officer, President  
and Chief Operating Officer

**Christopher J. Kodosky**

Chief Financial Officer

**Scott B. Hamilton**

General Counsel and Secretary

**Kevin W. Bense**

President – A.J. Oster, LLC

**Devin K. Denner**

President – Chase Brass, LLC

**Dale R. Taylor**

President – GBC Metals, LLC

**William G. Toler**

Executive Vice President – Strategic  
Planning and Development

**CORPORATE INFORMATION**

**Corporate Office**

475 N. Martingale Road, Suite 1050  
Schaumburg, IL 60173

**Independent Registered Public  
Accounting Firm**

PricewaterhouseCoopers LLP  
One North Wacker Dr.  
Chicago, IL 60606

**Investor Relations**

Security analysts, investment  
professionals and shareholders can  
find investor relations information  
online at [www.gbcholdings.com](http://www.gbcholdings.com)

**Inquiries should be directed to:**

Christopher Kodosky, CFO  
[Investor.relations@gbcmetals.com](mailto:Investor.relations@gbcmetals.com)

or

FTI Consulting  
Mark Barbalato, (212) 850-5707

**Corporate Stock Listing**

NYSE: BRSS

**Registrar and Transfer Agent**

American Stock Transfer & Trust  
Company, LLC  
6201 15<sup>th</sup> Avenue  
Brooklyn, NY 11219

**Annual Meeting**

The Annual Meeting of  
Stockholders will be held on May  
25, 2017, at 10:00 a.m. CT, at The  
Woodfield Corporate Center, 425  
N. Martingale Road, Suite 90,  
Schaumburg, IL 60173

