

UNITED STATES  
SECURITIES AND EXCHANGE COMMISSION

Washington, D.C. 20549

FORM 10-K

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

For the fiscal year ended December 31, 2016

Commission file number 1-6770



MUELLER INDUSTRIES, INC.

(Exact name of registrant as specified in its charter)

**Delaware**

(State or other jurisdiction  
of incorporation or organization)

**25-0790410**

(I.R.S. Employer  
Identification No.)

**8285 Tournament Drive, Suite 150**

**Memphis, Tennessee**

(Address of principal executive offices)

**38125**

(Zip Code)

Registrant's telephone number, including area code: (901) 753-3200

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

Title of each class

Name of each exchange on which registered

Common Stock, \$0.01 Par Value

New York Stock Exchange

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

Indicate by check mark whether 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 a 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 Website, 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 (Section 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   
Non-accelerated filer

Accelerated filer   
Smaller reporting company

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold, or the average bid and asked price of such common equity, as of the last business day of the Registrant's most recently completed second fiscal quarter was \$1,795,668,379.

The number of shares of the Registrant's common stock outstanding as of February 24, 2017 was 57,602,563 excluding 22,580,441 treasury shares.

**DOCUMENTS INCORPORATED BY REFERENCE**

Portions of the following document are incorporated by reference into this Report: Registrant's Definitive Proxy Statement for the 2017 Annual Meeting of Stockholders, scheduled to be mailed on or about March 30, 2017 (Part III).

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MUELLER INDUSTRIES, INC.

As used in this report, the terms "we," "us," "our," "Company," "Mueller," and "Registrant" mean Mueller Industries, Inc. and its consolidated subsidiaries taken as a whole, unless the context indicates otherwise.

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**PART I**

**ITEM 1. BUSINESS**

**Introduction**

Mueller Industries, Inc. (the Company) is a leading manufacturer of copper, brass, aluminum, and plastic products. The range of these products is broad: copper tube and fittings; line sets; brass and copper alloy rod, bar, and shapes; aluminum and brass forgings; aluminum impact extrusions; plastic fittings and valves; refrigeration valves and fittings; fabricated tubular products; and steel nipples. We also resell imported brass and plastic plumbing valves, malleable iron fittings, faucets, and plumbing specialty products. Our operations are located throughout the United States and in Canada, Mexico, Great Britain, South Korea, and China. The Company was incorporated in Delaware on October 3, 1990.

During the first quarter of 2016, we made changes to our management reporting structure as a result of a change in the way the Chief Executive Officer, who serves as the Chief Operating Decision Maker, manages and evaluates the business, makes key operating decisions, and allocates resources. Previously, we had two reportable segments: Plumbing & Refrigeration and OEM. During the first quarter, we realigned our operating segments into three reportable segments: Piping Systems, Industrial Metals, and Climate. The changes to the reporting structure resulted from management's decision to operationally separate certain businesses in order to enhance the level of focus on those businesses. This included the appointment of separate management teams. In addition, as a result of several acquisitions, we separated certain businesses with similar characteristics to create the Industrial Metals and Climate segments. These businesses were previously aggregated within the OEM segment. Management has recast certain prior year amounts to conform to the current year presentation. Each of the reportable segments is composed of certain operating segments that are aggregated primarily by the nature of products offered.

Certain administrative expenses and expenses related primarily to retiree benefits at inactive operations are combined into the Corporate and Eliminations classification.

Financial information concerning segments and geographic information appears under "Note 3 – Segment Information" in the Notes to Consolidated Financial Statements, which is incorporated herein by reference.

New housing starts and commercial construction are important determinants of the Company's sales to the heating, ventilation, and air-conditioning (HVAC), refrigeration, and plumbing markets because the principal end use of a significant portion of our products is in the construction of single and multi-family housing and commercial buildings. Repairs and remodeling projects are also important drivers of underlying demand for these products.

**Piping Systems Segment**

The Piping Systems segment is composed of Domestic Piping Systems Group, Canadian Operations, European Operations, Trading Group, Jiangsu Mueller-Xingrong Copper Industries Limited (Mueller-Xingrong), and Jungwoo Metal Ind. Co., LTD (Jungwoo-Mueller).

The Domestic Piping Systems Group manufactures copper tube and fittings, plastic fittings, and line sets. These products are manufactured in the U.S., sold in the U.S., and exported to markets worldwide. Our copper tube ranges in sizes from 1/8 inch to 8 1/8 inch diameter and is sold in various straight lengths and coils. We are a market leader in the air-conditioning and refrigeration service tube markets and we also supply a variety of water tube in straight lengths and coils used for plumbing applications in virtually every type of construction project. Our copper and plastic fittings, line sets, and related components are produced for the plumbing and heating industry to be used in water distribution systems, heating systems, air-conditioning, and refrigeration applications, and drainage, waste, and vent systems.

Canadian Operations manufactures copper tube and line sets in Canada and sells the products primarily in the U.S. and Canada. European Operations manufactures copper tube in the United Kingdom, which is sold throughout Europe. The Trading Group manufactures steel pipe nipples and resells imported brass and plastic plumbing valves, malleable iron fittings, faucets, and plumbing specialty products to plumbing wholesalers, distributors to the manufactured housing and recreational vehicle industries, and building materials retailers in North America.

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Mueller-Xingrong, our Chinese joint venture, manufactures engineered copper tube primarily for air-conditioning applications; these products are sold primarily to OEMs located in China. Jungwoo-Mueller, our South Korean joint venture, manufactures copper-based joining products that are sold worldwide.

We acquired Howell Metal Company (Howell) on October 17, 2013, Yorkshire Copper Tube (Yorkshire) on February 28, 2014, Great Lakes Copper (Great Lakes) on July 31, 2015, and a 60 percent equity interest in Jungwoo-Mueller on April 26, 2016. Howell manufactures copper tube and line sets for U.S. distribution while Yorkshire produces European standard copper distribution tubes. Great Lakes manufactures copper tube and line sets for distribution in Canada and the U.S. These acquisitions complement our existing copper tube, line sets, and copper fittings businesses in the Piping Systems segment.

We disposed of Mueller Primaflow Limited (Primaflow), our U.K. based plumbing and heating systems import distribution business, on November 21, 2014. This business was part of European Operations in the Piping Systems segment.

The segment sells products to wholesalers in the plumbing and refrigeration markets, distributors to the manufactured housing and recreational vehicle industries, building material retailers, and air-conditioning OEMs. It markets primarily through its own sales and distribution organization, which maintains sales offices and distribution centers throughout the United States and in Canada, Mexico, Europe, China, and South Korea. Additionally, products are sold and marketed through a complement of agents, which, when combined with our sales organization, provide the Company broad geographic market representation.

The total amount of order backlog for the Piping Systems segment as of December 31, 2016 was not significant.

We compete with various companies, depending on the product line. In the U.S. copper tube business, domestic competition includes Cerro Flow Products LLC, Cambridge-Lee Industries LLC (a subsidiary of Industrias Unidas S.A. de C.V.), and Wieland Copper Products LLC, as well as many actual and potential foreign competitors. In the European copper tube business, we compete with several European-based manufacturers of copper tube as well as other foreign-based manufacturers. In the Canadian copper tube business, our competitors include foreign-based manufacturers. In the copper fittings market, our domestic competitors include Elkhart Products Company (a subsidiary of Aalberts Industries N.V.) and NIBCO, Inc. We also compete with several foreign manufacturers. Additionally, our copper tube and fittings businesses compete with a large number of manufacturers of substitute products made from other metals and plastic. The plastic fittings competitors include NIBCO, Inc., Charlotte Pipe & Foundry, and other companies.

**Industrial Metals Segment**

The Industrial Metals segment is composed of Brass Rod & Copper Bar Products, Impacts & Micro Gauge, and Brass Value-Added Products.

Brass Rod & Copper Bar Products manufactures a broad range of brass rod and copper alloy shapes, as well as a wide variety of end products including plumbing brass, valves, and fittings sold primarily to OEMs in the industrial, HVAC, plumbing, and refrigeration industries. We extrude brass, bronze, and copper alloy rod in sizes ranging from 3/8 inches to 4 inches in diameter. These alloys are used in applications that require a high degree of machinability, wear and corrosion resistance, as well as electrical conductivity.

Impacts & Micro Gauge manufactures cold-form aluminum and copper products for automotive, industrial, and recreational components, as well as high-volume machining of aluminum, steel, brass, and cast iron impacts and castings for automotive applications. It sells its products primarily to OEMs in the U.S., serving the automotive, military ordnance, aerospace, and general manufacturing industries. Typical applications for impacts are high strength ordnance, high-conductivity electrical components, builders' hardware, hydraulic systems, automotive parts, and other uses where toughness must be combined with varying complexities of design and finish.

Brass Value-Added Products manufactures brass and aluminum forgings; brass, aluminum, and stainless steel valves; fluid control solutions; and gas train assemblies. Our forgings are used in a wide variety of products, including automotive components, brass fittings, industrial machinery, valve bodies, gear blanks, and computer hardware. Our valves, fluid control systems, and gas train assemblies are used in the compressed gas, pharmaceutical, construction, and gas appliance markets.

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On June 18, 2015, we acquired Sherwood Valve Products, LLC (Sherwood), which manufactures valves and fluid control solutions for the HVAC, refrigeration, and compressed gas markets. The acquisition of Sherwood complements our existing brass businesses in the Industrial Metals segment.

The segment sells its products primarily to domestic OEMs in the industrial, construction, HVAC, plumbing, and refrigeration markets. The total amount of order backlog for the Industrial Metals segment as of December 31, 2016 was not significant.

Competitors, primarily in the brass rod market, include Chase Brass and Copper Company LLC, a subsidiary of Global Brass and Copper Holdings, Inc., and others, both domestic and foreign.

**Climate Segment**

The Climate segment is composed of Refrigeration Products, Fabricated Tube Products, Westermeyer Industries, Inc. (Westermeyer), and Turbotec Products, Inc. (Turbotec).

Refrigeration Products designs and manufactures valves, protection devices, and brass fittings for various OEMs in the commercial HVAC and refrigeration markets. Fabricated Tube Products manufactures tubular assemblies and fabrications for OEMs in the HVAC and refrigeration markets. Westermeyer designs, manufactures, and distributes high-pressure components and accessories for the air-conditioning and refrigeration markets. Turbotec manufactures coaxial heat exchangers and twisted tubes for the HVAC, geothermal, refrigeration, swimming pool heat pump, marine, ice machine, commercial boiler, and heat reclamation markets.

We acquired Westermeyer on August 16, 2012 and Turbotec on March 30, 2015. The acquisitions of Westermeyer and Turbotec complement our existing refrigeration business in the Climate segment.

The segment sells its products primarily to OEMs in the HVAC and refrigeration markets in the U.S. The total amount of order backlog for the Climate segment as of December 31, 2016 was not significant.

**Labor Relations**

At December 31, 2016, the Company employed approximately 4,244 employees, of which approximately 1,616 were represented by various unions. Those union contracts will expire as follows:

<u>Location</u>	<u>Expiration Date</u>
Port Huron, Michigan (Local 218 IAM)	May 5, 2019
Port Huron, Michigan (Local 44 UAW)	July 21, 2019
Port Huron, Michigan (Local 119 SPFPA)	April 1, 2018
Belding, Michigan	September 14, 2018
Wynne, Arkansas	June 28, 2018
Fulton, Mississippi	September 30, 2018
North Wales, Pennsylvania	July 31, 2018
Washington, Pennsylvania	July 25, 2017
Waynesboro, Tennessee	November 2, 2018

The union agreements at the Company's U.K. and Mexico operations are renewed annually. The Company expects to renew its union contracts without material disruption of its operations.

**Raw Material and Energy Availability**

A substantial portion of our base metal requirements (primarily copper) is normally obtained through short-term supply contracts with competitive pricing provisions (for cathode) and the open market (for scrap). Other raw materials used in the production of brass, including brass scrap, zinc, tin, and lead are obtained from zinc and lead producers, open-market dealers, and customers with brass process scrap. Raw materials used in the fabrication of aluminum and plastic products are purchased in the open market from major producers.

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Adequate supplies of raw material have historically been available to us from primary producers, metal brokers, and scrap dealers. Sufficient energy in the form of natural gas, fuel oils, and electricity is available to operate our production facilities. While temporary shortages of raw material and fuels may occur occasionally, to date they have not materially hampered our operations.

Our copper tube facilities can accommodate both refined copper and certain grades of copper scrap as the primary feedstock. The Company has commitments from refined copper producers for a portion of its metal requirements for 2017. Adequate quantities of copper are currently available. While we will continue to react to market developments, resulting pricing volatility or supply disruptions, if any, could nonetheless adversely affect the Company.

**Environmental Proceedings**

Compliance with environmental laws and regulations is a matter of high priority for the Company. Mueller's provision for environmental matters related to all properties was \$0.9 million for 2016, \$0.1 million for 2015, and \$1.2 million for 2014. The reserve for environmental matters was \$21.9 million at December 31, 2016 and \$21.7 million at December 26, 2015. Environmental costs related to non-operating properties are classified as a component of other income, net and costs related to operating properties are included in cost of goods sold. We do not currently anticipate that we will need to make material expenditures for compliance activities related to existing environmental matters during the next three fiscal years.

For a description of material pending environmental proceedings, see "Note 13 – Commitments and Contingencies" in the Notes to Consolidated Financial Statements, which is incorporated herein by reference.

**Other Business Factors**

Our business is not materially dependent on patents, trademarks, licenses, franchises, or concessions held. In addition, expenditures for Company-sponsored research and development activities were not material during 2016, 2015, or 2014. No material portion of our business involves governmental contracts. Seasonality of the Company's sales is not significant.

**SEC Filings**

We make available through our internet website our annual reports on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K, and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act as soon as reasonably practicable after we electronically file such material with, or furnish it to, the Securities and Exchange Commission (SEC). To retrieve any of this information, you may access our internet home page at [www.muellerindustries.com](http://www.muellerindustries.com), select Investors, and then select SEC Filings.

**ITEM 1A. RISK FACTORS**

The Company is exposed to risk as it operates its 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. These risk factors should be considered carefully when evaluating the Company and its businesses.

**Increases in costs and the availability of energy and raw materials used in our products could impact our cost of goods sold and our distribution expenses, which could have a material adverse impact on our operating margins.**

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Both the costs of raw materials used in our manufactured products (copper, brass, zinc, aluminum, and PVC and ABS resins) and energy costs (electricity, natural gas and fuel) have been volatile during the last several years, which has resulted in changes in production and distribution costs. For example, recent and pending climate change regulation and initiatives on the state, regional, federal, and international levels that have focused on reducing greenhouse gas (GHG) emissions from the energy and utility sectors may affect energy availability and costs in the near future. While we typically attempt to pass costs through to our customers or to modify or adapt our activities to mitigate the impact of increases, we may not be able to do so successfully. Failure to fully pass increases to our customers or to modify or adapt our activities to mitigate the impact could have a material adverse impact on our operating margins. Additionally, if we are for any reason unable to obtain raw materials or energy, our ability to manufacture our products would be impacted, which could have a material adverse impact on our operating margins.

**The unplanned departure of key personnel could disrupt our business.**

We depend on the continued efforts of our senior management. The unplanned loss of key personnel, or the inability to hire and retain qualified executives, could negatively impact our ability to manage our business.

**Economic conditions in the housing and commercial construction industries, as well as changes in interest rates, could have a material adverse impact on our business, financial condition, and results of operations.**

Our business is sensitive to changes in general economic conditions, particularly in the housing and commercial construction industries. Prices for our products are affected by overall supply and demand in the market for our products and for our competitors' products. In particular, market prices of building products historically have been volatile and cyclical, and we may be unable to control the timing and extent of pricing changes for our products. Prolonged periods of weak demand or excess supply in any of our businesses could negatively affect our revenues and margins and could result in a material adverse impact on our business, financial condition, and results of operations.

The markets that we serve, including, in particular, the housing and commercial construction industries, are significantly affected by movements in interest rates and the availability of credit. Significantly higher interest rates could have a material adverse effect on our business, financial condition, and results of operations. Our businesses are also affected by a variety of other factors beyond our control, including, but not limited to, employment levels, foreign currency exchange rates, unforeseen inflationary pressures, and consumer confidence. Since we operate in a variety of geographic areas, our businesses are subject to the economic conditions in each such area. General economic downturns or localized downturns in the regions where we have operations could have a material adverse effect on our business, financial condition, and results of operations.

The impact of economic conditions on the operations or liquidity of any party with which we conduct our business, including our suppliers and customers, may adversely impact our business.

**Competitive conditions, including the impact of imports and substitute products and technologies, could have a material adverse effect on the demand for our products as well as our margins and profitability.**

The markets we serve are competitive across all product lines. Some consolidation of customers has occurred and may continue, which could shift buying power to customers. In some cases, customers have moved production to low-cost countries such as China, or sourced components from there, which has reduced demand in North America for some of the products we manufacture. These conditions could have a material adverse impact on our ability to maintain margins and profitability. The potential threat of imports and substitute products is based upon many factors, including raw material prices, distribution costs, foreign exchange rates, production costs, and the development of emerging technologies and applications. The end use of alternative import and/or substitute products could have a material adverse effect on our business, financial condition, and results of operations. Likewise, the development of new technologies and applications could result in lower demand for our products and have a material adverse effect on our business.

**Our exposure to exchange rate fluctuations on cross border transactions and the translation of local currency results into U.S. dollars could have an adverse impact on our results of operations or financial position.**

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We conduct our business through subsidiaries in several different countries and export our products to many countries. Fluctuations in currency exchange rates could have a significant impact on the competitiveness of our products as well as the reported results of our operations, which are presented in U.S. dollars. A portion of our products are manufactured in or acquired from suppliers located in lower cost regions. Cross border transactions, both with external parties and intercompany relationships, result in increased exposure to foreign exchange fluctuations. The strengthening of the U.S. dollar could expose our U.S. based businesses to competitive threats from lower cost producers in other countries such as China. Lastly, our sales are translated into U.S. dollars for reporting purposes. The strengthening of the U.S. dollar could result in unfavorable translation effects when the results of foreign operations are translated into U.S. dollars. Accordingly, significant changes in exchange rates, particularly the British pound sterling, Mexican peso, Canadian dollar, South Korean won, and Chinese renminbi, could have an adverse impact on our results of operations or financial position.

**The vote by the United Kingdom (U.K.) to leave the European Union (EU) could adversely affect us.**

The June 2016 U.K. referendum on its membership in the EU resulted in a majority of U.K. voters voting to exit the EU ("Brexit"). As a result, we face risks associated with the potential uncertainty and consequences that may follow Brexit, including with respect to volatility in exchange rates and interest rates and disruptions affecting our relationships with our existing and future customers, suppliers and employees. Brexit could adversely affect European or worldwide political, regulatory, economic or market conditions and could contribute to instability in global political institutions, regulatory agencies and financial markets. Any of these effects of Brexit, and others we cannot anticipate, could adversely affect our business, results of operations and financial condition.

**We are subject to claims, litigation, and regulatory proceedings that could have a material adverse effect on us.**

We are, from time-to-time, involved in various claims, litigation matters, and regulatory proceedings. These matters may include contract disputes, personal injury claims, environmental claims, Occupational Safety and Health Administration inspections or proceedings, other tort claims, employment and tax matters and other litigation including class actions that arise in the ordinary course of our business. Although we intend to defend these matters vigorously, we cannot predict with certainty the outcome or effect of any claim or other litigation matter, and there can be no assurance as to the ultimate outcome of any litigation or regulatory proceeding. Litigation and regulatory proceedings may have a material adverse effect on us because of potential adverse outcomes, defense costs, the diversion of our management's resources, availability of insurance coverage and other factors.

**A strike, other work stoppage or business interruption, or our inability to renew collective bargaining agreements on favorable terms, could impact our cost structure and our ability to operate our facilities and produce our products, which could have an adverse effect on our results of operations.**

As of December 31, 2016, approximately 1,616 of our 4,244 employees were covered by collective bargaining or similar agreements. If we are unable to negotiate acceptable new agreements with the unions representing our employees upon expiration of existing contracts, we could experience strikes or other work stoppages. Strikes or other work stoppages could cause a significant disruption of operations at our facilities, which could have an adverse impact on us. New or renewal agreements with unions representing our employees could call for higher wages or benefits paid to union members, which would increase our operating costs and could adversely affect our profitability. Higher costs and/or limitations on our ability to operate our facilities and manufacture our products resulting from increased labor costs, strikes or other work stoppages could have a material adverse effect on our results of operations.

In addition, unexpected interruptions in our operations or those of our customers or suppliers due to such causes as weather-related events or acts of God, such as earthquakes, could have an adverse effect on our results of operations. For example, the Environmental Protection Agency has found that global climate change would be expected to increase the severity and possibly the frequency of severe weather patterns such as hurricanes. Although the financial impact of such future events is not reasonably estimable at this time, should they occur, our operations in certain coastal and flood-prone areas or operations of our customers and suppliers could be adversely affected.

**We are subject to environmental, health, and safety laws and regulations and future compliance may have a material adverse effect on our results of operations, financial position, or cash flows.**

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The nature of our operations exposes us to the risk of liabilities and claims with respect to environmental, health, and safety matters. While we have established accruals intended to cover the cost of environmental remediation at contaminated sites, the actual cost is difficult to determine and may exceed our estimated reserves. Further, changes to, or more rigorous enforcement or stringent interpretation of environmental or health and safety laws could require significant incremental costs to maintain compliance. Recent and pending climate change regulation and initiatives on the state, regional, federal, and international levels may require certain of our facilities to reduce GHG emissions. While not reasonably estimable at this time, this could require capital expenditures for environmental control facilities and/or the purchase of GHG emissions credits in the coming years. In addition, with respect to environmental matters, future claims may be asserted against us for, among other things, past acts or omissions at locations operated by predecessor entities, or alleging damage or injury or seeking other relief in connection with environmental matters associated with our operations. Future liabilities, claims, and compliance costs may have a material adverse effect on us because of potential adverse outcomes, defense costs, diversion of our resources, availability of insurance coverage, and other factors. The overall impact of these requirements on our operations could increase our costs and diminish our ability to compete with products that are produced in countries without such rigorous standards; the long run impact could negatively impact our results and have a material adverse effect on our business.

**If we do not successfully execute or effectively operate, integrate, leverage and grow acquired businesses, our financial results may suffer.**

Our strategy for long-term growth, productivity and profitability depends in part on our ability to make prudent strategic acquisitions and to realize the benefits we expect when we make those acquisitions. In furtherance of this strategy, over the past several years, we have acquired businesses in Europe, Canada, South Korea, and the United States.

While we currently anticipate that our past and future acquisitions will enhance our value proposition to customers and improve our long-term profitability, there can be no assurance that we will realize our expectations within the time frame we have established, if at all, or that we can continue to support the value we allocate to these acquired businesses, including their goodwill or other intangible assets.

**ITEM 1B. UNRESOLVED STAFF COMMENTS**

None.

**ITEM 2. PROPERTIES**

Information pertaining to our major operating facilities is included below. Except as noted, we own all of the principal properties. In addition, we own and/or lease other properties used as distribution centers and corporate offices. Our plants are in satisfactory condition and are suitable for the purpose for which they were designed and are now being used.

<u>Location of Facility</u>	<u>Building Space (Sq. Ft.)</u>	<u>Primary Use</u>	<u>Owned or Leased</u>
<u>Piping Systems Segment</u>			
Fulton, MS	649,500	Manufacturing & Packaging	579,500 Owned; 70,000 Leased
New Market, VA	413,120	Manufacturing	Owned
Wynne, AR	400,000	Manufacturing & Distribution	Owned
Ontario, CA	211,000	Manufacturing & Distribution	Leased
Ansonia, CT	89,396	Manufacturing & Distribution	Owned

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<u>Location of Facility</u>	<u>Building Space (Sq. Ft.)</u>	<u>Primary Use</u>	<u>Owned or Leased</u>
<u>Piping Systems Segment (cont.)</u>			
Covington, TN	159,500	Manufacturing	Owned
Phoenix, AZ	61,000	Manufacturing	Leased
Lawrenceville, GA	56,000	Manufacturing	Leased
North Wales, PA	174,000	Manufacturing	Owned
Cedar City, UT	260,000	Manufacturing & Distribution	Owned
Bilston, England	402,500	Manufacturing	Owned
London, Ontario, Canada	200,400	Manufacturing	Leased
Monterrey, Mexico	152,000	Manufacturing	Leased
Jintan City, Jiangsu Province, China	322,580	Manufacturing	Owned
Yangju City, Gyeonggi Province, South Korea	343,909	Manufacturing	Owned
<u>Industrial Metals Segment</u>			
Port Huron, MI	450,000	Manufacturing	Owned
Belding, MI	293,068	Manufacturing	Owned
Brighton, MI	65,000	Machining	Leased
Marysville, MI	81,500	Manufacturing	Owned
Brooklyn, OH	75,000	Manufacturing	Leased
Valley View, OH	65,400	Manufacturing & Distribution	Leased
Middleton, OH	55,000	Manufacturing	Owned
Washington, PA	108,275	Manufacturing	Owned
Waynesboro, TN	57,000	Manufacturing	Leased
<u>Climate Segment</u>			
Hartsville, TN	78,000	Manufacturing	Owned
Carthage, TN	67,520	Manufacturing	Owned
Bluffs, IL	107,000	Manufacturing	Owned
Gordonsville, TN	54,000	Manufacturing	Leased
Bloomfield, CT	26,900	Manufacturing	Leased
Carrolton, TX	9,230	Manufacturing	Leased
Hickory, NC	100,000	Manufacturing	Owned
Guadalupe, Mexico	130,110	Manufacturing	Leased
Xinbei District, Changzhou, China	33,940	Manufacturing	Leased

**ITEM 3. LEGAL PROCEEDINGS**

The Company is involved in certain litigation as a result of claims that arose in the ordinary course of business. Additionally, we may realize the benefit of certain legal claims and litigation in the future; these gain contingencies are not recognized in the Consolidated Financial Statements.

For a description of material pending legal proceedings, see "Note 13 – Commitments and Contingencies" in the Notes to Consolidated Financial Statements, which is incorporated herein by reference.

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**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**

Our common stock is listed on the New York Stock Exchange (NYSE) under the symbol "MLL." As of February 24, 2017, the number of holders of record of Mueller's common stock was 770. The following table sets forth, for the periods indicated, the high and low sales prices as reported by the NYSE and the cash dividends paid per share of common stock.

	Sales Prices		Dividend
	High	Low	
2016			
Fourth quarter	\$ 41.27	\$ 29.52	\$ 0.100
Third quarter	35.52	31.38	0.100
Second quarter	32.74	28.01	0.100
First quarter	29.86	23.09	0.075
2015			
Fourth quarter	\$ 33.04	\$ 26.86	\$ 0.075
Third quarter	35.65	28.94	0.075
Second quarter	37.18	34.57	0.075
First quarter	36.47	31.34	0.075

Payment of dividends in the future is dependent upon the Company's financial condition, cash flows, capital requirements, earnings, and other factors.

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**Issuer Purchases of Equity Securities**

The Company's Board of Directors has extended, until October 2017, the authorization to repurchase up to 20 million shares of the Company's common stock through open market transactions or through privately negotiated transactions. The Company has no obligation to purchase any shares and may cancel, suspend, or extend the time period for the purchase of shares at any time. Any purchases will be funded primarily through existing cash and cash from operations. The Company may hold any shares purchased in treasury or use a portion of the repurchased shares for its stock-based compensation plans, as well as for other corporate purposes. From its initial authorization in 1999 through December 31, 2016, the Company had repurchased approximately 4.7 million shares under this authorization. Below is a summary of the Company's stock repurchases for the quarter ended December 31, 2016.

	(a)	(b)	(c)	(d)
	<u>Total Number of Shares Purchased</u>	<u>Average Price Paid per Share</u>	<u>Total Number of Shares Purchased as Part of Publicly Announced Plans or Programs</u>	<u>Maximum Number of Shares That May Yet Be Purchased Under the Plans or Programs</u>
October 2 – October 29, 2016	—	\$ —	—	15,287,060 (1)
October 30 – November 26, 2016	—	—	—	
November 27 – December 31, 2016	17,036 (2)	37.93	—	

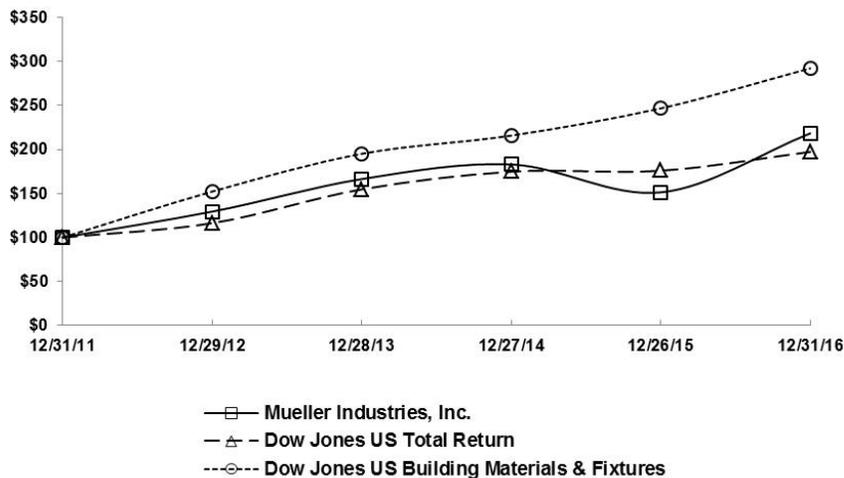
(1) Shares available to be purchased under the Company's 20 million share repurchase authorization until October 2017. The extension of the authorization was announced on October 27, 2016.

(2) Shares tendered to the Company by holders of stock-based awards in payment of purchase price and/or withholding taxes upon exercise and/or vesting. Also includes shares resulting from restricted stock forfeitures.

**Company Stock Performance**

The following graph compares total stockholder return since December 31, 2011 to the Dow Jones U.S. Total Return Index (Total Return Index) and the Dow Jones U.S. Building Materials & Fixtures Index (Building Materials Index). Total return values for the Total Return Index, the Building Materials Index and the Company were calculated based on cumulative total return values assuming reinvestment of dividends.

**COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN\***  
 Among Mueller Industries, Inc., the Dow Jones US Total Return Index,  
 and the Dow Jones US Building Materials & Fixtures Index



\*\$100 invested on 12/31/11 in stock or index, including reinvestment of dividends.  
 Indexes calculated on month-end basis.

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	2011	2012	2013	2014	2015	2016
Mueller Industries, Inc.	100.00	129.43	166.33	183.01	151.28	218.39
Dow Jones U.S. Total Return Index	100.00	116.32	154.68	174.71	175.81	197.35
Dow Jones U.S. Building Materials & Fixtures Index	100.00	152.21	195.14	215.75	246.75	292.28

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**ITEM 6. SELECTED FINANCIAL DATA**

(In thousands, except per share data)

	2016	2015	2014	2013	2012
For the fiscal year: (1)					
Net sales	\$ 2,055,622	\$ 2,100,002	\$ 2,364,227	\$ 2,158,541	\$ 2,189,938
Operating income	152,713	137,268	153,996	270,937 <sup>(5)</sup>	126,705 <sup>(6)</sup>
Net income attributable to Mueller Industries, Inc.	99,727 <sup>(2)</sup>	87,864 <sup>(3)</sup>	101,560 <sup>(4)</sup>	172,600	82,395
Diluted earnings per share <sup>(8)</sup>	1.74	1.54	1.79	3.06	1.16 <sup>(7)</sup>
Cash dividends per share <sup>(8)</sup>	0.375	0.30	0.30	0.25	0.2125

At year-end:

Total assets	1,447,476	1,338,801	1,328,096	1,247,767	1,104,155
Long-term debt	213,709	204,250	205,250	206,250	207,300

(1) Includes activity of acquired businesses from the following purchase dates: Jungwoo Metal Ind. Co., LTD, April 26, 2016; Great Lakes Copper Ltd., July 31, 2015; Sherwood Valve Products, LLC, June 18, 2015; Turbotec Products, Inc., March 30, 2015; Yorkshire Copper Tube, February 28, 2014; Howell Metal Company, October 17, 2013; and Westermeyer Industries, Inc., August 16, 2012.

(2) Includes pre-tax impairment charges of \$6.8 million on fixed assets.

(3) Includes \$15.4 million pre-tax gain from the sale of certain assets, severance charges of \$3.4 million and a permanent adjustment to a deferred tax liability of \$4.2 million.

(4) Includes \$6.3 million pre-tax gain on sale of assets, reversal of valuation allowance of \$5.7 million, and \$7.3 million of pre-tax charges related to severance.

(5) Includes \$106.3 million pre-tax gain from settlement of insurance claims, \$39.8 million pre-tax gain from the sale of the Company's Schedule 40 pressure plastic fittings business along with the sale of certain other plastic fittings manufacturing assets, and pre-tax impairment charges of \$4.3 million primarily related to real property associated with the aforementioned plastics sale transaction.

(6) Includes deferred recognition of \$8.0 million gain from liquidation of LIFO inventory layers, \$4.1 million net gain from settlement of litigation, \$1.5 million gain from settlement of insurance claims, and severance charges of \$3.4 million.

(7) Includes the impact of 10.4 million shares repurchased from Leucadia National Corporation in September 2012.

(8) Adjusted retroactively to reflect the two-for-one stock split that occurred on March 14, 2014.

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

Management's discussion and analysis of financial condition and results of operations is contained under the caption "Financial Review" submitted as a separate section of this Annual Report on Form 10-K commencing on page F-2.

**ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK**

Quantitative and qualitative disclosures about market risk are contained under the caption "Financial Review" submitted as a separate section of this Annual Report on Form 10-K commencing on page F-2.

**ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA**

Financial Statements required by this item are contained in a separate section of this Annual Report on Form 10-K commencing on page F-18.

**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**

The Company maintains disclosure controls and procedures designed to ensure information required to be disclosed in Company reports filed under the Securities Exchange Act of 1934, as amended (the Exchange Act), is recorded, processed, summarized, and reported within the time periods specified in the SEC's rules and forms. Disclosure controls and procedures are designed to provide reasonable assurance that information required to be disclosed in Company reports filed under the Exchange Act is accumulated and communicated to management, including the Company's Chief Executive Officer and Chief Financial Officer, as appropriate, to allow timely decisions regarding required disclosure.

The Company's management, with the participation of the Company's Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of the Company's disclosure controls and procedures pursuant to Rule 13a-15(e) of the Exchange Act as of December 31, 2016. Based on that evaluation, the Company's Chief Executive Officer and Chief Financial Officer have concluded that the Company's disclosure controls and procedures are effective as of December 31, 2016 to ensure that information required to be disclosed in Company reports filed under the Exchange Act is (i) recorded, processed, summarized and reported within the time periods specified in the SEC rules and forms and (ii) accumulated and communicated to management, including the Company's principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

**Management's Report on Internal Control over Financial Reporting**

The Company's management is responsible for establishing and maintaining adequate internal control over financial reporting as defined in Rules 13a-15(f) and 15d-15(f) under the Securities Exchange Act of 1934. Pursuant to the rules and regulations of the SEC, internal control over financial reporting is a process designed by, or under the supervision of, the Company's principal executive and principal financial officers, and effected by the Company's Board of Directors, management and other personnel, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States and 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 Company's assets; (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 issuer are being made only in accordance with authorizations of the Company's management and directors; 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. Due to inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Further, because of changes in conditions, effectiveness of internal control over financial reporting may vary over time.

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The Company acquired a 60 percent equity interest in Jungwoo Metal Ind. Co., LTD during 2016 and has excluded this business from management's assessment of internal controls. The total value of assets for this business at year-end was \$49.7 million, which represents 3.4 percent of the Company's consolidated total assets at December 31, 2016. Net sales from the date of acquisition represents 1.1 percent of the consolidated net sales of the Company for 2016. Operating income from the date of acquisition represents 0.1 percent of the consolidated operating income of the Company for 2016. Accordingly, this acquired business is not included in the scope of this report.

As required by Rule 13a-15(c) under the Exchange Act, the Company's management, with the participation of the Company's Chief Executive Officer and Chief Financial Officer, has evaluated the effectiveness of the Company's internal control over financial reporting as of December 31, 2016 based on the control criteria established in a report entitled *Internal Control—Integrated Framework*, (2013 Framework) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO). Based on such evaluation, management has concluded that our internal control over financial reporting was effective as of December 31, 2016.

Ernst & Young LLP, the independent registered public accounting firm that audited the Company's financial statements included in this Annual Report on Form 10-K, has issued an attestation report on the Company's internal control over financial reporting, which is included herein.

**Changes in Internal Control Over Financial Reporting**

There were no changes in the Company's internal control over financial reporting during the Company's fiscal quarter ended December 31, 2016, that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

**Report of Independent Registered Public Accounting Firm**

The Board of Directors and Stockholders of Mueller Industries, Inc.

We have audited Mueller Industries, Inc.'s internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control—Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) (the COSO criteria). Mueller Industries, Inc.'s management is responsible for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting included in the accompanying Management's Report on Internal Control over Financial Reporting. Our responsibility is to express an opinion on the company's internal control over financial reporting based on our audit.

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

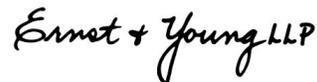
A company's internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles. A company's internal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

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

As indicated in the accompanying Management's Report on Internal Control over Financial Reporting, management's assessment of and conclusion on the effectiveness of internal control over financial reporting did not include the internal controls of Jungwoo Metal Ind. Co., LTD, which is included in the 2016 consolidated financial statements of Mueller Industries, Inc. and constituted \$49.7 million and \$32.7 million of total and net assets, respectively, as of December 31, 2016, and \$22.0 million and \$0.2 million of net sales and operating income, respectively, for the year then ended. Our audit of internal control over financial reporting of Mueller Industries, Inc. also did not include an evaluation of the internal control over financial reporting of Jungwoo Metal Ind. Co., LTD.

In our opinion, Mueller Industries, Inc. maintained, in all material respects, effective internal control over financial reporting as of December 31, 2016, based on the COSO criteria.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), the consolidated balance sheets of Mueller Industries, Inc. as of December 31, 2016 and December 26, 2015, and the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the three years in the period ended December 31, 2016 and our report dated March 1, 2017 expressed an unqualified opinion thereon.

The logo for Ernst & Young LLP, featuring the company name in a stylized, cursive script font.

Memphis, Tennessee  
March 1, 2017

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**ITEM 9B. OTHER INFORMATION**

None.

**PART III**

**ITEM 10. DIRECTORS, EXECUTIVE OFFICERS, AND CORPORATE GOVERNANCE**

The information required by Item 10 is contained under the captions "Ownership of Common Stock by Directors and Executive Officers and Information about Director Nominees," "Corporate Governance," "Report of the Audit Committee of the Board of Directors," and "Section 16(a) Beneficial Ownership Compliance Reporting" in the Company's Proxy Statement for its 2017 Annual Meeting of Stockholders to be filed with the SEC on or about March 30, 2017, which is incorporated herein by reference.

The Company has adopted a Code of Business Conduct and Ethics that applies to its chief executive officer, chief financial officer, and other financial executives. We have also made the Code of Business Conduct and Ethics available on the Company's website at [www.muellerindustries.com](http://www.muellerindustries.com).

**ITEM 11. EXECUTIVE COMPENSATION**

The information required by Item 11 is contained under the caption "Compensation Discussion and Analysis," "Summary Compensation Table for 2016," "2016 Grants of Plan Based Awards Table," "Outstanding Equity Awards at Fiscal 2016 Year-End," "2016 Option Exercises and Stock Vested," "Potential Payments Upon Termination of Employment or Change in Control as of the End of 2016," "2016 Director Compensation," "Report of the Compensation Committee of the Board of Directors on Executive Compensation" and "Corporate Governance" in the Company's Proxy Statement for its 2017 Annual Meeting of Stockholders to be filed with the SEC on or about March 30, 2017, which is incorporated herein by reference.

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

**Equity Compensation Plan Information**

The following table discloses information regarding the securities to be issued and the securities remaining available for issuance under the Registrant's stock-based incentive plans as of December 31, 2016 (shares in thousands):

Plan category	(a) Number of securities to be issued upon exercise of outstanding options, warrants, and rights	(b) Weighted average exercise price of outstanding options, warrants, and rights	(c) Number of securities remaining available for future issuance under equity compensation plans (excluding securities reflected in column (a))
Equity compensation plans approved by security holders	1,034	\$ 21.24	1,017
Equity compensation plans not approved by security holders	—	—	—
<b>Total</b>	<u>1,034</u>	<u>\$ 21.24</u>	<u>1,017</u>

Other information required by Item 12 is contained under the captions "Principal Stockholders" and "Ownership of Common Stock by Directors and Executive Officers and Information about Director Nominees" in the Company's Proxy Statement for its 2017 Annual Meeting of Stockholders to be filed with the SEC on or about March 30, 2017, which is incorporated herein by reference.

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

The information required by Item 13 is contained under the caption "Corporate Governance" in the Company's Proxy Statement for its 2017 Annual Meeting of Stockholders to be filed with the SEC on or about March 30, 2017, which is incorporated herein by reference.

**ITEM 14. PRINCIPAL ACCOUNTING FEES AND SERVICES**

The information required by Item 14 is contained under the caption "Appointment of Independent Registered Public Accounting Firm" in the Company's Proxy Statement for its 2017 Annual Meeting of Stockholders to be filed with the SEC on or about March 30, 2017, which is incorporated herein by reference.

**PART IV**

**ITEM 15. EXHIBITS, FINANCIAL STATEMENT SCHEDULES**

- (a) The following documents are filed as part of this report:
1. Financial Statements: the financial statements, notes, and report of independent registered public accounting firm described in Item 8 of this Annual Report on Form 10-K are contained in a separate section of this Annual Report on Form 10-K commencing on page F-1.
  2. Financial Statement Schedule: the financial statement schedule described in Item 8 of this report is contained in a separate section of this Annual Report on Form 10-K commencing on page F-1.
  3. Exhibits:
    - 3.1 Restated Certificate of Incorporation of the Registrant dated February 8, 2007 (Incorporated herein by reference to Exhibit 3.1 of the Registrant's Annual Report on Form 10-K, dated February 28, 2007, for the fiscal year ended December 30, 2006).
    - 3.2 Amended and Restated By-laws of the Registrant, effective as of January 15, 2016 (Incorporated herein by reference to Exhibit 3.1 of the Registrant's Current Report on Form 8-K, dated January 19, 2016).
    - 4.1 Certain instruments with respect to long-term debt of the Registrant have not been filed as Exhibits to this Report since the total amount of securities authorized under any such instruments does not exceed 10 percent of the total assets of the Registrant and its subsidiaries on a consolidated basis. The Registrant agrees to furnish a copy of each such instrument upon request of the SEC.
    - 10.1 Amended and Restated Consulting Agreement, dated October 25, 2007, by and between the Registrant and Harvey Karp (Incorporated herein by reference to Exhibit 10.2 of the Registrant's Current Report on Form 8-K, dated October 25, 2007).
    - 10.2 Amendment No. 1, dated December 2, 2008, to the Amended and Restated Consulting Agreement, dated October 25, 2007, by and between the Registrant and Harvey Karp (Incorporated herein by reference to Exhibit 10.7 of the Registrant's Annual Report on Form 10-K, dated February 24, 2009, for the fiscal year ended December 27, 2008).
    - 10.3 Letter Agreement with Harvey Karp, dated as of May 11, 2011 (Incorporated herein by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K, dated May 16, 2011).
    - 10.4 Amended and Restated Employment Agreement, effective October 30, 2008, by and between the Registrant and Gregory L. Christopher (Incorporated herein by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K, dated December 26, 2008).
    - 10.5 Amendment No. 1 to Amended and Restated Employment Agreement by and between the Registrant and Gregory L. Christopher, dated February 14, 2013 (Incorporated herein by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K, dated February 14, 2013).
    - 10.6 Amendment No. 2 to Amended and Restated Employment Agreement by and between the Registrant and Gregory L. Christopher, dated July 26, 2016 (Incorporated herein by reference to Exhibit 10.2 of the Registrant's Quarterly Report on Form 10-Q, for the period ended July 2, 2016, dated July 28, 2016).

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- 10.7 Mueller Industries, Inc. 2002 Stock Option Plan Amended and Restated as of February 16, 2006 (Incorporated herein by reference to Exhibit 10.20 of the Registrant's Annual Report on Form 10-K, dated February 28, 2007, for the fiscal year ended December 30, 2006).
- 10.8 Mueller Industries, Inc. 2009 Stock Incentive Plan (Incorporated by reference from Appendix I to the Company's 2009 Definitive Proxy Statement with respect to the Company's 2009 Annual Meeting of Stockholders, as filed with the Securities and Exchange Commission on March 26, 2009).
- 10.9 Mueller Industries, Inc. 2014 Stock Incentive Plan (Incorporated by reference from Appendix I to the Company's 2014 Definitive Proxy Statement with respect to the Company's 2014 Annual Meeting of Stockholders, as filed with the Securities and Exchange Commission on March 19, 2014).
- 10.10 Amendment to the Mueller Industries, Inc. 2002 Stock Option Plan, dated July 11, 2011 (Incorporated herein by reference to Exhibit 10.16 of the Registrant's Annual Report on Form 10-K, dated February 28, 2012, for the fiscal year ended December 31, 2011).
- 10.11 Amendment to the Mueller Industries, Inc. 2009 Stock Incentive Plan, dated July 11, 2011 (Incorporated herein by reference to Exhibit 10.17 of the Registrant's Annual Report on Form 10-K, dated February 28, 2012, for the fiscal year ended December 31, 2011).
- 10.12 Mueller Industries, Inc. 2011 Annual Bonus Plan (Incorporated herein by reference to Exhibit 10.18 of the Registrant's Annual Report on Form 10-K, dated February 28, 2012, for the fiscal year ended December 31, 2011).
- 10.13 Summary description of the Registrant's 2017 incentive plan for certain key employees.
- 10.14 Amended Credit Agreement, dated as of March 7, 2011, among the Registrant (as Borrower) and Bank of America, N.A. (as agent), and certain lenders named therein, following adoption of Amendment No. 2 dated December 11, 2012 (Incorporated herein by reference to Exhibit 10.20 of the Registrant's Annual Report on Form 10-K, dated February 27, 2013, for the fiscal year ended December 29, 2012).
- 10.15 Amendment No. 1 to Credit Agreement among the Registrant (as borrower), Bank of America, N.A. (as agent), and certain lenders named therein dated August 12, 2011 (Incorporated herein by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q, for the Quarterly period ended October 1, 2011, dated October 27, 2011).
- 10.16 Amendment No. 2 to Credit Agreement among the Registrant (as borrower), Bank of America, N.A. (as agent), and certain lenders named therein dated December 11, 2012 (Incorporated herein by reference to Exhibit 10.22 of the Registrant's Annual Report on Form 10-K, dated February 27, 2013, for the fiscal year ended December 29, 2012).
- 10.17 Amendment No. 3 to Credit Agreement among the Registrant (as borrower), Bank of America, N.A. (as agent), and certain lenders named therein dated July 26, 2016 (Incorporated herein by reference to Exhibit 10.1 of the Registrant's Quarterly Report on Form 10-Q, for the period ended July 2, 2016, dated July 28, 2016).
- 10.18 Credit Agreement, dated as of December 6, 2016 among the Registrant (as borrower), Bank of America (as agent), and certain lenders named therein (Incorporated herein by reference to Exhibit 10.1 of the Registrant's Current Report on Form 8-K, dated December 12, 2016).
- 10.19 Change in Control Agreement, effective July 26, 2016 by and between the Registrant and Brian K. Barksdale (Incorporated herein by reference to Exhibit 10.3 of the Registrant's Quarterly Report on Form 10-Q, for the period ended July 2, 2016, dated July 28, 2016).

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10.20	Change in Control Agreement, effective July 26, 2016 by and between the Registrant and Daniel R. Corbin (Incorporated herein by reference to Exhibit 10.4 of the Registrant's Quarterly Report on Form 10-Q, for the period ended July 2, 2016, dated July 28, 2016).
10.21	Change in Control Agreement, effective July 26, 2016 by and between the Registrant and Jeffrey A. Martin (Incorporated herein by reference to Exhibit 10.5 of the Registrant's Quarterly Report on Form 10-Q, for the period ended July 2, 2016, dated July 28, 2016).
10.22	Change in Control Agreement, effective July 26, 2016 by and between the Registrant and Mark Millerchip (Incorporated herein by reference to Exhibit 10.6 of the Registrant's Quarterly Report on Form 10-Q, for the period ended July 2, 2016, dated July 28, 2016).
10.23	Change in Control Agreement, effective July 26, 2016 by and between the Registrant and Nicholas W. Moss (Incorporated herein by reference to Exhibit 10.7 of the Registrant's Quarterly Report on Form 10-Q, for the period ended July 2, 2016, dated July 28, 2016).
10.24	Change in Control Agreement, effective July 26, 2016 by and between the Registrant and Steffen Sigloch (Incorporated herein by reference to Exhibit 10.8 of the Registrant's Quarterly Report on Form 10-Q, for the period ended July 2, 2016, dated July 28, 2016).
10.25	Change in Control Agreement, effective January 3, 2017 by and between the Registrant and Christopher J. Miritello.
21.0	Subsidiaries of the Registrant.
23.0	Consent of Independent Registered Public Accounting Firm.
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended.
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended.
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	XBRL Taxonomy Extension Definition Linkbase
101.INS	XBRL Instance Document
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Presentation Linkbase Document
101.SCH	XBRL Taxonomy Extension Schema

**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, on March 1, 2017.

**MUELLER INDUSTRIES, INC.**

/s/ Gregory L. Christopher  
Gregory L. Christopher, Chief Executive Officer  
(Principal Executive Officer) and Chairman of the Board

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

<u>Signature</u>	<u>Title</u>	<u>Date</u>
<u>/s/ Gregory L. Christopher</u> Gregory L. Christopher	Chief Executive Officer (Principal Executive Officer) and Chairman of the Board	March 1, 2017
<u>/s/ Gary S. Gladstein</u> Gary S. Gladstein	Lead Independent Director	March 1, 2017
<u>/s/ Paul J. Flaherty</u> Paul J. Flaherty	Director	March 1, 2017
<u>/s/ Gennaro J. Fulvio</u> Gennaro J. Fulvio	Director	March 1, 2017
<u>/s/ Scott J. Goldman</u> Scott J. Goldman	Director	March 1, 2017
<u>/s/ John B. Hansen</u> John B. Hansen	Director	March 1, 2017
<u>/s/ Terry Hermanson</u> Terry Hermanson	Director	March 1, 2017

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

<u>Signature and Title</u>	<u>Date</u>
<u>/s/ Jeffrey A. Martin</u> Jeffrey A. Martin Chief Financial Officer and Treasurer (Principal Financial and Accounting Officer)	March 1, 2017
<u>/s/ Anthony J. Steinriede</u> Anthony J. Steinriede Vice President – Corporate Controller	March 1, 2017

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MUELLER INDUSTRIES, INC.

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## FINANCIAL REVIEW

The Financial Review section of our Annual Report on Form 10-K consists of the following: Management's Discussion and Analysis of Results of Operations and Financial Condition (MD&A), the Consolidated Financial Statements, and Other Financial Information, all of which include information about our significant accounting policies, practices, and the transactions that impact our financial results. The following MD&A describes the principal factors affecting the results of operations, liquidity and capital resources, contractual cash obligations, and the critical accounting estimates of the Company. The discussion in the Financial Review section should be read in conjunction with the other sections of this Annual Report, particularly "Item 1: Business" and our other detailed discussion of risk factors included in this MD&A.

### Overview

We are a leading manufacturer of copper, brass, aluminum, and plastic products. The range of these products is broad: copper tube and fittings; line sets; brass and copper alloy rod, bar, and shapes; aluminum and brass forgings; aluminum impact extrusions; plastic fittings and valves; refrigeration valves and fittings; fabricated tubular products; and steel nipples. We also resell imported brass and plastic plumbing valves, malleable iron fittings, faucets and plumbing specialty products. Mueller's operations are located throughout the United States and in Canada, Mexico, Great Britain, South Korea, and China.

During the first quarter of 2016, we made changes to our management reporting structure as a result of a change in the way the Chief Executive Officer, who serves as the Chief Operating Decision Maker, manages and evaluates the business, makes key operating decisions, and allocates resources. Previously, we had two reportable segments: Plumbing & Refrigeration and OEM. During the first quarter, we realigned our operating segments into three reportable segments: Piping Systems, Industrial Metals, and Climate. The changes to the reporting structure resulted from management's decision to operationally separate certain businesses in order to enhance the level of focus on those businesses. This included the appointment of separate management teams. In addition, as a result of several acquisitions, we separated certain businesses with similar characteristics to create the Climate and Industrial Metals segments. These businesses were previously aggregated within the OEM segment. Management has recast certain prior year amounts to conform to the current year presentation. Each of the reportable segments is composed of certain operating segments that are aggregated primarily by the nature of products offered as follows:

- **Piping Systems:** The Piping Systems segment is composed of Domestic Piping Systems Group, Canadian Operations, European Operations, Trading Group, Mueller-Xingrong (our Chinese joint venture), and Jungwoo-Mueller (our South Korean joint venture). The Domestic Piping Systems Group manufactures copper tube and fittings, plastic fittings, and line sets. These products are manufactured in the U.S., sold in the U.S., and exported to markets worldwide. The Canadian Operations manufacture copper tube and line sets in Canada and sell the products primarily in the U.S. and Canada. European Operations manufacture copper tube in the United Kingdom, which is sold throughout Europe. The Trading Group manufactures pipe nipples and sources products for import distribution in North America. Mueller-Xingrong manufactures engineered copper tube primarily for air-conditioning applications; these products are sold primarily to OEMs located in China. Jungwoo-Mueller manufactures copper-based joining products that are sold worldwide. The Piping Systems segment sells products to wholesalers in the plumbing and refrigeration markets, distributors to the manufactured housing and recreational vehicle industries, building material retailers, and air-conditioning OEMs.
- **Industrial Metals:** The Industrial Metals segment is composed of Brass Rod & Copper Bar Products, Impacts & Micro Gauge, and Brass Value-Added Products. The segment manufactures and sells brass and copper alloy rod, bar, and shapes; aluminum and brass forgings; aluminum impact extrusions; and gas valves and assemblies. The segment manufactures and sells its products primarily to domestic OEMs in the industrial, construction, heating, ventilation, and air-conditioning, plumbing, and refrigeration markets.
- **Climate:** The Climate segment is composed of Refrigeration Products, Fabricated Tube Products, Westermeyer, and Turbotec. The segment manufactures and sells refrigeration valves and fittings and fabricated tubular products. The segment sells its products primarily to the heating, ventilation, air-conditioning, and refrigeration markets in the U.S.

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New housing starts and commercial construction are important determinants of the Company's sales to the heating, ventilation, and air-conditioning, refrigeration, and plumbing markets because the principal end use of a significant portion of our products is in the construction of single and multi-family housing and commercial buildings. Repairs and remodeling projects are also important drivers of underlying demand for these products.

Residential construction activity has shown improvement in recent years, but remains at levels below long-term historical averages. Continued improvement is expected, but may be tempered by continuing low labor participation rates, the pace of household formations, and tighter lending standards. Per the U.S. Census Bureau, actual housing starts in the U.S. were 1.2 million in 2016, which compares to 1.1 million in 2015 and 1.0 million in 2014. Mortgage rates remain at historically low levels, as the average 30-year fixed mortgage rate was approximately 3.65 percent in 2016 and 3.85 percent in 2015.

The private nonresidential construction sector, which includes offices, industrial, health care, and retail projects, has also shown improvement in recent years. Per the U.S. Census Bureau, the value of private nonresidential construction put in place was \$420.1 billion in 2016, \$389.9 billion in 2015, and \$359.7 billion in 2014. We expect that most of these conditions will continue to improve.

Profitability of certain of our product lines depends upon the "spreads" between the cost of raw material and the selling prices of our products. The open market prices for copper cathode and scrap, for example, influence the selling price of copper tube, a principal product manufactured by the Company. We attempt to minimize the effects on profitability from fluctuations in material costs by passing through these costs to our customers. Our earnings and cash flow are dependent upon these spreads that fluctuate based upon market conditions.

Earnings and profitability are also impacted by unit volumes that are subject to market trends, such as substitute products, imports, technologies, and market share. In our core product lines, we intensively manage our pricing structure while attempting to maximize profitability. From time-to-time, this practice results in lost sales opportunities and lower volume. For plumbing systems, plastics are the primary substitute product; these products represent an increasing share of consumption. U.S. consumption of copper tube is still predominantly supplied by U.S. manufacturers. For certain air-conditioning and refrigeration applications, aluminum based systems are the primary substitution threat. We cannot predict the acceptance or the rate of switching that may occur. In the last decade, brass rod consumption in the U.S. has declined due to the outsourcing of many manufactured products from offshore regions.

## Results of Operations

### Consolidated Results

The following table compares summary operating results for 2016, 2015, and 2014:

<i>(In thousands)</i>	2016	2015	2014	Percent Change	
				2016 vs. 2015	2015 vs. 2014
Net sales	\$ 2,055,622	\$ 2,100,002	\$ 2,364,227	(2.1)%	(11.2)%
Operating income	152,713	137,268	153,996	11.3	(10.9)
Net income	99,727	87,864	101,560	13.5	(13.5)

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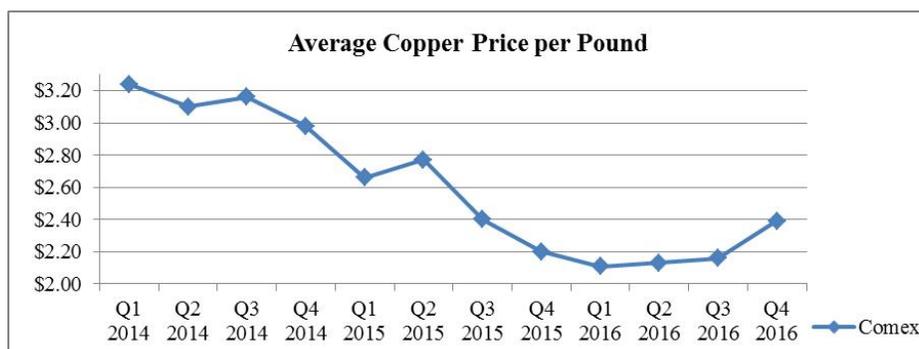
The following are components of changes in net sales compared to the prior year:

	<u>2016 vs. 2015</u>	<u>2015 vs. 2014</u>
Net selling price in core product lines	(9.0) %	(9.4) %
Unit sales volume in core product lines	(1.6)	(3.4)
Acquisitions and new products	9.0	5.8
Dispositions	—	(2.6)
Other	(0.5)	(1.6)
	<u>(2.1) %</u>	<u>(11.2) %</u>

The decrease in net sales in 2016 was primarily due to (i) lower net selling prices of \$189.0 million in our core product lines, primarily copper tube and brass rod, and (ii) lower unit sales volume of \$33.0 million in our core product lines. The decrease in net sales resulting from lower net selling prices also reflects the impact of translating net sales of the Company's foreign operations to U.S. dollars, which was approximately \$43.6 million. These decreases were partially offset by (i) \$139.4 million of incremental sales recorded by Great Lakes Copper Ltd. (Great Lakes), acquired in July 2015, (ii) \$22.0 million of sales recorded by Jungwoo-Mueller, acquired in April 2016, (iii) \$19.2 million of incremental sales recorded by Sherwood Valve LLC (Sherwood), acquired in June 2015, and (iv) \$3.5 million of incremental sales recorded by Turbotec Products, Inc. (Turbotec), acquired in March 2015.

The decrease in net sales in 2015 was primarily due to (i) lower net selling prices of \$218.3 million in our core product lines, primarily copper tube and brass rod, (ii) lower unit sales volume of \$79.9 million in our core product lines, primarily in the Industrial Metals segment, and (iii) the absence of sales of \$57.5 million recorded by Primaflow, a business we sold during November 2014. These decreases were offset by (i) \$90.5 million of sales recorded by Great Lakes, (ii) \$20.8 million of sales recorded by Sherwood, and (iii) \$16.8 million of sales recorded by Turbotec, all of which were businesses acquired during 2015.

Net selling prices generally fluctuate with changes in raw material costs. Changes in raw material costs are generally passed through to customers by adjustments to selling prices. The following graph shows the Comex average copper price per pound by quarter for the most recent three-year period:



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The following tables compare cost of goods sold and operating expenses as dollar amounts and as a percent of net sales for 2016, 2015, and 2014:

	2016	2015	2014
<i>(In thousands)</i>			
Cost of goods sold	\$ 1,723,499	\$ 1,809,702	\$ 2,043,719
Depreciation and amortization	35,133	34,608	33,735
Selling, general, and administrative expense	137,499	130,358	131,740
Gain on sale of assets	—	(15,376)	(6,259)
Impairment charges	6,778	—	—
Severance	—	3,442	7,296
Operating expenses	<u>\$ 1,902,909</u>	<u>\$ 1,962,734</u>	<u>\$ 2,210,231</u>
	Percent of Net Sales		
	2016	2015	2014
Cost of goods sold	83.9%	86.2%	86.4%
Depreciation and amortization	1.7	1.6	1.4
Selling, general, and administrative expense	6.7	6.2	5.7
Gain on sale of assets	—	(0.7)	(0.3)
Impairment charges	0.3	—	—
Severance	—	0.2	0.3
Operating expenses	<u>92.6%</u>	<u>93.5%</u>	<u>93.5%</u>

The decrease in cost of goods sold in 2016 and 2015 was primarily due to the decrease in the average cost of copper, our principal raw material, largely offset by the increase in sales volume related to businesses acquired during 2015 and 2016. Depreciation and amortization increased in 2016 and 2015 primarily as a result of depreciation and amortization of long-lived assets for businesses acquired.

Selling, general, and administrative expenses increased in 2016, primarily due to (i) incremental expenses of \$8.9 million associated with businesses acquired in 2015 and 2016 and (ii) an increase in employment costs, including incentive compensation and net periodic pension costs, of \$1.6 million. This was partially offset by a reduction in foreign currency exchange losses of \$0.9 million. In addition, there was \$1.9 million of equipment relocation costs and losses on the sale of assets related to the rationalization of Yorkshire Copper Tube (Yorkshire) in 2015. The decrease in 2015 was primarily due to (i) a decrease of \$10.2 million in selling, general, and administrative expenses related to the sale of Primaflow, (ii) lower employment costs, including incentive compensation, of \$5.4 million, and (iii) a decrease of \$1.6 million in agent commissions as a result of lower sales. These decreases were offset by (i) selling, general, and administrative expenses of \$6.6 million associated with businesses acquired in 2015, (ii) higher net periodic pension costs of \$5.1 million, and (iii) increased professional fees of \$1.6 million related to the upgrade of our ERP system. Lastly, during 2014 there was a reduction in accruals related to legal matters of \$0.5 million.

During 2016, we recognized fixed asset impairment charges for certain manufacturing equipment of \$6.8 million.

During 2015, our operating results were positively impacted by a net gain of \$15.4 million recorded on the sale of certain assets. This was offset by \$3.4 million of severance charges related to the rationalization of Yorkshire.

Our operating results in 2014 were positively impacted by a net gain of \$6.3 million recorded for the sale of our plastic pipe manufacturing assets, the land and building in Portage, Michigan, and our United Kingdom based import distribution business. This was offset by \$7.3 million in severance charges related to the rationalization of Yorkshire.

Interest expense decreased slightly in 2016 primarily as a result of decreased borrowing costs at Mueller-Xingrong. This was offset by (i) increased borrowing costs and the amortization of debt issuance costs on our Credit Agreement, (ii) borrowing costs associated with revolving credit arrangements at Jungwoo-Mueller, and (iii) lower capitalized interest. The increase of \$1.9 million in 2015 was a result of additional costs of \$2.3 million due to the terms of our interest rate swap agreements that became effective in January 2015, offset by decreased borrowing costs of \$0.3 million at Mueller-Xingrong to fund working capital.

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Other income, net, was \$0.7 million in 2016 compared to other income, net, of \$2.2 million in 2015 and other expense, net, of \$0.2 million in 2014. The change in 2016 was primarily attributable to higher environmental costs of \$1.2 million. The change in 2015 was primarily related to lower postretirement benefit costs of \$1.4 million, lower environmental costs of \$0.8 million, and higher interest income of \$0.5 million.

Income tax expense was \$48.1 million in 2016, for an effective tax rate of 33.0 percent. This rate was lower than what would be computed using the U.S. statutory federal rate primarily due to reductions for the effect of foreign tax rates lower than the U.S. statutory rate and other foreign adjustments of \$4.1 million, and the U.S. production activities deduction of \$3.1 million. These reductions were partially offset by the provision for state income taxes, net of federal benefit, of \$2.0 million and \$2.2 million of other adjustments.

Income tax expense was \$43.4 million in 2015, for an effective tax rate of 32.9 percent. This rate was lower than what would be computed using the U.S. statutory federal rate primarily due to reductions to the Company's deferred tax liabilities of \$4.2 million resulting from the acquisition of a foreign subsidiary and the U.S. production activities deduction of \$3.5 million. These reductions were partially offset by the provision for state income taxes, net of federal benefit, of \$2.7 million and \$2.3 million of other adjustments.

Income tax expense was \$45.5 million in 2014, for an effective tax rate of 30.7 percent. This rate was lower than what would be computed using the U.S. statutory federal rate primarily due to decreases in valuation allowances of \$5.7 million; the U.S. production activities deduction benefit of \$4.0 million; and the effect of lower foreign tax rates and other foreign adjustments of \$1.1 million. These decreases were partially offset by the provision for state income taxes, net of federal benefit, of \$3.3 million and \$1.2 million of other adjustments.

During 2016, we recognized \$1.9 million of income on our investment in unconsolidated affiliates. This included a gain that resulted from the allocation of the purchase price recorded by our equity method investees, which was offset by restructuring and impairment charges and net losses during the year.

**Piping Systems Segment**

The following table compares summary operating results for 2016, 2015, and 2014 for the businesses comprising our Piping Systems segment:

<i>(In thousands)</i>	2016	2015	2014	Percent Change	
				2016 vs. 2015	2015 vs. 2014
Net sales	\$ 1,429,589	\$ 1,436,689	\$ 1,622,921	(0.5)%	(11.5)%
Operating income	103,886	113,232	118,558	(8.3)	(4.5)

The following are components of changes in net sales compared to the prior year:

	2016 vs. 2015	2015 vs. 2014
Net selling price in core product lines	(10.0)%	(9.8)%
Unit sales volume in core product lines	(1.3)	(1.4)
Acquisitions	11.5	5.6
Dispositions	—	(3.9)
Other	(0.7)	(2.0)
	(0.5)%	(11.5)%

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The decrease in net sales in 2016 was primarily attributable to (i) lower net selling prices of \$144.4 million in the segment's core product lines, primarily copper tube, (ii) lower unit sales volume of \$18.8 million in the segment's core product lines, and (iii) a decrease in sales of \$5.3 million in the segment's non-core product lines. The decrease in net sales resulting from lower net selling prices also reflects the impact of translating net sales of the segment's foreign operations to U.S. dollars, which was approximately \$43.6 million. These decreases were partially offset by (i) \$139.4 million of incremental sales recorded by Great Lakes and (ii) \$22.0 million of sales recorded by Jungwoo-Mueller.

The decrease in net sales during 2015 was primarily due to (i) lower net selling prices of \$158.4 million in the segment's core product lines, primarily copper tube, (ii) the absence of sales of \$57.5 million recorded by Primaflow, (iii) lower unit sales volume of \$23.4 million in the segment's core product lines, and (iv) a decrease in sales of \$37.4 million in the segment's non-core product lines. These decreases were offset by \$90.5 million of sales recorded by Great Lakes.

The following tables compare cost of goods sold and operating expenses as dollar amounts and as a percent of net sales for 2016, 2015, and 2014:

*(In thousands)*

	<u>2016</u>	<u>2015</u>	<u>2014</u>
Cost of goods sold	\$ 1,228,949	\$ 1,245,929	\$ 1,409,581
Depreciation and amortization	22,421	22,559	22,221
Selling, general, and administrative expense	68,218	66,903	71,524
Gain on sale of assets	—	(15,376)	(6,259)
Impairment charges	6,115	—	—
Severance	—	3,442	7,296
	<u>\$ 1,325,703</u>	<u>\$ 1,323,457</u>	<u>\$ 1,504,363</u>
Operating expenses	<u>\$ 1,325,703</u>	<u>\$ 1,323,457</u>	<u>\$ 1,504,363</u>
	<u>Percent of Net Sales</u>		
	<u>2016</u>	<u>2015</u>	<u>2014</u>
Cost of goods sold	86.0%	86.7%	86.9%
Depreciation and amortization	1.5	1.6	1.4
Selling, general, and administrative expense	4.8	4.7	4.4
Gain on sale of assets	—	(1.1)	(0.4)
Impairment charges	0.4	—	—
Severance	—	0.2	0.4
	<u>92.7%</u>	<u>92.1%</u>	<u>92.7%</u>
Operating expenses	<u>92.7%</u>	<u>92.1%</u>	<u>92.7%</u>

The decrease in cost of goods sold in 2016 was primarily due to the decrease in the average cost of copper, largely offset by the increase in sales volume related to businesses acquired during 2015 and 2016. The decrease in 2015 was primarily due to the decrease in the average cost of copper and the decrease in unit sales volume related to businesses disposed, slightly offset by the increase in sales volume related to businesses acquired during 2015. Depreciation and amortization in 2016, 2015, and 2014 was consistent. This was a result of several assets becoming fully depreciated, offset by depreciation and amortization of the long-lived assets acquired at Great Lakes and Jungwoo-Mueller.

Selling, general, and administrative expenses increased for 2016, primarily due to incremental expenses associated with Great Lakes and Jungwoo-Mueller of \$5.7 million. This was offset by a reduction in (i) foreign currency exchange losses of \$0.8 million and (ii) a decrease in employment costs, including incentive compensation, of \$0.3 million. In addition, there was \$1.9 million of equipment relocation costs and losses on the sale of assets related to the rationalization of Yorkshire recognized in 2015. The decrease in 2015 was primarily due to (i) a decrease of \$10.2 million in selling, general, and administrative expenses related to the sale of Primaflow and (ii) a decrease of \$1.5 million in agent commissions as a result of lower sales. These decreases were offset by (i) selling, general, and administrative expenses of \$3.6 million associated with Great Lakes and (ii) higher net periodic pension costs of \$1.9 million. Lastly, during 2014 there was a reduction in accruals related to legal matters of \$0.5 million.

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During 2016, we recognized fixed asset impairment charges for certain manufacturing equipment of \$6.1 million.

During 2015, our operating results were positively impacted by a net gain of \$15.4 million recorded on the sale of certain assets. This was offset by \$3.4 million of severance charges related to the rationalization of Yorkshire.

Our operating results in 2014 were positively impacted by a net gain of \$6.3 million recorded for the sale of our plastic pipe manufacturing assets, the land and building in Portage, Michigan, and our United Kingdom based import distribution business. This was offset by \$7.3 million in severance charges related to the rationalization of Yorkshire.

**Industrial Metals Segment**

The following table compares summary operating results for 2016, 2015, and 2014 for the businesses comprising our Industrial Metals segment:

<i>(In thousands)</i>	2016	2015	2014	Percent Change	
				2016 vs. 2015	2015 vs. 2014
Net sales	\$ 521,060	\$ 567,467	\$ 659,847	(8.2)%	(14.0)%
Operating income	78,168	57,442	72,210	36.1	(20.5)

The following are components of changes in net sales compared to the prior year:

	2016 vs. 2015	2015 vs. 2014
Net selling price in core product lines	(8.0) %	(9.3) %
Unit sales volume in core product lines	(2.6)	(8.8)
Acquisitions & new products	3.5	4.7
Other	(1.1)	(0.6)
	(8.2) %	(14.0) %

The decrease in net sales during 2016 was primarily due to (i) lower net selling prices of \$44.5 million in the segment's core product lines, primarily brass rod, and (ii) lower unit sales volume of \$14.2 million in the segment's core product lines. These decreases were partially offset by \$19.2 million of incremental sales recorded by Sherwood.

The decrease in net sales in 2015 was primarily due to (i) lower net selling prices of \$60.0 million in the segment's core product lines, primarily brass rod and forgings, and (ii) lower unit sales volume of \$56.5 million in the segment's core product lines. These decreases were offset by and \$20.8 million of sales recorded by Sherwood.

The following tables compare cost of goods sold and operating expenses as dollar amounts and as a percent of net sales for 2016, 2015, and 2014:

<i>(In thousands)</i>	2016	2015	2014
Cost of goods sold	\$ 420,905	\$ 491,567	\$ 572,979
Depreciation and amortization	8,162	7,503	6,998
Selling, general, and administrative expense	13,162	10,955	7,660
Impairment charges	663	—	—
Operating expenses	\$ 442,892	\$ 510,025	\$ 587,637

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	Percent of Net Sales		
	2016	2015	2014
Cost of goods sold	80.8%	86.6%	86.8%
Depreciation and amortization	1.6	1.3	1.1
Selling, general, and administrative expense	2.5	2.0	1.2
Impairment charges	0.1	—	—
Operating expenses	<u>85.0%</u>	<u>89.9%</u>	<u>89.1%</u>

The decrease in cost of goods sold in 2016 was primarily related to the decrease in the average cost of copper. The decrease in cost of goods sold in 2015 was primarily due to the decrease in the average cost of copper and the decrease in sales volume in the segment's core product lines, partially offset by the increase in sales volume related to the acquisition of Sherwood. A sharp decline in copper prices during 2015 put pressure on margins of our businesses accounting for inventory on a FIFO basis. Depreciation and amortization increased in 2016 and 2015 as a result of depreciation and amortization of long-lived assets for the Sherwood business and recent capital expenditures. Selling, general, and administrative expenses increased in 2016 primarily due to incremental expenses associated with Sherwood of \$2.7 million, offset by a decrease in net periodic pension costs of \$0.7 million. The increase in 2015 was a result of higher net periodic pension costs of \$3.0 million, as well as incremental selling, general, and administrative expenses of \$1.2 million for Sherwood. This was offset by lower employment costs, including incentive compensation, of \$0.4 million.

During 2016, we recognized fixed asset impairment charges for certain manufacturing equipment of \$0.7 million.

**Climate Segment**

The following table compares summary operating results for 2016, 2015, and 2014 for the businesses comprising our Climate segment:

<i>(In thousands)</i>	2016	2015	2014	Percent Change	
				2016 vs. 2015	2015 vs. 2014
Net sales	\$ 119,758	\$ 110,727	\$ 99,336	8.2%	11.5%
Operating income	17,733	12,459	11,029	42.3	13.0

Net sales for 2016 increased primarily as a result of incremental sales recorded by Turbotec of \$3.5 million and an increase in volume in the segment's other businesses. Net sales for 2015 increased due to \$16.8 million of sales recorded by Turbotec, offset by lower volumes for Refrigeration Products and Fabricated Tube Products.

The following tables compare cost of goods sold and operating expenses as dollar amounts and as a percent of net sales for 2016, 2015, and 2014:

<i>(In thousands)</i>	2016	2015	2014
Cost of goods sold	\$ 89,927	\$ 86,894	\$ 79,099
Depreciation and amortization	2,437	2,257	1,845
Selling, general, and administrative expense	9,661	9,117	7,363
Operating expenses	<u>\$ 102,025</u>	<u>\$ 98,268</u>	<u>\$ 88,307</u>

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	Percent of Net Sales		
	2016	2015	2014
Cost of goods sold	75.1%	78.5%	79.6%
Depreciation and amortization	2.0	2.0	1.9
Selling, general, and administrative expense	8.1	8.2	7.4
<b>Operating expenses</b>	<b>85.2%</b>	<b>88.7%</b>	<b>88.9%</b>

The changes in cost of goods sold in 2016 and 2015 were related to factors consistent with those noted regarding changes in net sales. Depreciation and amortization increased in 2016 and 2015 as a result of depreciation and amortization of long-lived assets for the business acquired at Turbotec. Selling, general, and administrative expenses increased in 2016 and 2015 primarily due to incremental expenses associated with Turbotec of \$0.5 million and \$1.8 million, respectively.

**Liquidity and Capital Resources**

The following table presents selected financial information for 2016, 2015, and 2014:

*(In thousands)*

	2016	2015	2014
Increase (decrease) in:			
Cash and cash equivalents	\$ 76,473	\$ (77,290)	\$ 40,334
Property, plant, and equipment, net	15,007	34,314	1,453
Total debt	11,354	(25,434)	6,111
Working capital, net of cash and current debt	9,781	(59,316)	14,460
Cash provided by operating activities	157,777	159,609	90,605
Cash used in investing activities	(53,057)	(190,807)	(38,424)
Cash used in financing activities	(22,561)	(41,258)	(10,551)

**Cash Provided by Operating Activities**

During 2016, net cash provided by operating activities was primarily attributable to consolidated net income of \$99.8 million plus the addition of non-cash charges to income.

During 2015, net cash provided by operating activities was primarily attributable to consolidated net income of \$88.4 million, depreciation and amortization of \$34.6 million, a decrease in receivables of \$51.7 million, and a decrease in inventories of \$41.1 million. These cash increases were offset by a decrease in current liabilities of \$54.2 million. These changes were primarily due to decreases in the price of copper and an overall decrease in working capital needs.

During 2014, net cash provided by operating activities was primarily attributable to consolidated net income of \$102.5 million and depreciation and amortization of \$34.1 million. These cash increases were offset by increased receivables of \$21.4 million, an increase in other assets of \$23.7 million, and a decrease in other liabilities of \$2.2 million. These changes were primarily due to increased sales volume in certain businesses and additional working capital needs of acquired businesses.

**Cash Used in Investing Activities**

The major components of net cash used in investing activities in 2016 included capital expenditures of \$37.5 million and \$20.5 million for the purchase of a 60.0 percent equity interest in Jungwoo-Mueller, net of cash acquired, and net deposits into restricted cash balances of \$5.3 million. These were offset by \$10.3 million in proceeds from the sale of assets.

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The major components of net cash used in investing activities in 2015 included \$105.9 million for the acquisition of Turbotec, Sherwood, and Great Lakes, \$65.9 million for our investment in MA Industrial JV LLC, the joint venture that acquired Tecumseh Products Company, and capital expenditures of \$28.8 million. These cash decreases were offset by \$5.5 million in proceeds from the sale of certain assets and net withdrawals from restricted cash balances of \$4.3 million.

The major components of net cash used in investing activities in 2014 included \$30.1 million for the acquisition of Yorkshire, capital expenditures of \$39.2 million, and deposits into restricted cash of \$2.9 million. These decreases were partially offset by \$33.8 million proceeds from the sales of assets.

**Cash Used in Financing Activities**

For 2016, net cash used in financing activities consisted primarily of \$21.2 million used for the payment of regular quarterly dividends to stockholders of the Company and \$3.8 million used for payment of dividends to noncontrolling interests. This was partially offset by the issuance of debt of \$3.5 million.

For 2015, net cash used in financing activities consisted primarily of \$23.6 million used for the repayment of debt by Mueller-Xingrong and \$16.9 million used for payment of regular quarterly dividends to stockholders of the Company.

For 2014, net cash used in financing activities consisted primarily of \$16.8 million for payment of regular quarterly dividends to stockholders of the Company, offset by \$7.3 million received for the issuance of debt by Mueller-Xingrong.

**Liquidity and Outlook**

Management believes that cash provided by operations, funds available under the credit agreement, and cash and cash equivalents on hand will be adequate to meet our liquidity needs, including working capital, capital expenditures, and debt payment obligations. Our current ratio was 4.1 to 1 as of December 31, 2016.

As of December 31, 2016, \$73.9 million of our cash and cash equivalents were held by foreign subsidiaries. All earnings of the foreign subsidiaries are considered to be permanently reinvested, and it is not practicable to compute the potential deferred tax liability associated with these undistributed foreign earnings. We believe that cash held domestically, funds available through the credit agreement, and cash generated from U.S. based operations will be adequate to meet the future needs of our U.S. based operations.

Fluctuations in the cost of copper and other raw materials affect the Company's liquidity. Changes in material costs directly impact components of working capital, primarily inventories, accounts receivable, and accounts payable. The price of copper has fluctuated significantly and averaged approximately \$2.20 in 2016, \$2.51 in 2015, and \$3.12 in 2014.

We have significant environmental remediation obligations which we expect to pay over future years. Approximately \$0.7 million was spent during 2016 for environmental matters. As of December 31, 2016, we expect to spend \$0.7 million in 2017, \$0.6 million in 2018, \$0.6 million in 2019, \$0.7 million in 2020, \$0.7 million in 2021, and \$18.6 million thereafter for ongoing projects.

Cash used to fund pension and other postretirement benefit obligations was \$3.4 million in 2016 and \$2.6 million in 2015. We anticipate making contributions of approximately \$2.1 million to these plans in 2017.

The Company declared and paid a quarterly cash dividend of 10.0 cents per common share in the second, third, and fourth quarters of 2016, and 7.5 cents per share for the first quarter of 2016 and each quarter of fiscal 2015 and 2014. Payment of dividends in the future is dependent upon our financial condition, cash flows, capital requirements, and other factors.

On January 25, 2017, we announced a special dividend on our common stock payable on March 9, 2017 to stockholders of record on February 28, 2017. The special dividend will consist of \$3.00 in cash and \$5.00 in principal amount of the Company's 6% Subordinated Debentures due 2027 for each share of common stock (less any applicable withholding tax).

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The Debentures will be subordinated to all other funded debt of the Company and will be callable, in whole or in part, at any time at the option of the Company, subject to declining call premiums during the first five years. The Debentures will also grant each holder of the Debentures the right to require the Company to repurchase such holder's Debentures in the event of a change of control, at declining repurchase premiums during the first five years. Interest will be payable semiannually on September 1 and March 1, commencing September 1, 2017.

The effect of the special dividend will be to decrease stockholders' equity by approximately \$460.0 million, increase long-term debt by approximately \$287.0 million, and decrease cash by approximately \$173.0 million.

**Capital Expenditures**

During 2016 our capital expenditures were \$37.5 million and related primarily to upgrading equipment and implementing new manufacturing technologies in our copper tube mills and the acquisition of a copper tube mill in Cedar City, Utah. We anticipate investing approximately \$25.0-35.0 million for capital expenditures in 2017.

**Long-Term Debt**

On December 6, 2016, the Company entered into a credit agreement (Credit Agreement) providing for an unsecured \$350.0 million revolving credit facility which matures on December 6, 2021. Funds borrowed under the Credit Agreement may be used for working capital purposes and other general corporate purposes. In addition, the Credit Agreement provides a sublimit of \$50.0 million for the issuance of letters of credit, a sublimit of \$25.0 million for loans and letters of credit made in certain foreign currencies, and a swing line loan sublimit of \$15.0 million. Outstanding letters of credit and foreign currency loans reduce borrowing availability under the Credit Agreement. Total borrowings under the Credit Agreement were \$200.0 million at December 31, 2016.

On March 23, 2016, Mueller-Xingrong entered into a new secured revolving credit arrangement with a total borrowing capacity of RMB 150 million (or approximately \$21.7 million). In addition, Mueller-Xingrong occasionally finances working capital through various accounts receivable and bank draft discount arrangements. Borrowings are secured by the real property and equipment and bank draft receivables of Mueller-Xingrong and bear interest at the latest base-lending rate published by the People's Bank of China, which was 4.35 percent as of December 31, 2016. Total borrowings at Mueller-Xingrong were \$7.9 million as of December 31, 2016.

Jungwoo-Mueller has several secured revolving credit arrangements with a total borrowing capacity of KRW 35.7 billion (or approximately \$30.3 million). Borrowings are secured by the real property and equipment of Jungwoo-Mueller and were bearing interest at an average rate of 3.05 percent as of December 31, 2016. Total borrowings at Jungwoo-Mueller were \$12.7 million as of December 31, 2016.

As of December 31, 2016, the Company's total debt was \$227.4 million or 19.5 percent of its total capitalization.

Covenants contained in the Company's financing obligations require, among other things, the maintenance of minimum levels of tangible net worth and the satisfaction of certain minimum financial ratios. As of December 31, 2016, we were in compliance with all of our debt covenants.

**Share Repurchase Program**

The Company's Board of Directors has extended, until October 2017, its authorization to repurchase up to 20 million shares of the Company's common stock through open market transactions or through privately negotiated transactions. The Company has no obligation to repurchase any shares and may cancel, suspend, or extend the time period for the repurchase of shares at any time. Any repurchases will be funded primarily through existing cash and cash from operations. The Company may hold any shares repurchased in treasury or use a portion of the repurchased shares for stock-based compensation plans, as well as for other corporate purposes. From its initial authorization in 1999 through December 31, 2016, the Company had repurchased approximately 4.7 million shares under this authorization.

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**Contractual Cash Obligations**

The following table presents payments due by the Company under contractual obligations with minimum firm commitments as of December 31, 2016:

(In millions)	Total	Payments Due by Year			
		2017	2018-2019	2020-2021	Thereafter
Total debt	\$ 228.3	\$ 13.7	\$ 10.4	\$ 201.7	\$ 2.5
Consulting agreement	0.7	0.7	—	—	—
Operating leases	31.0	7.4	8.9	5.2	9.5
Heavy machinery and equipment commitments	1.7	1.7	—	—	—
Purchase commitments <sup>(1)</sup>	598.4	597.8	0.3	0.3	—
Interest payments <sup>(2)</sup>	28.5	5.8	10.6	12.1	—
<b>Total contractual cash obligations</b>	<b>\$ 888.6</b>	<b>\$ 627.1</b>	<b>\$ 30.2</b>	<b>\$ 219.3</b>	<b>\$ 12.0</b>

(1) The Company has contractual supply commitments for raw materials totaling \$572.6 million at year-end prices; these contracts contain variable pricing based on Comex and the London Metals Exchange. These commitments are for purchases of raw materials that are expected to be consumed in the ordinary course of business.

(2) These payments represent interest on variable-rate debt based on rates in effect at December 31, 2016.

The above obligations will be satisfied with existing cash, funds available under the credit agreement, and cash generated by operations. The Company has no off-balance sheet financing arrangements except for the operating leases identified above.

**Market Risks**

The Company is exposed to market risks from changes in raw material and energy costs, interest rates, and foreign currency exchange rates. To reduce such risks, we periodically use financial instruments. Hedging transactions are authorized and executed pursuant to policies and procedures. Further, we do not buy or sell financial instruments for trading purposes. A discussion of the Company's accounting for derivative instruments and hedging activities is included in "Note 1 - Summary of Significant Accounting Policies" in the Notes to Consolidated Financial Statements.

**Cost and Availability of Raw Materials and Energy**

Raw materials, primarily copper and brass, represent the largest component of the Company's variable costs of production. The cost of these materials is subject to global market fluctuations caused by factors beyond our control. Significant increases in the cost of metal, to the extent not reflected in prices for our finished products, or the lack of availability could materially and adversely affect our business, results of operations and financial condition.

The Company occasionally enters into forward fixed-price arrangements with certain customers. We may utilize futures contracts to hedge risks associated with these forward fixed-price arrangements. We may also utilize futures contracts to manage price risk associated with inventory. Depending on the nature of the hedge, changes in the fair value of the futures contracts will either be offset against the change in fair value of the inventory through earnings or recognized as a component of accumulated other comprehensive income (AOCI) and reflected in earnings upon the sale of inventory. Periodic value fluctuations of the contracts generally offset the value fluctuations of the underlying fixed-price transactions or inventory. At December 31, 2016, we held open futures contracts to purchase approximately \$10.2 million of copper over the next 12 months related to fixed-price sales orders and to sell approximately \$28.7 million of copper over the next three months related to copper inventory.

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We may enter into futures contracts or forward fixed-price arrangements with certain vendors to manage price risk associated with natural gas purchases. The effective portion of gains and losses with respect to positions are deferred in equity as a component of AOCI and reflected in earnings upon consumption of natural gas. Periodic value fluctuations of the futures contracts generally offset the value fluctuations of the underlying natural gas prices. There were no open futures contracts to purchase natural gas at December 31, 2016.

**Interest Rates**

The Company had variable-rate debt outstanding of \$212.2 million at December 31, 2016 and \$216.0 million at December 26, 2015. At these borrowing levels, a hypothetical 10 percent increase in interest rates would have had an insignificant unfavorable impact on our pre-tax earnings and cash flows. The primary interest rate exposures on floating-rate debt are based on LIBOR and the base-lending rate published by the People's Bank of China. There was \$15.2 million of fixed-rate debt outstanding as of December 31, 2016, and no fixed-rate debt outstanding as of December 26, 2015.

Included in the variable-rate debt outstanding is the Company's \$200.0 million Credit Agreement which bears interest based on LIBOR. We have reduced our exposure to increases in LIBOR by entering into interest rate swap contracts. The fair value of these contracts has been recorded in the Consolidated Balance Sheets, and a portion of the related gains and losses on the contracts are deferred in stockholders' equity as a component of AOCI. Deferred gains or losses on the contracts will be recognized in interest expense in the period in which the related interest payment being hedged is expensed. The interest rate swap agreement had an effective date of January 12, 2015.

**Foreign Currency Exchange Rates**

Foreign currency exposures arising from transactions include firm commitments and anticipated transactions denominated in a currency other than an entity's functional currency. The Company and its subsidiaries generally enter into transactions denominated in their respective functional currencies. We may utilize certain futures or forward contracts with financial institutions to hedge foreign currency transactional exposures. Gains and losses with respect to these positions are deferred in equity as a component of AOCI and reflected in earnings upon collection of receivables or payment of commitments. At December 31, 2016, we had open forward contracts with a financial institution to sell approximately 3.2 million euros, 15.6 million Swedish kronor, 7.6 million Norwegian kroner, and 1.2 million U.S. dollars through April 2017.

The Company's primary foreign currency exposure arises from foreign-denominated revenues and profits and their translation into U.S. dollars. The primary currencies to which we are exposed include the Canadian dollar, the British pound sterling, the Mexican peso, the South Korean won, and the Chinese renminbi. The Company generally views its investments in foreign subsidiaries with a functional currency other than the U.S. dollar as long-term. As a result, we generally do not hedge these net investments. The net investment in foreign subsidiaries translated into U.S. dollars using the year-end exchange rates was \$271.6 million at December 31, 2016 and \$249.5 million at December 26, 2015. The potential loss in value of the Company's net investment in foreign subsidiaries resulting from a hypothetical 10 percent adverse change in quoted foreign currency exchange rates at December 31, 2016 and December 26, 2015 amounted to \$27.2 million and \$25.0 million, respectively. This change would be reflected in the foreign currency translation component of AOCI in the equity section of our Consolidated Balance Sheets until the foreign subsidiaries are sold or otherwise disposed.

We have significant investments in foreign operations whose functional currency is the British pound sterling, the Mexican peso, the Canadian dollar, the Chinese renminbi, and the South Korean won. During 2016, the value of the British pound decreased approximately 17 percent, the Mexican peso decreased approximately 16 percent, the Canadian dollar increased approximately three percent, the Chinese renminbi decreased approximately seven percent, and the South Korean won remained consistent, relative to the U.S. dollar. The resulting net foreign currency translation losses were recorded as a component of AOCI.

### **Critical Accounting Policies and Estimates**

The Company's accounting policies are more fully described in "Note 1 - Summary of Significant Accounting Policies" in the Notes to Consolidated Financial Statements. As disclosed in Note 1, the preparation of financial statements in conformity with general accepted accounting principles in the United States requires management to make estimates and assumptions about future events that affect amounts reported in the financial statements and accompanying notes. Actual results could differ significantly from those estimates. Management believes the following discussion addresses our most critical accounting policies, which are those that are most important to the portrayal of the Company's financial condition and results of operations and require management's most difficult, subjective, and complex judgments.

### **Inventory Valuation Reserves**

Our inventories are valued at the lower-of-cost-or-market. The market price of copper cathode and scrap are subject to volatility. During periods when open market prices decline below net realizable value, the Company may need to provide an allowance to reduce the carrying value of its inventory. In addition, certain items in inventory may be considered excess or obsolete and, as such, we may establish an allowance to reduce the carrying value of those items to their net realizable value. Changes in these estimates related to the value of inventory, if any, may result in a materially adverse impact on our reported financial position or results of operations. The Company recognizes the impact of any changes in estimates, assumptions, and judgments in income in the period in which they are determined.

As of December 31, 2016 and December 26, 2015, our inventory valuation reserves were \$6.9 million and \$6.2 million, respectively. The expense recognized in each of these periods was immaterial to our Consolidated Financial Statements.

### **Impairment of Goodwill**

As of December 31, 2016, we had \$124.0 million of recorded goodwill from our business acquisitions, representing the excess of the purchase price over the fair value of the net assets we have acquired. During 2016 we recorded \$0.4 million in additional goodwill associated with our Jungwoo-Mueller acquisition and \$4.1 million in additional goodwill associated with a deferred tax liability resulting from a basis difference in the long-lived assets acquired from Great Lakes.

Goodwill is subject to impairment testing, which is performed annually as of the first day of the fourth quarter unless circumstances indicate the need to accelerate the timing of the tests. These circumstances include a significant change in the business climate, operating performance indicators, competition, or sale or disposition of a significant portion of one of our businesses. In our evaluation of goodwill impairment, we perform a qualitative assessment at the reporting unit level that requires management judgment and the use of estimates to determine if it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If the qualitative assessment is not conclusive, we proceed to a two-step process to test goodwill for impairment. The first step is to compare the fair value of the reporting unit to its carrying value (including attributable goodwill). If this process indicates that the fair value is less than the carrying value, a second step of impairment testing is performed to measure the potential amount of goodwill impairment loss. In step two, we allocate the fair value of the reporting unit determined in step one to its assets and liabilities as if it had just been acquired in a business combination and the purchase price was equivalent to the fair value of the reporting unit. The excess of the fair value of the reporting unit over the amount assigned to its assets and liabilities is referred to as the implied fair value of goodwill. The implied fair value of goodwill is then compared to the actual carrying value of goodwill. If the implied fair value is less than the carrying value, we would be required to recognize an impairment loss for that excess.

We identify reporting units by evaluating components of our operating segments and combining those components with similar economic characteristics. Reporting units with significant recorded goodwill include Domestic Piping Systems, Canadian Operations, European Operations, Jungwoo-Mueller, Westermeyer, and Turbotec.

The fair value of each reporting unit is estimated using a combination of the income and market approaches, incorporating market participant considerations and management's assumptions on revenue growth rates, operating margins, discount rates and expected capital expenditures. Estimates used by management can significantly affect the outcome of the impairment test. Changes in forecasted operating results and other assumptions could materially affect these estimates.

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We evaluated each reporting unit during the fourth quarters of 2016 and 2015, as applicable. The estimated fair value of each of these reporting units exceeded its carrying values in 2016 and 2015, and we do not believe that any of these reporting units were at risk of impairment as of December 31, 2016.

#### **Environmental Reserves**

We recognize an environmental reserve when it is probable that a loss is likely to occur and the amount of the loss is reasonably estimable. We estimate the duration and extent of our remediation obligations based upon reports of outside consultants; internal analyses of cleanup costs; communications with regulatory agencies; and changes in environmental law. If we were to determine that our estimates of the duration or extent of our environmental obligations were no longer accurate, we would adjust our environmental reserve 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 goods sold. Environmental expenses related to non-operating properties are included in other income, net in the Consolidated Statements of Income.

#### **Income Taxes**

We estimate total income tax expense based on domestic and international statutory income tax rates in the tax jurisdictions where we operate, permanent differences between financial reporting and tax reporting, and available credits and incentives.

Deferred income tax assets and liabilities are recognized for the future tax effects of temporary differences between the treatment of certain items for financial statement and tax purposes using tax rates in effect for the years in which the differences are expected to reverse. Realization of certain components of deferred tax assets is dependent upon the occurrence of future events.

Valuation allowances are recorded when, in the opinion of management, it is more likely than not that all or a portion of the deferred tax assets will not be realized. These valuation allowances can be impacted by changes in tax laws, changes to statutory tax rates, and future taxable income levels, and are based on our judgment, estimates, and assumptions. In the event we were to determine that we would not be able to realize all or a portion of the net deferred tax assets in the future, we would increase the valuation allowance through a charge to income tax expense in the period that such determination is made. Conversely, if we were to determine that we would be able to realize our deferred tax assets in the future, in excess of the net carrying amounts, we would decrease the recorded valuation allowance through a decrease to income tax expense in the period that such determination is made.

We record liabilities for known or anticipated tax issues based on our analysis of whether, and the extent to which, additional taxes will be due. These unrecognized tax benefits are retained until the associated uncertainty is resolved. Tax benefits for uncertain tax positions that are recognized in the Consolidated Financial Statements are measured as the largest amount of benefit, determined on a cumulative probability basis, that is more likely than not to be realized upon ultimate settlement. To the extent we prevail in matters for which a liability for an uncertain tax position is established or are required to pay amounts in excess of the liability, our effective tax rate in a given period may be materially affected.

#### **New Accounting Pronouncements**

See "Note 1 – Summary of Significant Accounting Policies" in our Consolidated Financial Statements.

#### **Cautionary Statement Regarding Forward-Looking Information**

This Annual Report contains various forward-looking statements and includes assumptions concerning the Company's operations, future results, and prospects. These forward-looking statements are based on current expectations and are subject to risk and uncertainties, and may be influenced by factors that could cause actual outcomes and results to be materially different from those predicted. The forward-looking statements reflect knowledge and information available as of the date of preparation of the Annual Report, and the Company undertakes no obligation to update these forward-looking statements. We identify the forward-looking statements by using the words "anticipates," "believes," "expects," "intends" or similar expressions in such statements.

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In connection with the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995, the Company provides the following cautionary statement identifying important economic, political, and technological factors, among others, which could cause actual results or events to differ materially from those set forth in or implied by the forward-looking statements and related assumptions. In addition to those factors discussed under "Risk Factors" in this Annual Report on Form 10-K, such factors include: (i) the current and projected future business environment, including interest rates and capital and consumer spending; (ii) the domestic housing and commercial construction industry environment; (iii) availability and price fluctuations in commodities (including copper, natural gas, and other raw materials, including crude oil that indirectly affects plastic resins); (iv) competitive factors and competitor responses to the Company's initiatives; (v) stability of government laws and regulations, including taxes; (vi) availability of financing; and (vii) continuation of the environment to make acquisitions, domestic and foreign, including regulatory requirements and market values of candidates.

**MUELLER INDUSTRIES, INC.**  
**CONSOLIDATED STATEMENTS OF INCOME**  
*Years Ended December 31, 2016, December 26, 2015, and December 27, 2014*

*(In thousands, except per share data)*

	2016	2015	2014
Net sales	\$ 2,055,622	\$ 2,100,002	\$ 2,364,227
Cost of goods sold	1,723,499	1,809,702	2,043,719
Depreciation and amortization	35,133	34,608	33,735
Selling, general, and administrative expense	137,499	130,358	131,740
Gain on sale of assets	—	(15,376)	(6,259)
Impairment charges	6,778	—	—
Severance	—	3,442	7,296
Operating income	152,713	137,268	153,996
Interest expense	(7,387)	(7,667)	(5,740)
Other income (expense), net	704	2,188	(243)
Income before income taxes	146,030	131,789	148,013
Income tax expense	(48,137)	(43,382)	(45,479)
Income from unconsolidated affiliates, net of tax	1,861	—	—
Consolidated net income	99,754	88,407	102,534
Less net income attributable to noncontrolling interests	(27)	(543)	(974)
Net income attributable to Mueller Industries, Inc.	\$ 99,727	\$ 87,864	\$ 101,560
Weighted average shares for basic earnings per share	56,572	56,316	56,042
Effect of dilutive stock-based awards	597	652	726
Adjusted weighted average shares for diluted earnings per share	57,169	56,968	56,768
Basic earnings per share	\$ 1.76	\$ 1.56	\$ 1.81
Diluted earnings per share	\$ 1.74	\$ 1.54	\$ 1.79
Dividends per share	\$ 0.375	\$ 0.300	\$ 0.300

*See accompanying notes to consolidated financial statements.*

**MUELLER INDUSTRIES, INC.**  
**CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME**  
*Years Ended December 31, 2016, December 26, 2015, and December 27, 2014*

<i>(In thousands)</i>	2016	2015	2014
Consolidated net income	\$ 99,754	\$ 88,407	\$ 102,534
Other comprehensive (loss) income, net of tax:			
Foreign currency translation	(27,767)	(19,108)	(6,766)
Net change with respect to derivative instruments and hedging activities <sup>(1)</sup>	1,709	(1,056)	(2,499)
Net change in minimum pension and postretirement obligation adjustments <sup>(2)</sup>	5,383	6,735	(23,006)
Attributable to unconsolidated affiliates <sup>(3)</sup>	5,975	—	—
Other, net	159	(49)	15
Total other comprehensive loss	(14,541)	(13,478)	(32,256)
Consolidated comprehensive income	85,213	74,929	70,278
Comprehensive loss (income) attributable to noncontrolling interests	2,548	867	(822)
Comprehensive income attributable to Mueller Industries, Inc.	\$ 87,761	\$ 75,796	\$ 69,456

*See accompanying notes to consolidated financial statements.*

*(1) Net of taxes of \$(917) in 2016, \$575 in 2015, and \$1,362 in 2014*

*(2) Net of taxes of \$(2,606) in 2016, \$(3,221) in 2015, and \$10,180 in 2014*

*(3) Net of taxes of \$(3,375) in 2016*

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**MUELLER INDUSTRIES, INC.**  
**CONSOLIDATED BALANCE SHEETS**  
*As of December 31, 2016 and December 26, 2015*

(In thousands, except share data)

	2016	2015
<b>Assets</b>		
Current assets:		
Cash and cash equivalents	\$ 351,317	\$ 274,844
Accounts receivable, less allowance for doubtful accounts of \$637 in 2016 and \$623 in 2015	256,291	251,571
Inventories	242,013	239,378
Other current assets	44,702	34,608
<b>Total current assets</b>	<b>894,323</b>	<b>800,401</b>
Property, plant, and equipment, net	295,231	280,224
Goodwill, net	123,993	120,252
Intangible assets, net	36,168	40,636
Investment in unconsolidated affiliates	77,110	65,900
Other noncurrent assets	20,651	31,388
<b>Total Assets</b>	<b>\$ 1,447,476</b>	<b>\$ 1,338,801</b>
<b>Liabilities</b>		
Current liabilities:		
Current portion of debt	\$ 13,655	\$ 11,760
Accounts payable	103,175	88,051
Accrued wages and other employee costs	35,121	35,636
Other current liabilities	67,041	73,982
<b>Total current liabilities</b>	<b>218,992</b>	<b>209,429</b>
Long-term debt, less current portion	213,709	204,250
Pension liabilities	14,890	17,449
Postretirement benefits other than pensions	16,383	17,427
Environmental reserves	21,208	20,943
Deferred income taxes	19,573	7,161
Other noncurrent liabilities	6,284	2,440
<b>Total liabilities</b>	<b>511,039</b>	<b>479,099</b>
<b>Equity</b>		
Mueller Industries, Inc. stockholders' equity:		
Preferred stock - \$1.00 par value; shares authorized 5,000,000; none outstanding	—	—
Common stock - \$.01 par value; shares authorized 100,000,000; issued 80,183,004; outstanding 57,395,209 in 2016 and 57,158,608 in 2015	802	802
Additional paid-in capital	273,345	271,158
Retained earnings	1,141,831	1,063,543
Accumulated other comprehensive loss	(66,956)	(54,990)
Treasury common stock, at cost	(450,338)	(453,228)
<b>Total Mueller Industries, Inc. stockholders' equity</b>	<b>898,684</b>	<b>827,285</b>
Noncontrolling interests	37,753	32,417
<b>Total equity</b>	<b>936,437</b>	<b>859,702</b>
Commitments and contingencies	—	—
<b>Total Liabilities and Equity</b>	<b>\$ 1,447,476</b>	<b>\$ 1,338,801</b>

*See accompanying notes to consolidated financial statements.*

**MUELLER INDUSTRIES, INC.**  
**CONSOLIDATED STATEMENTS OF CASH FLOWS**  
*Years Ended December 31, 2016, December 26, 2015, and December 27, 2014*

<i>(In thousands)</i>	2016	2015	2014
<b>Operating activities:</b>			
Consolidated net income	\$ 99,754	\$ 88,407	\$ 102,534
Reconciliation of net income to net cash provided by operating activities:			
Depreciation	30,827	30,556	30,205
Amortization of intangibles	4,306	4,052	3,530
Amortization of debt issuance costs	569	432	341
Equity in earnings of unconsolidated affiliates	(1,861)	—	—
Stock-based compensation expense	6,387	6,244	6,265
Gain on disposal of assets	(651)	(14,815)	(5,405)
Impairment charges	6,778	—	—
Income tax benefit from exercise of stock options	—	(972)	(837)
Deferred income taxes	6,998	(15,818)	(6,495)
Recovery of doubtful accounts receivable	(50)	(130)	(500)
Changes in assets and liabilities, net of businesses acquired and sold:			
Receivables	(16,502)	51,660	(21,432)
Inventories	6,662	41,086	1,381
Other assets	5,808	12,449	(23,652)
Current liabilities	5,646	(45,585)	5,849
Other liabilities	1,518	436	(2,223)
Other, net	1,588	1,607	1,044
Net cash provided by operating activities	<u>157,777</u>	<u>159,609</u>	<u>90,605</u>
<b>Investing activities:</b>			
Proceeds from sale of assets, net of cash transferred	10,304	5,538	33,788
Acquisition of businesses, net of cash acquired	(20,533)	(105,944)	(30,137)
Capital expenditures	(37,497)	(28,834)	(39,173)
Investment in unconsolidated affiliates	—	(65,900)	—
Net (deposits into) withdrawals from restricted cash balances	(5,331)	4,333	(2,902)
Net cash used in investing activities	<u>(53,057)</u>	<u>(190,807)</u>	<u>(38,424)</u>
<b>Financing activities:</b>			
Dividends paid to stockholders of Mueller Industries, Inc.	(21,224)	(16,903)	(16,819)
Dividends paid to noncontrolling interests	(3,765)	—	—
Issuance of long-term debt	3,500	—	—
Repayments of long-term debt	(1,074)	(1,000)	(1,050)
Issuance (repayment) of debt by joint ventures, net	2,265	(23,567)	7,258
Net cash used to settle stock-based awards	(1,306)	(760)	(777)
Income tax benefit from exercise of stock options	—	972	837
Debt issuance costs	(957)	—	—
Net cash used in financing activities	<u>(22,561)</u>	<u>(41,258)</u>	<u>(10,551)</u>
Effect of exchange rate changes on cash	<u>(5,686)</u>	<u>(4,834)</u>	<u>(1,296)</u>
Increase (decrease) in cash and cash equivalents	76,473	(77,290)	40,334
Cash and cash equivalents at the beginning of the year	<u>274,844</u>	<u>352,134</u>	<u>311,800</u>
Cash and cash equivalents at the end of the year	<u>\$ 351,317</u>	<u>\$ 274,844</u>	<u>\$ 352,134</u>

*See accompanying notes to consolidated financial statements.*

**MUELLER INDUSTRIES, INC.**  
**CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY**  
*Years Ended December 31, 2016, December 26, 2015, and December 27, 2014*

<i>(In thousands)</i>	2016		2015		2014	
	Shares	Amount	Shares	Amount	Shares	Amount
<b>Common stock:</b>						
Balance at beginning of year	80,183	\$ 802	80,183	\$ 802	80,183	\$ 401
Issuance of shares under two-for-one stock split	—	—	—	—	—	401
Balance at end of year	80,183	\$ 802	80,183	\$ 802	80,183	\$ 802
<b>Additional paid-in capital:</b>						
Balance at beginning of year		\$ 271,158		\$ 268,575		\$ 267,142
Issuance of shares under incentive stock option plans		(419)		(1,074)		(1,646)
Stock-based compensation expense		6,387		6,244		6,265
Income tax benefit from exercise of stock options		—		972		837
Issuance of shares under two-for-one stock split		—		—		(401)
Issuance of restricted stock		(3,781)		(3,559)		(3,622)
Balance at end of year		\$ 273,345		\$ 271,158		\$ 268,575
<b>Retained earnings:</b>						
Balance at beginning of year		\$ 1,063,543		\$ 992,798		\$ 908,274
Net income attributable to Mueller Industries, Inc.		99,727		87,864		101,560
Dividends paid or payable to stockholders of Mueller Industries, Inc.		(21,439)		(17,119)		(17,036)
Balance at end of year		\$ 1,141,831		\$ 1,063,543		\$ 992,798
<b>Accumulated other comprehensive (loss) income:</b>						
Balance at beginning of year		\$ (54,990)		\$ (42,923)		\$ (10,819)
Total other comprehensive (loss) income attributable to Mueller Industries, Inc.		(11,966)		(12,067)		(32,104)
Balance at end of year		\$ (66,956)		\$ (54,990)		\$ (42,923)

**MUELLER INDUSTRIES, INC.**  
**CONSOLIDATED STATEMENTS OF CHANGES IN EQUITY**  
**(continued)**

*Years Ended December 31, 2016, December 26, 2015, and December 27, 2014*

<i>(In thousands)</i>	2016		2015		2014	
	Shares	Amount	Shares	Amount	Shares	Amount
<b>Treasury stock:</b>						
Balance at beginning of year	23,024	\$ (453,228)	23,282	\$ (457,102)	23,578	\$ (461,593)
Issuance of shares under incentive stock option plans	(178)	3,499	(149)	2,930	(208)	4,504
Repurchase of common stock	133	(4,389)	84	(2,840)	107	(3,832)
Issuance of restricted stock	(191)	3,780	(193)	3,784	(195)	3,819
Balance at end of year	22,788	\$ (450,338)	23,024	\$ (453,228)	23,282	\$ (457,102)
<b>Noncontrolling interests:</b>						
Balance at beginning of year		\$ 32,417		\$ 33,284		\$ 32,462
Purchase of Jungwoo-Mueller		11,649		—		—
Dividends paid to noncontrolling interests		(3,765)		—		—
Net income attributable to noncontrolling interests		27		543		974
Foreign currency translation		(2,575)		(1,410)		(152)
Balance at end of year		\$ 37,753		\$ 32,417		\$ 33,284

*See accompanying notes to consolidated financial statements.*

*Notes to Consolidated Financial Statements*

**Note 1 – Summary of Significant Accounting Policies**

**Nature of Operations**

The principal business of Mueller Industries, Inc. is the manufacture and sale of copper tube and fittings; line sets; brass and copper alloy rod, bar, and shapes; aluminum and brass forgings; aluminum impact extrusions; plastic fittings and valves; refrigeration valves and fittings; fabricated tubular products; and steel nipples. The Company also resells imported brass and plastic plumbing valves, malleable iron fittings, faucets, and plumbing specialty products. The Company markets its products to the HVAC, plumbing, refrigeration, hardware, and other industries. Mueller's operations are located throughout the United States and in Canada, Mexico, Great Britain, South Korea, and China.

**Fiscal Years**

The Company's fiscal year ends on the last Saturday of December, and consisted of 53 weeks in 2016 and 52 weeks in 2015 and 2014. These dates were December 31, 2016, December 26, 2015, and December 27, 2014.

**Basis of Presentation**

The Consolidated Financial Statements include the accounts of Mueller Industries, Inc. and its majority-owned subsidiaries. The noncontrolling interests represent separate private ownership interests of 49.5 percent of Jiangsu Mueller-Xingrong Copper Industries Limited (Mueller-Xingrong) and 40 percent of Jungwoo Metal Ind. Co., LTD (Jungwoo-Mueller).

**Common Stock Split**

On February 21, 2014, the Company announced a two-for-one stock split of its common stock effected in the form of a stock dividend of one share for each outstanding share. The record date for the stock split was March 14, 2014, and the additional shares were distributed on March 28, 2014. Accordingly, all references to share and per share amounts presented in the Consolidated Financial Statements and this Annual Report on Form 10-K have been adjusted retroactively to reflect the stock split.

**Revenue Recognition**

Revenue is recognized when title and risk of loss pass to the customer, provided collection is determined to be probable and no significant obligations remain for the Company. Estimates for future rebates on certain product lines and product returns are recognized in the period in which the revenue is recorded. The cost of shipping product to customers is expensed as incurred as a component of cost of goods sold.

**Acquisitions**

Accounting for acquisitions requires the Company to recognize separately from goodwill the assets acquired and liabilities assumed at their acquisition date fair values. Goodwill is measured as the excess of the purchase price over the net amount allocated to the identifiable assets acquired and liabilities assumed. While management uses its best estimates and assumptions to accurately value assets acquired and liabilities assumed at the acquisition date, the estimates are inherently uncertain and subject to refinement. As a result, during the measurement period, which may be up to one year from the acquisition date, the Company may record adjustments to the assets acquired and liabilities assumed with the corresponding offset to goodwill. The operating results generated by the acquired businesses are included in the Consolidated Statements of Income from their respective dates of acquisition. Acquisition related costs are expensed as incurred. See "Note 2 – Acquisitions and Dispositions" for additional information.

### **Cash Equivalents**

Temporary investments with original maturities of three months or less are considered to be cash equivalents. These investments are stated at cost. At December 31, 2016 and December 26, 2015, temporary investments consisted of money market mutual funds, commercial paper, bank repurchase agreements, and U.S. and foreign government securities totaling \$40.9 million and \$106.4 million, respectively. Included in other current assets is restricted cash of \$9.0 million and \$3.7 million at December 31, 2016 and December 26, 2015, respectively. These amounts represent required deposits into brokerage accounts that facilitate the Company's hedging activities, deposits that secure certain short-term notes issued under Mueller-Xingrong's credit facility, and for the year ended December 31, 2016, funds received in conjunction with the New Markets Tax Credit transaction; see "Note 10 – New Markets Tax Credit Transaction" for additional information.

### **Allowance for Doubtful Accounts**

The Company provides an allowance for receivables that may not be fully collected. In circumstances where the Company is aware of a customer's inability to meet their financial obligations (e.g., bankruptcy filings or substantial credit rating downgrades), it records an allowance for doubtful accounts against amounts due to reduce the net recognized receivable to the amount it believes most likely will be collected. For all other customers, the Company recognizes an allowance for doubtful accounts based on its 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 their financial obligations), the Company could change its estimate of the recoverability of amounts due by a material amount.

### **Inventories**

The Company's inventories are valued at the lower-of-cost-or-market. The material component of its U.S. copper tube and copper fittings inventories is valued on a LIFO basis. Other manufactured inventories, including the non-material components of U.S. copper tube and copper fittings, are valued on a FIFO basis. Certain inventories purchased for resale are valued on an average cost basis. Elements of cost in finished goods inventory in addition to the cost of material include depreciation, amortization, utilities, maintenance, production wages, and transportation costs.

The market price of copper cathode and scrap is subject to volatility. During periods when open market prices decline below net book value, the Company may need to provide an allowance to reduce the carrying value of its inventory. In addition, certain items in inventory may be considered obsolete and, as such, the Company may establish an allowance to reduce the carrying value of those items to their net realizable value. Changes in these estimates related to the value of inventory, if any, may result in a materially adverse impact on the Company's reported financial position or results of operations. The Company recognizes the impact of any changes in estimates, assumptions, and judgments in income in the period in which it is determined. See "Note 4 – Inventories" for additional information.

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

Property, plant, and equipment is stated at cost less accumulated depreciation. Expenditures for major additions and improvements are capitalized, while minor replacements, maintenance, and repairs are charged to expense as incurred. Depreciation of buildings, machinery, and equipment is provided on the straight-line method over the estimated useful lives ranging from 20 to 40 years for buildings and five to 20 years for machinery and equipment. Leasehold improvements are amortized over the lesser of their useful life or the remaining lease term.

The Company continually evaluates these assets to determine whether events or changes in circumstances have occurred that may warrant revision of the estimated useful life or whether the remaining balance should be evaluated for possible impairment. See "Note 7 – Property, Plant, and Equipment, Net" for additional information.

### **Goodwill**

Goodwill is recognized for the excess of the purchase price over the fair value of tangible and identifiable intangible net assets of businesses acquired. Several factors give rise to goodwill in business acquisitions, such as the expected benefit from synergies of the combination and the existing workforce of the acquired business. Goodwill is evaluated annually for possible impairment as of the first day of the fourth quarter unless circumstances indicate the need to accelerate the timing of the evaluation. In the evaluation of goodwill impairment, management performs a qualitative assessment to determine if it is more likely than not that the fair value of a reporting unit is less than its carrying amount. If the qualitative assessment is not conclusive, management proceeds to a two-step process to test goodwill for impairment, including comparing the fair value of the reporting unit to its carrying value (including attributable goodwill). If this process indicates that the fair value is less than the carrying value, a second step of impairment testing is performed to measure the potential amount of goodwill impairment loss.

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Fair value for the Company's reporting units is determined using a combination of the income and market approaches (level 3 within the fair value hierarchy), incorporating market participant considerations and management's assumptions on revenue growth rates, operating margins, discount rates and expected capital expenditures. The market approach measures the fair value of a business through the analysis of publicly traded companies or recent sales of similar businesses. The income approach uses a discounted cash flow model to estimate the fair value of reporting units based on expected cash flows (adjusted for capital investment required to support operations) and a terminal value. This cash flow stream is discounted to its present value to arrive at a fair value for each reporting unit. Future earnings are estimated using the Company's most recent annual projections, applying a growth rate to future periods. Those projections are directly impacted by the condition of the markets in which the Company's businesses participate. The discount rate selected for the reporting units is generally based on rates of return available for comparable companies at the date of valuation. Fair value determinations may include both internal and third-party valuations. See "Note 8 – Goodwill and Other Intangible Assets" for additional information.

**Investment in Unconsolidated Affiliates**

The Company owns a 50 percent interest in Tecumseh Products Holding LLC (Joint Venture), an unconsolidated affiliate that acquired Tecumseh Products Company (Tecumseh). The Company also owns a 50 percent interest in a second unconsolidated affiliate that provided financing to Tecumseh in conjunction with the acquisition. These investments are recorded using the equity method of accounting, as the Company can exercise significant influence but does not own a majority equity interest or otherwise control the respective entities. Under the equity method of accounting, investments are stated at initial cost and are adjusted for subsequent additional investments and the Company's proportionate share of earnings or losses and distributions.

The Company records its proportionate share of the investee's net income or loss one quarter in arrears as income (loss) from unconsolidated affiliates, net of tax, in the Consolidated Statements of Income. The Company's proportionate share of the investees' other comprehensive income (loss), net of income taxes, is recorded in the Consolidated Statements of Comprehensive Income and Consolidated Statements of Changes in Equity. In general, the equity investment in the unconsolidated affiliates is equal to the current equity investment plus that entity's undistributed earnings.

The investment in unconsolidated affiliates is assessed periodically for impairment and is written down when the carrying amount is not considered fully recoverable. See "Note 9 – Investment in Unconsolidated Affiliates" for additional information.

**Self-Insurance Accruals**

The Company is primarily self-insured for workers' compensation claims and benefits paid under certain employee health care programs. Accruals are primarily based on estimated undiscounted cost of claims, which includes incurred but not reported claims, and are classified as accrued wages and other employee costs.

**Pension and Other Postretirement Benefit Plans**

The Company sponsors several qualified and nonqualified pension and other postretirement benefit plans in the U.S. and certain foreign locations. The Company recognizes the overfunded or underfunded status of the plans as an asset or liability in the Consolidated Balance Sheet with changes in the funded status recorded through comprehensive income in the year in which those changes occur. The obligations for these plans are actuarially determined and affected by assumptions, including discount rates, expected long-term return on plan assets for defined benefit pension plans, and certain employee-related factors, such as retirement age and mortality. The Company evaluates its assumptions periodically and makes adjustments as necessary.

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The expected return on plan assets is determined using the market value of plan assets. Differences between assumed and actual returns are amortized to the market value of assets on a straight-line basis over the average remaining service period of the plan participants using the corridor approach. The corridor approach defers all actuarial gains and losses resulting from variances between actual results and actuarial assumptions. These unrecognized gains and losses are amortized when the net gains and losses exceed 10 percent of the greater of the market value of the plan assets or the projected benefit obligation. The amount in excess of the corridor is amortized over the average remaining service period of the plan participants. For 2016, the average remaining service period for the pension plans was nine years. See "Note 12 –Benefit Plans" for additional information.

**Environmental Reserves and Environmental Expenses**

The Company recognizes an environmental liability when it is probable the liability exists and the amount is reasonably estimable. The Company estimates the duration and extent of its remediation obligations based upon reports of outside consultants; internal analyses of cleanup costs and ongoing monitoring costs; communications with regulatory agencies; and changes in environmental law. If the Company were to determine that its estimates of the duration or extent of its environmental obligations were no longer accurate, it would adjust 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 goods sold. Environmental expenses related to non-operating properties are included in other income, net on the Consolidated Statements of Income. See "Note 13 – Commitments and Contingencies" for additional information.

**Earnings Per Share**

Basic earnings per share is computed based on the weighted average number of common shares outstanding. Diluted earnings per share reflects the increase in weighted average common shares outstanding that would result from the assumed exercise of outstanding stock options and vesting of restricted stock awards calculated using the treasury stock method. Approximately 190 thousand and 427 thousand stock-based awards were excluded from the computation of diluted earnings per share for the years ended December 31, 2016 and December 26, 2015, respectively, because they were antidilutive.

**Income Taxes**

Deferred income tax assets and liabilities are recognized when differences arise between the treatment of certain items for financial statement and tax purposes. Realization of certain components of deferred tax assets is dependent upon the occurrence of future events. The Company records valuation allowances to reduce its deferred tax assets to the amount it believes is more likely than not to be realized. These valuation allowances can be impacted by changes in tax laws, changes to statutory tax rates, and future taxable income levels and are based on the Company's judgment, estimates, and assumptions regarding those future events. In the event the Company was to determine that it would not be able to realize all or a portion of the net deferred tax assets in the future, it would increase the valuation allowance through a charge to income tax expense in the period that such determination is made. Conversely, if it were to determine that it would be able to realize its deferred tax assets in the future, in excess of the net carrying amounts, the Company would decrease the recorded valuation allowance through a decrease to income tax expense in the period that such determination is made.

The Company provides for uncertain tax positions and the related interest and penalties, if any, based upon management's assessment of whether a tax benefit is more likely than not to be sustained upon examination by tax authorities. Tax benefits for uncertain tax positions that are recognized in the financial statements are measured as the largest amount of benefit, determined on a cumulative probability basis, that is more likely than not to be realized upon ultimate settlement. To the extent the Company prevails in matters for which a liability for an uncertain tax position is established or is required to pay amounts in excess of the liability, the Company's effective tax rate in a given financial statement period may be affected.

These estimates are highly subjective and could be affected by changes in business conditions and other factors. Changes in any of these factors could have a material impact on future income tax expense. See "Note 14 – Income Taxes" for additional information.

### **Taxes Collected from Customers and Remitted to Governmental Authorities**

Taxes assessed by a governmental authority that are directly imposed on a revenue producing transaction between the Company and its customers, primarily value added taxes in foreign jurisdictions, are accounted for on a net (excluded from revenues and costs) basis.

### **Stock-Based Compensation**

The Company has in effect stock incentive plans under which stock-based awards have been granted to certain employees and members of its Board of Directors. Stock-based compensation expense is recognized in the Consolidated Statements of Income as a component of selling, general, and administrative expense based on the grant date fair value of the awards. See "Note 16 – Stock-Based Compensation" for additional information.

### **Concentrations of Credit and Market Risk**

Concentrations of credit risk with respect to accounts receivable are limited due to the large number of customers comprising the Company's customer base, and their dispersion across different geographic areas and different industries, including HVAC, plumbing, refrigeration, hardware, automotive, OEMs, and others.

The Company minimizes its exposure to base metal price fluctuations through various strategies. Generally, it prices an equivalent amount of copper raw material, under flexible pricing arrangements it maintains with its suppliers, at the time it determines the selling price of finished products to its customers.

### **Derivative Instruments and Hedging Activities**

The Company's earnings and cash flows are subject to fluctuations due to changes in commodity prices, foreign currency exchange rates, and interest rates. The Company uses derivative instruments such as commodity futures contracts, foreign currency forward contracts, and interest rate swaps to manage these exposures.

All derivatives are recognized in the Consolidated Balance Sheets at their fair value. On the date the derivative contract is entered into, it is either a) designated as a hedge of (i) a forecasted transaction or the variability of cash flow to be paid (cash flow hedge) or (ii) the fair value of a recognized asset or liability (fair value hedge), or b) not designated in a hedge accounting relationship, even though the derivative contract was executed to mitigate an economic exposure, as the Company does not enter into derivative contracts for trading purposes (economic hedge). Changes in the fair value of a derivative that is qualified, designated, and highly effective as a cash flow hedge are recorded in stockholders' equity within accumulated other comprehensive income (AOCI), to the extent effective, until they are reclassified to earnings in the same period or periods during which the hedged transaction affects earnings. Changes in the fair value of a derivative that is qualified, designated, and highly effective as a fair value hedge, along with the gain or loss on the hedged recognized asset or liability that is attributable to the hedged risk, are recorded in current earnings. Changes in the fair value of undesignated derivative instruments executed as economic hedges and the ineffective portion of designated derivative instruments are reported in current earnings.

The Company documents all relationships between derivative instruments and hedged items, as well as the risk-management objective and strategy for undertaking various hedge transactions. This process includes linking all derivatives that are designated as fair value hedges to specific assets and liabilities in the Consolidated Balance Sheets and linking cash flow hedges to specific forecasted transactions or variability of cash flow.

The Company also assesses, both at the hedge's inception and on an ongoing basis, whether the designated derivative instruments that are used in hedging transactions are highly effective in offsetting changes in cash flow or fair values of hedged items. When a derivative is determined not to be highly effective as a hedge or the underlying hedged transaction is no longer probable, hedge accounting is discontinued prospectively in accordance with the derecognition criteria for hedge accounting.

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The Company primarily executes derivative contracts with major financial institutions. These counterparties expose the Company to credit risk in the event of non-performance. The amount of such exposure is limited to the fair value of the contract plus the unpaid portion of amounts due to the Company pursuant to terms of the derivative instruments, if any. If a downgrade in the credit rating of these counterparties occurs, management believes that this exposure is mitigated by provisions in the derivative arrangements which allow for the legal right of offset of any amounts due to the Company from the counterparties with any amounts payable to the counterparties by the Company. As a result, management considers the risk of loss from counterparty default to be minimal. See "Note 6 – Derivative Instruments and Hedging Activities" for additional information.

#### **Fair Value of Financial Instruments**

The carrying amounts for cash and cash equivalents, accounts receivable, and accounts payable approximate fair value due to the short-term maturity of these instruments.

The fair value of long-term debt at December 31, 2016 approximates the carrying value on that date. The estimated fair values were determined based on quoted market prices and the current rates offered for debt with similar terms and maturities. The fair value of long-term debt is classified as level 2 within the fair value hierarchy. This classification is defined as a fair value determined using market-based inputs other than quoted prices that are observable for the liability, either directly or indirectly. Outstanding borrowings have variable interest rates that re-price frequently at current market rates.

#### **Foreign Currency Translation**

For foreign subsidiaries in which the functional currency is not the U.S. dollar, balance sheet accounts are translated at exchange rates in effect at the end of the year and income statement accounts are translated at average exchange rates for the year. Translation gains and losses are included in equity as a component of AOCI. Included in the Consolidated Statements of Income were transaction gains of \$0.4 million in 2016, losses of \$1.7 million in 2015, and gains of \$0.1 million in 2014.

#### **Use of and Changes in Estimates**

The preparation of financial statements in conformity with generally accepted accounting principles in the United States (U.S. GAAP) requires management to make estimates, assumptions, and judgments that affect the amounts reported in the financial statements and accompanying notes. Management makes its best estimate of the ultimate outcome for these items based on historical trends and other information available when the financial statements are prepared. Changes in estimates are recognized in accordance with the accounting rules for the estimate, which is typically in the period when new information becomes available to management. Areas where the nature of the estimate makes it reasonably possible that actual results could materially differ from amounts estimated include but are not limited to: pension and other postretirement benefit plan obligations, tax liabilities, loss contingencies, litigation claims, environmental reserves, and impairment assessments on long-lived assets (including goodwill).

#### **Change in Segment Reporting**

At the beginning of fiscal year 2016, the Company made changes to its management reporting structure as a result of a change in the way the Chief Executive Officer, who serves as the Chief Operating Decision Maker, manages and evaluates the business, makes key operating decisions, and allocates resources. Previously, the Company had two reportable segments: Plumbing & Refrigeration and OEM. During 2016, the Company realigned its operating segments into three reportable segments: Piping Systems, Industrial Metals, and Climate. Management has recast certain prior year amounts to conform to the current year presentation. See "Note 3 - Segment Information" for additional information.

#### **Recently Adopted Accounting Standards**

In March 2016, the Financial Accounting Standards Board (FASB) issued Accounting Standards Update (ASU) No. 2016-09, *Compensation – Stock Compensation (Topic 718): Improvement to Employee Share-Based Payment Accounting*. The ASU requires all income tax effects of awards to be recognized in the income statement when the awards vest or are settled. It also allows a company to make a policy election to account for forfeitures as they occur. The guidance is effective for public business entities in interim and fiscal periods beginning after December 15, 2016. Early adoption is permitted, but all of the guidance must be adopted in the same period.

The Company elected to adopt this standard effective December 27, 2015 on a prospective basis. The impact of the adoption of this standard was as follows:

- Approximately \$0.9 million of excess tax benefits were recorded through income tax expense as a discrete item for the year ended December 31, 2016.
- Excess tax benefits were combined with other income tax cash flows within operating cash flows rather than as a financing activity.
- The Company has elected to change its current policy of estimating forfeitures to a policy of recognizing forfeitures as they occur.

In August 2014, the FASB issued ASU No. 2014-15, *Presentation of Financial Statements – Going Concern (Topic 205-40): Disclosure of Uncertainties about an Entity's Ability to Continue as a Going Concern* (ASU 2014-15). The ASU requires management to evaluate relevant conditions, events, and certain management plans that are known or reasonably knowable as of the evaluation date when determining whether substantial doubt about an entity's ability to continue as a going concern exists. If conditions or events raise substantial doubt about an entity's ability to continue as a going concern, the entity is required to make certain disclosures. The guidance is effective for annual periods ending after December 15, 2016. The Company adopted ASU 2014-15 effective December 31, 2016 and the adoption had no impact on the Consolidated Financial Statements and related disclosures.

#### **Recently Issued Accounting Standards**

In November 2016, the FASB issued ASU No. 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash*. The ASU requires entities to show the changes in the total of cash, cash equivalents, restricted cash, and restricted cash equivalents in the statement of cash flows. As a result, entities will no longer present transfers between cash and cash equivalents and restricted cash and restricted cash equivalents in the statement of cash flows. The guidance will be applied retrospectively and is effective for public business entities in interim and fiscal periods beginning after December 15, 2017. Early adoption is permitted. The Company does not expect the adoption of the standard to have a material impact on its Consolidated Financial Statements.

In October 2016, the FASB issued ASU No. 2016-16, *Income Taxes (Topic 740): Intra-Entity Transfers of Assets Other Than Inventory* (ASU 2016-16). The ASU requires companies to account for the income tax effects of intercompany transfers of assets other than inventory when the transfer occurs. Companies will still be required to defer the income tax effects of intercompany inventory transactions in an exception to the income tax accounting guidance. The guidance is effective for public business entities in annual periods beginning after December 15, 2017. Early adoption is permitted as of the beginning of an annual period. The Company is still evaluating the effects that the provisions of ASU 2016-16 will have on its Consolidated Financial Statements.

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)* (ASU 2016-02). The ASU requires an entity to recognize a right-of-use asset and lease liability for all leases with terms of more than 12 months. Recognition, measurement and presentation of expenses will depend on classification as a financing or operating lease. The amendments also require certain quantitative and qualitative disclosures about leasing arrangements. The ASU will be effective for interim and fiscal periods beginning after December 15, 2018. Early adoption is permitted. The updated guidance requires a modified retrospective adoption. The Company is still evaluating the effects that the provision of ASU 2016-02 will have on its Consolidated Financial Statements.

In May 2014, the FASB issued ASU No. 2014-09, *Revenue from Contracts with Customers (Topic 606)* (ASU 2014-09). The ASU will supersede virtually all existing revenue recognition guidance under U.S. GAAP and will be effective for annual reporting periods beginning after December 15, 2017. The fundamental principles of the new guidance are that companies should recognize revenue in a manner that reflects the timing of the transfer of services to customers and the amount of revenue recognized reflects the consideration that a company expects to receive for the goods and services provided. The new guidance establishes a five-step approach for the recognition of revenue. The Company is in the process of evaluating the impact of ASU 2014-09 on its Consolidated Financial Statements.

## **Note 2 – Acquisitions and Dispositions**

### **2016 Acquisition**

On April 26, 2016, the Company entered into an agreement providing for the purchase of a 60 percent equity interest in Jungwoo-Mueller for approximately \$20.5 million in cash. Jungwoo-Mueller, which manufactures copper-based pipe joining products, is headquartered in Seoul, South Korea and serves markets worldwide. This business complements the Company's existing copper fittings businesses in the Piping Systems segment and is reported in the Company's Consolidated Financial Statements one month in arrears.

### **2015 Acquisitions**

#### **Great Lakes Copper**

On July 31, 2015, the Company entered into a Share Purchase Agreement with Great Lakes Copper, Inc. providing for the purchase of all of the outstanding shares of Great Lakes Copper Ltd. (Great Lakes) for \$70.0 million in cash, including a \$1.5 million post-closing working capital adjustment. Great Lakes manufactures copper tube products in Canada. This acquisition complements the Company's existing copper tube businesses in the Piping Systems segment.

#### **Sherwood Valve Products**

On June 18, 2015, the Company entered into a Membership Interest Purchase Agreement with Sherwood Valve Products, LLC (Sherwood) providing for the purchase of all of the outstanding equity interests of Sherwood for \$21.8 million in cash, net of a post-closing working capital adjustment. Sherwood manufactures valves and fluid control solutions for the HVAC, refrigeration, and compressed gas markets. The acquisition of Sherwood complements our existing compressed gas business in the Industrial Metals segment.

#### **Turbotec Products, Inc.**

On March 30, 2015, the Company entered into a Stock Purchase Agreement with Turbotec Products, Inc. (Turbotec) providing for the purchase of all of the outstanding capital stock of Turbotec for approximately \$14.1 million in cash, net of a post-closing working capital adjustment. Turbotec manufactures coaxial heat exchangers and twisted tubes for the heating, ventilation, and air-conditioning (HVAC), geothermal, refrigeration, swimming pool heat pump, marine, ice machine, commercial boiler, and heat reclamation markets. The acquisition of Turbotec complements the Company's existing refrigeration business, a component of the Climate segment.

### **2014 Acquisition**

#### **Yorkshire Copper Tube**

On February 28, 2014, the Company entered into a definitive agreement with KME Yorkshire Limited to acquire certain assets and assume certain liabilities of its copper tube business. Yorkshire Copper Tube (Yorkshire) produces European standard copper distribution tubes. The purchase price was approximately \$30.1 million, paid in cash. The acquisition of Yorkshire complements the Company's existing copper tube businesses in the Piping Systems segment.

These acquisitions were accounted for using the acquisition method of accounting whereby the total purchase price was allocated to tangible and intangible assets acquired and liabilities assumed based on respective fair values.

The following table summarizes the allocation of the purchase price to acquire these businesses, which was financed by available cash balances, as well as the assets acquired and liabilities assumed at the respective acquisition dates. The purchase price allocation for Jungwoo-Mueller is provisional as of December 31, 2016 and subject to change upon completion of the final valuation of the long-lived assets during the measurement period. During 2016, the valuation of the Great Lakes acquisition was finalized and a deferred tax liability of \$4.1 million was recorded that resulted from a basis difference in the long-lived assets acquired. This resulted in an increase in goodwill.

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<i>(in thousands)</i>	<u>Jungwoo-Mueller</u>	<u>Great Lakes</u>	<u>Sherwood</u>	<u>Turbotec</u>	<u>Yorkshire</u>
Total consideration	\$ 20,533	\$ 70,011	\$ 21,795	\$ 14,138	\$ 30,137
Allocated to:					
Accounts receivable	5,551	26,079	6,490	1,936	—
Inventories	17,616	15,233	11,892	3,247	17,579
Other current assets	1,437	22	260	72	1,034
Property, plant, and equipment	24,191	22,771	10,327	9,080	2,103
Goodwill	442	23,208 <sup>(1)</sup>	—	2,088	8,075 <sup>(1)</sup>
Intangible assets	756	27,468	(38)	880	16,937
Other assets	58	1,413	—	59	—
Total assets acquired	<u>50,051</u>	<u>116,194</u>	<u>28,931</u>	<u>17,362</u>	<u>45,728</u>
Accounts payable	7,252	36,026	6,022	1,603	10,188
Accrued wages & other employee costs	—	—	471	356	1,167
Other current liabilities	577	381	487	51	4,236
Long-term debt	8,659	—	—	—	—
Pension and other postretirement liabilities	799	5,655	—	—	—
Other noncurrent liabilities	582	4,121	156	1,214	—
Total liabilities assumed	<u>17,869</u>	<u>46,183</u>	<u>7,136</u>	<u>3,224</u>	<u>15,591</u>
Noncontrolling interest	<u>11,649</u>	<u>—</u>	<u>—</u>	<u>—</u>	<u>—</u>
Net assets acquired	<u>\$ 20,533</u>	<u>\$ 70,011</u>	<u>\$ 21,795</u>	<u>\$ 14,138</u>	<u>\$ 30,137</u>

<sup>(1)</sup> Tax-deductible goodwill

The fair value of the noncontrolling interest at Jungwoo-Mueller was determined based on the proportionate share of consideration transferred and adjusted for lack of control and marketability based on the average of the classic put option model and the Finnerty Formula.

The following details the total intangible assets identified in the allocation of the purchase price at the respective acquisition dates:

<i>(in thousands)</i>	<u>Estimated Useful Life</u>	<u>Jungwoo-Mueller</u>	<u>Great Lakes</u>	<u>Turbotec</u>	<u>Yorkshire</u>
Intangible asset type:					
Customer relationships	20 years	\$ —	\$ 20,273	\$ 350	\$ 10,699
Non-compete agreements	3-5 years	—	2,269	90	4,504
Patents and technology	10-15 years	756	3,104	220	—
Trade names and licenses	5-10 years	—	2,453	220	1,055
Other	2-5 years	—	(631)	—	679
Total intangible assets		<u>\$ 756</u>	<u>\$ 27,468</u>	<u>\$ 880</u>	<u>\$ 16,937</u>

### 2015 Disposition

On June 1, 2015, the Company sold certain assets. Simultaneously, the Company entered into a lease agreement with the purchaser of the assets for their continued use for a period of approximately 22 months (Lease Period).

The total sales price was \$20.2 million, of which \$5.0 million was received on June 1, 2015 and \$5.0 million was received on December 30, 2016; the remaining \$10.2 million will be received at the end of the Lease Period. This transaction resulted in a pre-tax gain of \$15.4 million in the second quarter of 2015, or 17 cents per diluted share after tax. This gain was recognized in the Piping Systems segment.

The net book value of the assets disposed was \$2.3 million. For goodwill testing purposes, these assets were part of the Domestic Piping Systems (DPS) reporting unit, which is a component of the Company's Piping Systems segment. Because these assets met the definition of a business, \$2.4 million of the DPS reporting unit's goodwill balance was allocated to the disposal group based on the relative fair values of the asset group that was disposed and the portion of the DPS reporting unit that was retained.

### 2014 Dispositions

On November 21, 2014, the Company entered into a Share Purchase Agreement with Travis Perkins PLC to sell all of the outstanding capital stock of Mueller Primaflow Limited (Primaflow), the Company's United Kingdom based plumbing and heating systems import distribution business, for approximately \$24.9 million. Primaflow, which serves markets in the United Kingdom and Ireland, was included in the Piping Systems segment and reported net sales of \$57.5 million and after-tax net income of \$4.4 million for the 2014 fiscal year. The carrying value of the assets disposed totaled \$25.3 million, consisting primarily of accounts receivable and inventories. The carrying value of the liabilities disposed totaled \$7.1 million, consisting primarily of accounts payable and other current liabilities. In addition, the Company recognized a cumulative translation loss of \$6.0 million. The net gain on the sale of this business was immaterial to the Consolidated Financial Statements.

During November 2014, the Company sold its ABS plastic pipe manufacturing assets. These assets had a carrying value of approximately \$1.9 million and were part of the DPS reporting unit, which is a component of the Piping Systems segment. The sales price was \$6.0 million, which resulted in a pre-tax gain of \$4.1 million.

### Note 3 –Segment Information

The Company's reportable segments are Piping Systems, Industrial Metals, and Climate. Each of the reportable segments is composed of certain operating segments that are aggregated primarily by the nature of products offered as follows:

#### Piping Systems

Piping Systems is composed of the following operating segments: DPS, Canadian Operations, European Operations, Trading Group, Mueller-Xingrong (the Company's Chinese joint venture), and Jungwoo-Mueller (the Company's South Korean joint venture). DPS manufactures copper tube and fittings, plastic fittings, and line sets. These products are manufactured in the U.S., sold in the U.S., and exported to markets worldwide. Outside the U.S., the Canadian Operations manufacture copper tube and line sets and sell the products primarily in the U.S. and Canada, and the European Operations manufacture copper tube in the U.K. which is sold primarily in Europe. The Trading Group manufactures pipe nipples and imports and resells brass and plastic plumbing valves, malleable iron fittings, faucets, and plumbing specialty products in the U.S. and Mexico. Mueller-Xingrong manufactures engineered copper tube primarily for air-conditioning applications in China. Jungwoo-Mueller manufactures copper-based joining products that are sold worldwide. The Piping Systems segment's products are sold primarily to plumbing, refrigeration, and air-conditioning wholesalers, hardware wholesalers and co-ops, building product retailers, and air-conditioning original equipment manufacturers (OEMs).

During 2016, the segment recognized impairment charges of \$6.1 million on fixed assets used for product development.

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The segment recognized approximately \$3.4 million of severance costs related to the reorganization of Yorkshire during 2015, compared to \$7.3 million in 2014. The Company does not expect to incur further severance costs for the rationalization of the business.

**Industrial Metals**

Industrial Metals is composed of the following operating segments: Brass Rod & Copper Bar Products, Impacts & Micro Gauge, and Brass Value-Added Products. These businesses manufacture brass rod, impact extrusions, and forgings, as well as a wide variety of end products including plumbing brass, automotive components, valves, fittings, and gas assemblies. These products are manufactured in the U.S. and sold primarily to OEMs in the U.S., many of which are in the industrial, construction, heating, ventilation, and air-conditioning, plumbing, and refrigeration markets.

During 2016, the segment recognized impairment charges of \$0.7 million on fixed assets related to the rationalization of Sherwood.

**Climate**

Climate is composed of the following operating segments: Refrigeration Products, Fabricated Tube Products, Westermeyer, and Turbotec. These domestic businesses manufacture and fabricate valves, assemblies, high pressure components, and coaxial heat exchangers primarily for the heating, ventilation, air-conditioning, and refrigeration markets in the U.S.

Performance of segments is generally evaluated by their operating income. Summarized product line, geographic, and segment information is shown in the following tables. Geographic sales data indicates the location from which products are shipped. Unallocated expenses include general corporate expenses, plus certain charges or credits not included in segment activity.

During 2016, 2015, and 2014, no single customer exceeded 10 percent of worldwide sales.

**Net Sales by Major Product Line:**

<i>(In thousands)</i>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Tube and fittings	\$ 1,072,242	\$ 1,053,761	\$ 1,143,164
Brass rod and forgings	371,237	436,456	556,985
OEM components, tube & assemblies	327,327	342,651	345,991
Valves and plumbing specialties	209,217	198,012	262,504
Other	75,599	69,122	55,583
	<u>\$ 2,055,622</u>	<u>\$ 2,100,002</u>	<u>\$ 2,364,227</u>

**Geographic Information:**

<i>(In thousands)</i>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Net sales:			
United States	\$ 1,400,893	\$ 1,519,456	\$ 1,752,548
United Kingdom	197,039	240,823	326,832
Canada	237,162	97,967	9,807
Asia	149,875	162,664	194,495
Mexico	70,653	79,092	80,545
	<u>\$ 2,055,622</u>	<u>\$ 2,100,002</u>	<u>\$ 2,364,227</u>

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**Geographic information (continued):**

<i>(In thousands)</i>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Long-lived assets:			
United States	\$ 223,099	\$ 223,398	\$ 203,522
United Kingdom	15,978	19,982	21,766
Canada	18,928	20,460	—
Asia	36,722	15,863	19,765
Mexico	504	521	857
	<u>\$ 295,231</u>	<u>\$ 280,224</u>	<u>\$ 245,910</u>

Summarized segment information is as follows:

<u>For the Year Ended December 31, 2016</u>					
<i>(In thousands)</i>	<u>Piping Systems</u>	<u>Industrial Metals</u>	<u>Climate</u>	<u>Corporate and Eliminations</u>	<u>Total</u>
Net sales	\$ 1,429,589	\$ 521,060	\$ 119,758	\$ (14,785)	\$ 2,055,622
Cost of goods sold	1,228,949	420,905	89,927	(16,282)	1,723,499
Depreciation and amortization	22,421	8,162	2,437	2,113	35,133
Selling, general, and administrative expense	68,218	13,162	9,661	46,458	137,499
Impairment charges	6,115	663	—	—	6,778
Operating income	103,886	78,168	17,733	(47,074)	152,713
Interest expense					(7,387)
Other income, net					704
Income before income taxes					<u>\$ 146,030</u>

<u>For the Year Ended December 26, 2015</u>					
<i>(In thousands)</i>	<u>Piping Systems</u>	<u>Industrial Metals</u>	<u>Climate</u>	<u>Corporate and Eliminations</u>	<u>Total</u>
Net sales	\$ 1,436,689	\$ 567,467	\$ 110,727	\$ (14,881)	\$ 2,100,002
Cost of goods sold	1,245,929	491,567	86,894	(14,688)	1,809,702
Depreciation and amortization	22,559	7,503	2,257	2,289	34,608
Selling, general, and administrative expense	66,903	10,955	9,117	43,383	130,358
Gain on sale of assets	(15,376)	—	—	—	(15,376)
Severance	3,442	—	—	—	3,442
Operating income	113,232	57,442	12,459	(45,865)	137,268
Interest expense					(7,667)
Other income, net					2,188
Income before income taxes					<u>\$ 131,789</u>

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Segment information (continued):

	For the Year Ended December 27, 2014				
<i>(In thousands)</i>	<u>Piping Systems</u>	<u>Industrial Metals</u>	<u>Climate</u>	<u>Corporate and Eliminations</u>	<u>Total</u>
Net sales	\$ 1,622,921	\$ 659,847	\$ 99,336	\$ (17,877)	\$ 2,364,227
Cost of goods sold	1,409,581	572,979	79,099	(17,940)	2,043,719
Depreciation and amortization	22,221	6,998	1,845	2,671	33,735
Selling, general, and administrative expense	71,524	7,660	7,363	45,193	131,740
Gain on sale of assets	(6,259)	—	—	—	(6,259)
Severance	7,296	—	—	—	7,296
Operating income	118,558	72,210	11,029	(47,801)	153,996
Interest expense					(5,740)
Other expense, net					(243)
Income before income taxes					\$ 148,013
<i>(In thousands)</i>			<u>2016</u>	<u>2015</u>	<u>2014</u>
Expenditures for long-lived assets (including those resulting from business acquisitions):					
Piping Systems			\$ 56,286	\$ 41,900	\$ 30,727
Industrial Metals			3,302	16,603	7,965
Climate			2,045	12,373	2,183
General Corporate			55	136	401
			<u>\$ 61,688</u>	<u>\$ 71,012</u>	<u>\$ 41,276</u>
Segment assets:					
Piping Systems			\$ 826,663	\$ 811,343	\$ 786,229
Industrial Metals			160,478	153,102	159,572
Climate			66,968	61,672	38,268
General Corporate			393,367	312,684	344,027
			<u>\$ 1,447,476</u>	<u>\$ 1,338,801</u>	<u>\$ 1,328,096</u>

**Note 4 – Inventories**

<i>(In thousands)</i>	<u>2016</u>	<u>2015</u>
Raw materials and supplies	\$ 57,387	\$ 58,987
Work-in-process	42,227	25,161
Finished goods	149,288	161,410
Valuation reserves	(6,889)	(6,180)
Inventories	<u>\$ 242,013</u>	<u>\$ 239,378</u>

Inventories valued using the LIFO method totaled \$14.4 million at December 31, 2016 and \$27.6 million at December 26, 2015. At December 31, 2016 and December 26, 2015, the approximate FIFO cost of such inventories was \$76.6 million and \$80.7 million, respectively. Additionally, the Company values certain inventories purchased for resale on an average cost basis. The value of those inventories was \$43.8 million at December 31, 2016 and \$48.8 million at December 26, 2015.

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During 2016, inventory quantities valued using the LIFO method declined, which resulted in liquidation of LIFO inventory layers. This liquidation resulted primarily from intercompany sales; therefore \$2.5 million of the \$3.3 million loss related to the LIFO liquidation was deferred. The deferred loss will increase cost of goods sold in the first quarter of 2017 when the inventory is sold to third parties.

At the end of 2016 and 2015, the FIFO value of inventory consigned to others was \$2.5 million and \$3.7 million, respectively.

**Note 5 – Consolidated Financial Statement Details**

**Other Current Liabilities**

Included in other current liabilities were accrued discounts and allowances of \$40.4 million at December 31, 2016 and \$46.6 million at December 26, 2015 and taxes payable of \$4.6 million at December 31, 2016 and \$10.3 million at December 26, 2015.

**Other (Expense) Income, Net**

<i>(In thousands)</i>	2016	2015	2014
Interest income	\$ 1,185	\$ 1,029	\$ 573
Environmental expense, non-operating properties	(1,279)	(46)	(822)
Other	798	1,205	6
Other income (expense), net	<u>\$ 704</u>	<u>\$ 2,188</u>	<u>\$ (243)</u>

**Note 6 – Derivative Instruments and Hedging Activities**

The Company's earnings and cash flows are subject to fluctuations due to changes in commodity prices, foreign currency exchange rates, and interest rates. The Company uses derivative instruments such as commodity futures contracts, foreign currency forward contracts, and interest rate swaps to manage these exposures.

**Commodity Futures Contracts**

Copper and brass represent the largest component of the Company's variable costs of production. The cost of these materials is subject to global market fluctuations caused by factors beyond the Company's control. The Company occasionally enters into forward fixed-price arrangements with certain customers; the risk of these arrangements is generally managed with commodity futures contracts. These futures contracts have been designated as cash flow hedges.

At December 31, 2016, the Company held open futures contracts to purchase approximately \$10.2 million of copper over the next 12 months related to fixed price sales orders. The fair value of those futures contracts was a \$0.8 million net gain position, which was determined by obtaining quoted market prices (level 1 within the fair value hierarchy). In the next twelve months, the Company will reclassify into earnings realized gains or losses relating to cash flow hedges. At December 31, 2016, this amount was approximately \$0.3 million of deferred net gains, net of tax.

The Company may also enter into futures contracts to protect the value of inventory against market fluctuations. At December 31, 2016, the Company held open futures contracts to sell approximately \$28.7 million of copper over the next three months related to copper inventory. The fair value of those futures contracts was a \$0.3 million net loss position, which was determined by obtaining quoted market prices (level 1 within the fair value hierarchy).

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**Interest Rate Swap**

On February 20, 2013, the Company entered into a two-year forward-starting interest rate swap agreement with an effective date of January 12, 2015, and an underlying notional amount of \$200.0 million, pursuant to which the Company receives variable interest payments based on one-month LIBOR and pays fixed interest at a rate of 1.4 percent. Based on the Company's current variable premium pricing on its revolving credit facility, the all-in fixed rate is 2.49 percent. The interest rate swap will mature on December 11, 2017, and is structured to offset the interest rate risk associated with the Company's floating-rate, LIBOR-based revolving credit facility. The swap was designated and accounted for as a cash flow hedge at inception. During the fourth quarter of 2016 the Company discontinued hedge accounting prospectively.

The fair value of the interest rate swap is estimated based on the present value of the difference between expected cash flows calculated at the contracted interest rate and the expected cash flows at the current market interest rate using observable benchmarks for LIBOR forward rates at the end of the period (level 2 within the fair value hierarchy). Interest payable and receivable under the swap agreement is accrued and recorded as an adjustment to interest expense. The fair value of the interest rate swap was a \$0.8 million loss position recorded in other current liabilities at December 31, 2016, and there was \$0.6 million of deferred net losses, net of tax, included in AOCI that are expected to be reclassified into interest expense over the term of the interest rate swap.

The Company presents its derivative assets and liabilities in the Consolidated Balance Sheets on a net basis by counterparty. The following table summarizes the location and fair value of the derivative instruments and disaggregates the net derivative assets and liabilities into gross components on a contract-by-contract basis:

<i>(In thousands)</i>	Asset Derivatives			Liability Derivatives		
	Balance Sheet Location	Fair Value		Balance Sheet Location	Fair Value	
		2016	2015		2016	2015
Hedging instrument:						
Commodity contracts - gains	Other current assets	\$ 1,013	\$ 60	Other current liabilities	\$ 564	\$ 238
Commodity contracts - losses	Other current assets	(148)	—	Other current liabilities	(920)	(1,864)
Interest rate swap	Other current assets	—	—	Other current liabilities	(787)	—
Interest rate swap	Other assets	—	—	Other liabilities	—	(1,692)
Total derivatives (1)		<u>\$ 865</u>	<u>\$ 60</u>		<u>\$ (1,143)</u>	<u>\$ (3,318)</u>

(1) Does not include the impact of cash collateral provided to counterparties

The following tables summarize the effects of derivative instruments on the Consolidated Statements of Income:

<i>(In thousands)</i>	Location	2016	2015
Fair value hedges:			
(Loss) gain on commodity contracts (qualifying)	Cost of goods sold	\$ (420)	\$ 3,374
Gain (loss) on hedged item - Inventory	Cost of goods sold	382	(3,665)
Undesignated derivatives:			
Gain on commodity contracts (nonqualifying)	Cost of goods sold	\$ 4,068	\$ 3,474

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The following tables summarize amounts recognized in and reclassified from AOCI during the period:

<i>(In thousands)</i>	Year Ended December 31, 2016		
	Gain (Loss) Recognized in AOCI (Effective Portion), Net of Tax	Classification Gains (Losses)	Loss (Gain) Reclassified from AOCI (Effective Portion), Net of Tax
	Cash flow hedges:		
Commodity contracts	\$ 308	Cost of goods sold	\$ 1,078
Interest rate swap	305	Interest expense	231
Other	(213)	Other	—
Total	\$ 400	Total	\$ 1,309

<i>(In thousands)</i>	Year Ended December 26, 2015		
	(Loss) Gain Recognized in AOCI (Effective Portion), Net of Tax	Classification Gains (Losses)	Loss (Gain) Reclassified from AOCI (Effective Portion), Net of Tax
	Cash flow hedges:		
Commodity contracts	\$ (3,817)	Cost of goods sold	\$ 3,310
Interest rate swap	(727)	Interest expense	238
Other	(60)	Other	—
Total	\$ (4,604)	Total	\$ 3,548

The Company enters into futures and forward contracts that closely match the terms of the underlying transactions. As a result, the ineffective portion of the open hedge contracts through December 31, 2016 was not material to the Consolidated Statements of Income.

The Company primarily enters into International Swaps and Derivatives Association master netting agreements with major financial institutions that permit the net settlement of amounts owed under their respective derivative contracts. Under these master netting agreements, net settlement generally permits the Company or the counterparty to determine the net amount payable for contracts due on the same date and in the same currency for similar types of derivative transactions. The master netting agreements generally also provide for net settlement of all outstanding contracts with the counterparty in the case of an event of default or a termination event. The Company does not offset fair value amounts for derivative instruments and fair value amounts recognized for the right to reclaim cash collateral. At December 31, 2016 and December 26, 2015, the Company had recorded restricted cash in other current assets of \$1.4 million and \$2.6 million, respectively, as collateral related to open derivative contracts under the master netting arrangements.

**Note 7 – Property, Plant, and Equipment, Net**

<i>(In thousands)</i>	2016	2015
Land and land improvements	\$ 19,928	\$ 13,046
Buildings	144,914	128,322
Machinery and equipment	607,344	597,209
Construction in progress	30,344	47,746
	802,530	786,323
Less accumulated depreciation	(507,299)	(506,099)
Property, plant, and equipment, net	\$ 295,231	\$ 280,224

During the fourth quarter of 2016, the Company acquired the land, building, and manufacturing equipment of an idled copper tube mill in Cedar City, Utah.

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**Note 8 – Goodwill and Other Intangible Assets**

**Goodwill**

The changes in the carrying amount of goodwill by segment were as follows:

<i>(In thousands)</i>	<u>Piping Systems</u>	<u>Industrial Metals</u>	<u>Climate</u>	<u>Total</u>
Goodwill	\$ 141,132	\$ 8,853	\$ 2,329	\$ 152,314
Accumulated impairment charges	(40,552)	(8,853)	—	(49,405)
Balance at December 27, 2014:	100,580	—	2,329	102,909
Additions	19,087	1	2,087	21,175
Disposition	(2,418)	—	—	(2,418)
Currency translation	(1,414)	—	—	(1,414)
Balance at December 26, 2015:	115,835	1	4,416	120,252
Additions (1)	4,601	—	—	4,601
Currency translation	(860)	—	—	(860)
Balance at December 31, 2016:				
Goodwill	160,128	8,854	4,416	173,398
Accumulated impairment charges	(40,552)	(8,853)	—	(49,405)
Goodwill, net	<u>\$ 119,576</u>	<u>\$ 1</u>	<u>\$ 4,416</u>	<u>\$ 123,993</u>

(1) Includes finalization of the purchase price allocation adjustment for Great Lakes of \$4.1 million

Reporting units with recorded goodwill include DPS, Great Lakes, European Operations, Turbotec, Sherwood, and Jungwoo-Mueller. Several factors give rise to goodwill in the Company's acquisitions, such as the expected benefit from synergies of the combination and the existing workforce of the acquired businesses. There were no impairment charges resulting from the 2016, 2015, or 2014 annual impairment tests as the estimated fair value of each of the reporting units exceeded its carrying value.

**Other Intangible Assets**

The carrying amount of intangible assets at December 31, 2016 was as follows:

<i>(In thousands)</i>	<u>Gross Carrying Amount</u>	<u>Accumulated Amortization</u>	<u>Net Carrying Amount</u>
Customer relationships	\$ 29,833	\$ (2,845)	\$ 26,988
Non-compete agreements	5,926	(4,063)	1,863
Patents and technology	5,922	(1,179)	4,743
Trade names and licenses	4,087	(1,032)	3,055
Other	213	(694)	(481)
Other intangible assets	<u>\$ 45,981</u>	<u>\$ (9,813)</u>	<u>\$ 36,168</u>

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The carrying amount of intangible assets at December 26, 2015 was as follows:

<i>(In thousands)</i>	<u>Gross Carrying Amount</u>	<u>Accumulated Amortization</u>	<u>Net Carrying Amount</u>
Customer relationships	\$ 30,882	\$ (1,488)	\$ 29,394
Non-compete agreements	6,534	(2,838)	3,696
Patents and technology	9,798	(5,323)	4,475
Trade names and licenses	4,160	(574)	3,586
Other	213	(728)	(515)
Other intangible assets	<u>\$ 51,587</u>	<u>\$ (10,951)</u>	<u>\$ 40,636</u>

Amortization expense for intangible assets was \$4.3 million in 2016, \$4.1 million in 2015, and \$3.5 million in 2014. Future amortization expense is estimated as follows:

<i>(In thousands)</i>	<u>Amount</u>
2017	\$ 2,996
2018	2,735
2019	2,655
2020	2,458
2021	2,272
Thereafter	<u>23,052</u>
Expected amortization expense	<u>\$ 36,168</u>

**Note 9 – Investment in Unconsolidated Affiliates**

During the third quarter of 2015, the Company entered into a joint venture agreement with affiliates of Atlas Holdings LLC to form the Joint Venture, which simultaneously entered into a definitive merger agreement with MA Industrial Sub, Inc. and Tecumseh to commence a cash tender offer to acquire all of the outstanding shares of Tecumseh. On September 21, 2015, the tender offer and back-end merger was completed and Mueller contributed \$65.9 million for a 50 percent ownership interest in the Joint Venture. Tecumseh is a global manufacturer of hermetically sealed compressors for residential and specialty air conditioning, household refrigerators and freezers, and commercial refrigeration applications, including air conditioning and refrigeration compressors, as well as condensing units, heat pumps, and complete refrigeration systems.

The following tables present summarized financial information derived from the Company's equity method investees' combined consolidated financial statements, which are prepared in accordance with U.S. GAAP. The income statement data is reflective of the period since the acquisition of the investees.

<i>(In thousands)</i>	<u>2016</u>	<u>2015</u>
Balance sheet data:		
Current assets	\$ 244,323	\$ 251,389
Noncurrent assets	130,400	112,156
Current liabilities	148,806	178,784
Noncurrent liabilities	71,681	63,643
Income statement data:		
Net sales	\$ 579,400	\$ —
Gross profit	79,600	—
Net income	3,720	—

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Included in the equity method investees' net income for the twelve months ended September 30, 2016 is a gain of \$17.1 million that resulted from the allocation of the purchase price, which was finalized during the quarter ended December 31, 2015. That gain was offset by restructuring and impairment charges of \$5.3 million and net losses of \$8.1 million.

**Note 10 – New Markets Tax Credit Transaction**

On October 18, 2016, the Company entered into a financing transaction with Wells Fargo Community Investment Holdings, LLC (Wells Fargo) related to an equipment modernization project at the Company's copper tube and line sets production facilities in Fulton, MS. Wells Fargo made a capital contribution and the Company made a loan to MCTC Investment Fund, LLC (Investment Fund) under a qualified New Markets Tax Credit (NMTC) program. The NMTC program was provided for in the Community Renewal Tax Relief Act of 2000 (Act) and is intended to induce capital investment in qualified lower income communities. The Act permits taxpayers to claim credits against their Federal income taxes for up to 39% of qualified investments in the equity of community development entities (CDEs). CDEs are privately managed investment institutions that are certified to make qualified low-income community investments.

In connection with the financing, the Company loaned \$13.7 million aggregate principal amount of a 1.0% loan (Leverage Loan) due October 17, 2041, to the Investment Fund. Additionally, Wells Fargo contributed \$6.6 million to the Investment Fund, and as such, Wells Fargo is entitled to substantially all of the benefits derived from the NMTCs. The Investment Fund then contributed the proceeds to certain CDEs, which, in turn, loaned the funds on similar terms as the Leverage Loan to Mueller Copper Tube Company, Inc. (MCTC) an indirect, wholly-owned subsidiary of the Company. The proceeds of the loans from the CDEs, including loans representing the capital contribution made by Wells Fargo, net of syndication fees, are restricted for use on the modernization project. At December 31, 2016, after qualifying capital expenditures, MCTC held restricted cash of \$6.6 million, which is included in other current assets in the accompanying Consolidated Balance Sheets.

The NMTC is subject to 100% recapture for a period of seven years as provided in the Internal Revenue Code. The Company is required to comply with various regulations and contractual provisions that apply to the NMTC arrangement. Non-compliance with applicable requirements could result in projected tax benefits not being realized and, therefore, require the Company to indemnify Wells Fargo for any loss or recapture of NMTCs related to the financing until such time as the Company's obligation to deliver tax benefits is relieved. The Company does not anticipate any credit recaptures will be required in connection with this arrangement. This transaction also includes a put/call provision whereby the Company may be obligated or entitled to repurchase Wells Fargo's interest in the Investment Fund. The Company believes that Wells Fargo will exercise the put option in October 2023, at the end of the recapture period. The value attributed to the put/call is negligible.

The Company has determined that the financing arrangement with the Investment Fund and CDEs is a variable interest entity (VIE), and that it is the primary beneficiary of the VIE. This conclusion was reached based on the following:

- The ongoing activities of the VIE, collecting and remitting interest and fees, and NMTC compliance were all considered in the initial design and are not expected to significantly affect economic performance throughout the life of the VIE;
- Contractual arrangements obligate the Company to comply with NMTC rules and regulations and provide various other guarantees to the Investment Fund and CDEs;
- Wells Fargo lacks a material interest in the underlying economics of the project; and
- The Company is obligated to absorb losses of the VIE.

Because the Company is the primary beneficiary of the VIE, it has been included in the Company's Consolidated Financial Statements. Wells Fargo's contribution of \$6.6 million was initially recorded as restricted cash and its interest in the Investment Fund is included in other liabilities.

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**Note 11 – Debt**

(In thousands)

	<u>2016</u>	<u>2015</u>
Revolving Credit Facility with interest at 2.49%, due 2021	\$ 200,000	\$ —
Term Loan Facility, due 2017	—	200,000
Mueller-Xingrong credit facility with interest at 4.35%, due 2017	3,048	5,275
Jungwoo-Mueller credit facility with interest at 2.82%, due 2017	4,724	—
Jungwoo-Mueller credit facility with interest at 3.28%, due 2018	7,990	—
2001 Series IRB's with interest at 1.23%, due through 2021	4,250	5,250
Debt Issuance Costs	(957)	—
Other	8,309	5,485
	<u>227,364</u>	<u>216,010</u>
Less current portion of debt	<u>(13,655)</u>	<u>(11,760)</u>
Long-term debt	<u>\$ 213,709</u>	<u>\$ 204,250</u>

On December 6, 2016, the Company entered into a credit agreement (Credit Agreement) providing for an unsecured \$350.0 million revolving credit facility (Revolving Credit Facility) which matures on December 6, 2021. The Company used the borrowings under the Revolving Credit Facility to replace the amounts previously advanced under the Term Loan Facility, the Company's previous credit facility. Borrowings under the Revolving Credit Facility bear interest, at the Company's option, at LIBOR or Base Rate as defined by the Credit Agreement, plus a variable premium. LIBOR advances may be based upon the one, three, or six-month LIBOR. The variable premium is based upon the Company's debt to total capitalization ratio, and can range from 112.5 to 162.5 basis points for LIBOR based loans and 12.5 to 62.5 basis points for Base Rate loans. At December 31, 2016, the premium was 115.0 basis points for LIBOR loans and 15.0 basis points for Base Rate loans. Additionally, a commitment fee is payable quarterly on the total commitment less any outstanding loans or issued letters of credit, and varies from 15.0 to 30.0 basis points based upon the Company's debt to total capitalization ratio. Availability of funds under the Revolving Credit Facility is reduced by the amount of certain outstanding letters of credit, which are used to secure the Company's payment of insurance deductibles and certain retiree health benefits, totaling approximately \$7.0 million at December 31, 2016. Terms of the letters of credit are generally renewable annually.

On March 23, 2016, Mueller-Xingrong entered into a secured revolving credit agreement with a total borrowing capacity of RMB 150 million (or approximately \$21.7 million). In addition, Mueller-Xingrong occasionally finances working capital through various accounts receivable and bank draft discount arrangements. Borrowings are secured by the real property and equipment and bank draft receivables of Mueller-Xingrong and bear interest at the latest base-lending rate published by the People's Bank of China.

Jungwoo-Mueller has several secured revolving credit arrangements with a total borrowing capacity of KRW 35.7 billion (or approximately \$30.3 million). Borrowings are secured by the real property and equipment of Jungwoo-Mueller.

Covenants contained in the Company's financing obligations require, among other things, the maintenance of minimum levels of tangible net worth and the satisfaction of certain minimum financial ratios. At December 31, 2016, the Company was in compliance with all debt covenants.

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Aggregate annual maturities of the Company's debt are as follows:

<i>(In thousands)</i>	<u>Amount</u>
2017	\$ 13,655
2018	9,212
2019	1,222
2020	1,222
2021	200,472
Thereafter	<u>2,538</u>
Long-term debt	<u>\$ 228,321</u>

Net interest expense consisted of the following:

<i>(In thousands)</i>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Interest expense	\$ 7,749	\$ 8,335	\$ 6,393
Capitalized interest	<u>(362)</u>	<u>(668)</u>	<u>(653)</u>
	<u>\$ 7,387</u>	<u>\$ 7,667</u>	<u>\$ 5,740</u>

Interest paid in 2016, 2015, and 2014 was \$7.1 million, \$8.1 million, and \$5.7 million, respectively.

**Note 12 – Benefit Plans**

**Pension and Other Postretirement Plans**

The Company sponsors several qualified and nonqualified pension plans and other postretirement benefit plans for certain employees. The following tables provide a reconciliation of the changes in the plans' benefit obligations and the fair value of the plans' assets for 2016 and 2015, and a statement of the plans' aggregate funded status:

<i>(In thousands)</i>	Pension Benefits		Other Benefits	
	2016	2015	2016	2015
Change in benefit obligation:				
Obligation at beginning of year	\$ 192,761	\$ 207,738	\$ 15,843	\$ 19,307
Service cost	532	803	232	363
Interest cost	7,553	8,032	594	1,005
Actuarial loss (gain)	9,399	(9,163)	(249)	270
Plan amendments	—	—	43	(9,094)
Business acquisitions	—	—	—	5,655
Benefit payments	(17,572)	(10,795)	(1,023)	(1,037)
Foreign currency translation adjustment	(13,937)	(3,854)	(166)	(626)
Obligation at end of year	178,736	192,761	15,274	15,843
Change in fair value of plan assets:				
Fair value of plan assets at beginning of year	176,077	190,016	—	—
Actual return on plan assets	19,319	(1,682)	—	—
Employer contributions	2,377	1,513	1,023	1,037
Benefit payments	(17,572)	(10,795)	(1,023)	(1,037)
Foreign currency translation adjustment	(11,061)	(2,975)	—	—
Fair value of plan assets at end of year	169,140	176,077	—	—
Underfunded status at end of year	\$ (9,596)	\$ (16,684)	\$ (15,274)	\$ (15,843)

During 2016, the Company offered a lump sum window to certain inactive participants in one of its pension plans, resulting in incremental benefit payments of \$7.0 million and a settlement charge of \$1.2 million.

During 2015, the Company amended one of its postretirement benefit plans to remove certain benefits, resulting in a \$9.1 million reduction in the obligation.

The following represents amounts recognized in AOCI (before the effect of income taxes):

<i>(In thousands)</i>	Pension Benefits		Other Benefits	
	2016	2015	2016	2015
Unrecognized net actuarial loss	\$ 39,986	\$ 48,681	\$ 614	\$ 767
Unrecognized prior service credit	—	—	(8,180)	(9,087)

The Company sponsors one pension plan in the U.K. which comprised 42 and 41 percent of the above benefit obligation at December 31, 2016 and December 26, 2015, respectively, and 36 and 35 percent of the above plan assets at December 31, 2016 and December 26, 2015, respectively.

As of December 31, 2016, \$2.2 million of the actuarial net loss and \$0.9 million of the prior service credit will, through amortization, be recognized as components of net periodic benefit cost in 2017.

The aggregate status of all overfunded plans is recognized as an asset and the aggregate status of all underfunded plans is recognized as a liability in the Consolidated Balance Sheets. The amounts recognized as a liability are classified as current or long-term on a plan-by-plan basis. Liabilities are classified as current to the extent the actuarial present value of benefits payable within the next 12 months exceeds the fair value of plan assets, with all remaining amounts classified as long-term.

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As of December 31, 2016 and December 26, 2015, the total funded status of the plans recognized in the Consolidated Balance Sheets was as follows:

<i>(In thousands)</i>	Pension Benefits		Other Benefits	
	2016	2015	2016	2015
Long-term asset	\$ 4,442	\$ 765	\$ —	\$ —
Current liability	—	—	(1,128)	(1,221)
Long-term liability	(14,038)	(17,449)	(14,146)	(14,622)
Total underfunded status	<u>\$ (9,596)</u>	<u>\$ (16,684)</u>	<u>\$ (15,274)</u>	<u>\$ (15,843)</u>

The components of net periodic benefit cost are as follows:

<i>(In thousands)</i>	2016	2015	2014
<b>Pension benefits:</b>			
Service cost	\$ 532	\$ 803	\$ 973
Interest cost	7,553	8,032	8,590
Expected return on plan assets	(9,615)	(10,289)	(13,669)
Amortization of prior service cost	—	—	1
Amortization of net loss	2,898	2,710	752
Settlement charge	1,214	—	—
Net periodic benefit cost (income)	<u>\$ 2,582</u>	<u>\$ 1,256</u>	<u>\$ (3,353)</u>
<b>Other benefits:</b>			
Service cost	\$ 232	\$ 363	\$ 348
Interest cost	594	1,005	685
Amortization of prior service (credit) cost	(896)	6	6
Amortization of net gain	(60)	(28)	(218)
Net periodic benefit (income) cost	<u>\$ (130)</u>	<u>\$ 1,346</u>	<u>\$ 821</u>

The weighted average assumptions used in the measurement of the Company's benefit obligations are as follows:

	Pension Benefits		Other Benefits	
	2016	2015	2016	2015
Discount rate	3.61%	4.02%	4.21%	4.25%
Expected long-term return on plan assets	5.56%	5.59%	N/A	N/A
Rate of compensation increases	N/A	N/A	5.00%	5.00%
Rate of inflation	3.30%	3.20%	N/A	N/A

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The weighted average assumptions used in the measurement of the Company's net periodic benefit cost are as follows:

	Pension Benefits			Other Benefits		
	2016	2015	2014	2016	2015	2014
Discount rate	4.02%	4.03%	4.82%	4.25%	4.33%	4.89%
Expected long-term return on plan assets	5.59%	5.58%	7.40%	N/A	N/A	N/A
Rate of compensation increases	N/A	N/A	N/A	5.00%	5.00%	5.50%
Rate of inflation	3.20%	3.10%	3.40%	N/A	N/A	N/A

The Company's Mexican postretirement plans use the rate of compensation increase in the benefit formulas. Past service in the U.K. pension plan will be adjusted for the effects of inflation. All other pension and postretirement plans use benefit formulas based on length of service.

The annual assumed rate of increase in the per capita cost of covered benefits (i.e., health care cost trend rate) is assumed to range from 6.8 to 8.3 percent for 2017, gradually decrease to 3.0 percent through 2036, and remain at that level thereafter. The health care cost trend rate assumption does not have a significant effect on the amounts reported.

**Pension Assets**

The weighted average asset allocation of the Company's pension fund assets are as follows:

Asset category	Pension Plan Assets	
	2016	2015
Equity securities (includes equity mutual funds)	47%	51%
Fixed income securities (includes fixed income mutual funds)	48	37
Cash and equivalents (includes money market funds)	3	9
Alternative investments	2	3
Total	100%	100%

At December 31, 2016, the long-term target allocation, by asset category, of assets of the Company's defined benefit pension plans was: (i) fixed income securities – at least 60 percent; (ii) equity securities, including equity index funds – not more than 30 percent; and (iii) alternative investments – not more than 5 percent.

The pension plan obligations are long-term and, accordingly, the plan assets are invested for the long-term. Plan assets are monitored periodically. Based upon results, investment managers and/or asset classes are redeployed when considered necessary. None of the plans' assets are expected to be returned to the Company during the next fiscal year. The assets of the plans do not include investments in securities issued by the Company.

The estimated rates of return on plan assets are the expected future long-term rates of earnings on plan assets and are forward-looking assumptions that materially affect pension cost. Establishing the expected future rates of return on pension assets is a judgmental matter. The Company reviews the expected long-term rates of return on an annual basis and revises as appropriate. The expected long-term rate of return on plan assets was 5.56 percent for 2016 and 5.59 percent in 2015.

The Company's investments for its pension plans are reported at fair value. The following methods and assumptions were used to estimate the fair value of the Company's plan asset investments:

*Cash and money market funds* – Valued at cost, which approximates fair value.

*Common stock* – Valued at the closing price reported on the active market on which the individual securities are traded.

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*Mutual funds* – Valued at the net asset value of shares held by the plans at December 31, 2016 and December 26, 2015, respectively, based upon quoted market prices.

*Limited partnerships* – Limited partnerships include investments in various Cayman Island multi-strategy hedge funds. The plans' investments in limited partnerships are valued at the estimated fair value of the class shares owned by the plans based upon the equity in the estimated fair value of those shares. The estimated fair values of the limited partnerships are determined by the investment managers. In determining fair value, the investment managers of the limited partnerships utilize the estimated net asset valuations of the underlying investment entities. The underlying investment entities value securities and other financial instruments on a mark-to-market or estimated fair value basis. The estimated fair value is determined by the investment managers based upon, among other things, the type of investments, purchase price, marketability, current financial condition, operating results, and other information. The estimated fair values of substantially all of the investments of the underlying investment entities, which may include securities for which prices are not readily available, are determined by the investment managers or management of the respective underlying investment entities and may not reflect amounts that could be realized upon immediate sale. Accordingly, the estimated fair values may differ significantly from the values that would have been used had a ready market existed for these investments.

The following table sets forth by level, within the fair value hierarchy, the assets of the plans at fair value:

<i>(In thousands)</i>	Fair Value Measurements at December 31, 2016			
	Level 1	Level 2	Level 3	Total
Cash and money market funds	\$ 4,245	\$ —	\$ —	\$ 4,245
Common stock (1)	18,601	—	—	18,601
Mutual funds (2)	5,572	136,027	—	141,599
Limited partnerships	—	—	4,695	4,695
<b>Total</b>	<b>\$ 28,418</b>	<b>\$ 136,027</b>	<b>\$ 4,695</b>	<b>\$ 169,140</b>

<i>(In thousands)</i>	Fair Value Measurements at December 26, 2015			
	Level 1	Level 2	Level 3	Total
Cash and money market funds	\$ 16,632	\$ —	\$ —	\$ 16,632
Common stock (3)	25,229	—	—	25,229
Mutual funds (4)	9,666	119,960	—	129,626
Limited partnerships	—	—	4,590	4,590
<b>Total</b>	<b>\$ 51,527</b>	<b>\$ 119,960</b>	<b>\$ 4,590</b>	<b>\$ 176,077</b>

- (1) Approximately 90 percent of common stock represents investments in U.S. companies primarily in the health care, utilities, financials, consumer staples, industrials, and information technology sectors. All investments in common stock are listed on U.S. stock exchanges.
- (2) Approximately 68 percent of mutual funds are actively managed funds and approximately 32 percent of mutual funds are index funds. Additionally, five percent of the mutual funds' assets are invested in U.S. equities, 38 percent in non-U.S. equities, 54 percent in U.S. fixed income securities, and three percent in non-U.S. fixed income securities.
- (3) Approximately 89 percent of common stock represents investments in U.S. companies primarily in the health care, utilities, financials, consumer staples, industrials, and information technology sectors. All investments in common stock are listed on U.S. stock exchanges.
- (4) Approximately 67 percent of mutual funds are actively managed funds and approximately 33 percent of mutual funds are index funds. Additionally, 12 percent of the mutual funds' assets are invested in U.S. equities, 38 percent in non-U.S. equities, 46 percent in U.S. fixed income securities, and 4 percent in non-U.S. fixed income securities.

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The table below reflects the changes in the assets of the plan measured at fair value on a recurring basis using significant unobservable inputs (level 3 of fair value hierarchy) during the year ended December 31, 2016:

<i>(In thousands)</i>	<u>Limited Partnerships</u>
Balance, December 26, 2015	\$ 4,590
Redemptions	(196)
Subscriptions	196
Net appreciation in fair value	<u>105</u>
Balance, December 31, 2016	<u>\$ 4,695</u>

**Contributions and Benefit Payments**

The Company expects to contribute approximately \$0.9 million to its pension plans and \$1.2 million to its other postretirement benefit plans in 2017. The Company expects future benefits to be paid from the plans as follows:

<i>(In thousands)</i>	<u>Pension Benefits</u>	<u>Other Benefits</u>
2017	\$ 10,496	\$ 1,179
2018	10,491	1,100
2019	10,496	1,052
2020	10,431	1,294
2021	10,388	1,102
2022-2026	<u>51,211</u>	<u>5,902</u>
Total	<u>\$ 103,513</u>	<u>\$ 11,629</u>

**Multiemployer Plan**

The Company contributes to the IAM National Pension Fund, National Pension Plan (IAM Plan), a multiemployer defined benefit plan. Participation in the IAM Plan was negotiated under the terms of two collective bargaining agreements in Port Huron, Michigan, the Local 218 IAM and Local 44 UAW that expire on May 5, 2019 and July 21, 2019, respectively. The Employer Identification Number for this plan is 51-6031295.

The risks of participating in multiemployer plans are different from single-employer plans in the following aspects: (i) assets contributed to the multiemployer plan by one employer may be used to provide benefits to employees of other participating employers; (ii) if a participating employer stops contributing to the plan, the underfunded obligations of the plan may be borne by the remaining participating employers; (iii) if the Company chooses to stop participating in the plan, the Company may be required to pay the plan an amount based on the underfunded status of the plan, referred to as a withdrawal liability.

The Company makes contributions to the IAM Plan trusts that cover certain union employees; contributions by employees are not permitted. Contributions to the IAM Plan were \$1.1 million in 2016, \$1.1 million in 2015, and \$1.0 million in 2014. The Company's contributions are less than five percent of total employer contributions made to the IAM Plan indicated in the most recently filed Form 5500.

Under the Pension Protection Act of 2006, the IAM Plan's actuary must certify the plan's zone status annually. Plans in the red zone are generally less than 65 percent funded, plans in the yellow zone are less than 80 percent funded, and plans in the green zone are at least 80 percent funded. If a plan is determined to be in endangered status, red zone or yellow zone, the plan's trustees must develop a formal plan of corrective action, a Financial Improvement Plan and/or a Rehabilitation Plan. For 2016 and 2015 the IAM Plan was determined to have green zone status; therefore, no formal plan of corrective action is either pending or has been implemented.

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**401(k) Plans**

The Company sponsors voluntary employee savings plans that qualify under Section 401(k) of the Internal Revenue Code of 1986. Compensation expense for the Company's matching contribution to the 401(k) plans was \$5.2 million in 2016, \$4.2 million in 2015, and \$4.1 million in 2014. The Company match is a cash contribution. Participants direct the investment of their account balances by allocating among a range of asset classes including mutual funds (equity, fixed income, and balanced funds) and money market funds. The plans do not allow direct investment in securities issued by the Company.

**UMWA Benefit Plans**

In October 1992, the Coal Industry Retiree Health Benefit Act of 1992 (1992 Act) was enacted. The 1992 Act mandates a method of providing for postretirement benefits to the United Mine Workers of America (UMWA) current and retired employees, including some retirees who were never employed by the Company. In October 1993, beneficiaries were assigned to the Company and the Company began its mandated contributions to the UMWA Combined Benefit Fund, a multiemployer trust. Beginning in 1994, the Company was required to make contributions for assigned beneficiaries under an additional multiemployer trust created by the Act, the UMWA 1992 Benefit Plan. The ultimate amount of the Company's liability under the Act will vary due to factors which include, among other things, the validity, interpretation, and regulation of the Act, its joint and several obligation, the number of valid beneficiaries assigned, and the extent to which funding for this obligation will be satisfied by transfers of excess assets from the 1950 UMWA pension plan and transfers from the Abandoned Mine Reclamation Fund. Contributions to the plan were \$197 thousand, \$214 thousand, and \$249 thousand for the years ended 2016, 2015, and 2014, respectively.

**Note 13 – Commitments and Contingencies**

**Environmental**

The Company is subject to federal, state, local, and foreign environmental laws and regulations. For all properties, the Company has provided and charged to expense \$0.9 million in 2016, \$0.1 million in 2015, and \$1.2 million in 2014 for pending environmental matters. Environmental reserves totaled \$21.9 million at December 31, 2016 and \$21.7 million at December 26, 2015. As of December 31, 2016, the Company expects to spend \$0.7 million in 2017, \$0.6 million in 2018, \$0.6 million in 2019, \$0.7 million in 2020, \$0.7 million in 2021, and \$18.6 million thereafter for ongoing projects.

Non-operating Properties

*Southeast Kansas Sites*

The Kansas Department of Health and Environment (KDHE) has contacted the Company regarding environmental contamination at three former smelter sites in Kansas (Altoona, East La Harpe, and Lanyon). The Company is not a successor to the companies that operated these smelter sites, but is exploring possible settlement with KDHE and other potentially responsible parties (PRP) in order to avoid litigation. Another PRP conducted a site investigation of the Altoona site under a consent decree with KDHE and submitted a removal site evaluation report recommending a remedy. The remedial design plan, which covers both on-site and certain off-site cleanup costs, was approved by the KDHE in 2016. At the East La Harpe site, the Company and two other PRPs conducted a site study evaluation under KDHE supervision and prepared a site cleanup plan approved by KDHE. In 2016, the corporate parent of a third party that the Company understands may owe indemnification obligations to one of the other PRPs in connection with the East La Harpe site filed for protection under Chapter 11 of the U.S. Bankruptcy Code. KDHE has extended the deadline for the PRPs to develop a repository design plan to allow for wetlands permitting to take place. With respect to the Lanyon Site, in 2016, the Company received a general notice letter from the United States Environmental Protection Agency (EPA) asserting that the Company is a PRP, which the Company has denied. The Company's reserve for its proportionate share of the remediation costs associated with the Southeast Kansas sites is \$5.6 million.

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*Shasta Area Mine Sites*

Mining Remedial Recovery Company (MRRC), a wholly owned subsidiary, owns certain inactive mines in Shasta County, California. MRRC has continued a program, begun in the late 1980s, of implementing various remedial measures, including sealing mine portals with concrete plugs in portals which were discharging water. The sealing program achieved significant reductions in the metal load in discharges from these adits; however, additional reductions are required pursuant to an order issued by the California Regional Water Quality Control Board (QCB). In response to a 1996 QCB Order, MRRC completed a feasibility study in 1997 describing measures designed to mitigate the effects of acid rock drainage. In December 1998, the QCB modified the 1996 order extending MRRC's time to comply with water quality standards. In September 2002, the QCB adopted a new order requiring MRRC to adopt Best Management Practices (BMP) to control discharges of acid mine drainage, and again extended the time to comply with water quality standards until September 2007. During that time, implementation of BMP further reduced impacts of acid rock drainage; however, full compliance has not been achieved. The QCB is presently renewing MRRC's discharge permit and will concurrently issue a new order. It is expected that the new ten-year permit will include an order requiring continued implementation of BMP through 2025 to address residual discharges of acid rock drainage. At this site, MRRC spent approximately \$1.2 million from 2014 through 2016 for remediation, and currently estimates that it will spend between approximately \$13.2 million and \$20.9 million over the next 30 years.

*Lead Refinery Site*

U.S.S. Lead Refinery, Inc. (Lead Refinery), a non-operating wholly owned subsidiary of MRRC, has conducted corrective action and interim remedial activities (collectively, Site Activities) at Lead Refinery's East Chicago, Indiana site pursuant to the Resource Conservation and Recovery Act since December 1996. Although the Site Activities have been substantially concluded, Lead Refinery is required to perform monitoring and maintenance-related activities pursuant to a post-closure permit issued by the Indiana Department of Environmental Management effective as of March 2, 2013. Lead Refinery spent approximately \$0.5 million from 2014 through 2016 with respect to this site. Approximate costs to comply with the post-closure permit, including associated general and administrative costs, are estimated at between \$2.1 million and \$4.7 million over the next 20 years.

On April 9, 2009, pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the U.S. Environmental Protection Agency (EPA) added the Lead Refinery site and surrounding properties to the National Priorities List (NPL). On July 17, 2009, Lead Refinery received a written notice from the EPA indicating that it may be a PRP under CERCLA due to the release or threat of release of hazardous substances including lead into properties surrounding the Lead Refinery site. The EPA identified two other PRPs in connection with that matter. In November 2012, the EPA adopted a remedy for the surrounding properties and in September 2014, the EPA announced that it had entered into a settlement with the two other PRPs whereby they will pay approximately \$26.0 million to fund the cleanup of approximately 300 properties surrounding the Lead Refinery site and perform certain remedial action tasks.

On November 8, 2016, the Company, its subsidiary Arava Natural Resources Company, Inc. (Arava), and Arava's subsidiary MRRC each received general notice letters from EPA asserting that they may be PRPs in connection with the Lead Refinery NPL site. The Company, Arava, and MRRC have denied liability for any remedial action and response costs associated with the Lead Refinery NPL site. At this juncture, the Company is unable to determine the likelihood of a material adverse outcome or the amount or range of a potential loss with respect to any remedial action related to the Lead Refinery NPL site.

Operating Properties

*Mueller Copper Tube Products, Inc.*

In 1999, Mueller Copper Tube Products, Inc. (MCTP), a wholly owned subsidiary, commenced a cleanup and remediation of soil and groundwater at its Wynne, Arkansas plant to remove trichloroethylene, a cleaning solvent formerly used by MCTP. On August 30, 2000, MCTP received approval of its Final Comprehensive Investigation Report and Storm Water Drainage Investigation Report addressing the treatment of soils and groundwater from the Arkansas Department of Environmental Quality (ADEQ). The Company established a reserve for this project in connection with the acquisition of MCTP in 1998. Effective November 17, 2008, MCTP entered into a Settlement Agreement and Administrative Order by Consent to submit a Supplemental Investigation Work Plan (SIWP) and subsequent Final Remediation Work Plan (RWP) for the site. By letter dated January 20, 2010, ADEQ approved the SIWP as submitted, with changes acceptable to the Company. On December 16, 2011, MCTP entered into an amended Administrative Order by Consent to prepare and implement a revised RWP regarding final remediation for the Site. The remediation system was activated in February 2014. Costs to implement the work plans, including associated general and administrative costs, are estimated to approximate \$0.9 million to \$1.4 million over the next nine years.

### **United States Department of Commerce Antidumping Review**

On December 24, 2008, the Department of Commerce (DOC) initiated an antidumping administrative review of the antidumping duty order covering circular welded non-alloy steel pipe and tube from Mexico for the November 1, 2007 through October 31, 2008 period of review. The DOC selected Mueller Comercial as a respondent in the review. On April 19, 2010, the DOC published the final results of the review and assigned Mueller Comercial an antidumping duty rate of 48.33 percent. On May 25, 2010, the Company appealed the final results to the U.S. Court of International Trade (CIT). On December 16, 2011, the CIT issued a decision remanding the Department's final results. While the matter was still pending, the Company and the United States reached an agreement to settle the appeal. Subject to the conditions of the agreement, the Company anticipated that certain of its subsidiaries will incur antidumping duties on subject imports made during the period of review and, as such, established a reserve for this matter. After the lapse of the statutory period of time during which U.S. Customs and Border Protection (CBP) was required, but failed, to liquidate the entries at the settled rate, the Company released the reserve. Between October 30, 2015 and November 27, 2015, CBP sent a series of invoices to Southland Pipe Nipples Co., Inc. (Southland), requesting payment of approximately \$3.0 million in duties and interest in connection with 795 import entries made during the November 1, 2007 through October 31, 2008 period. On January 26, 2016 and January 27, 2016, Southland filed protests with CBP in connection with these invoices, noting that CBP's asserted claims were not made in accordance with applicable law, including statutory provisions governing deemed liquidation. The Company believes in the merits of the legal objections raised in Southland's protests, and CBP's response to Southland's protests is currently pending. Given the procedural posture of and issued raised by this legal dispute, the Company cannot estimate the amount of potential duty liability, if any, that may result from CBP's asserted claims.

### **Equal Employment Opportunity Commission Matter**

On October 5, 2016, the Company received a demand letter from the Los Angeles District Office of the United States Equal Employment Opportunity Commission (EEOC). The EEOC alleges that between May 2011 and April 2015, various Company employees were terminated in violation of the Americans with Disabilities Act (ADA), and that certain of the Company's employee leave and attendance policies were discriminatory in nature. On that basis, the EEOC's letter includes a demand for monetary relief on behalf an identified class of 20 individuals, and an unidentified class of 150 individuals, in addition to injunctive relief.

The Company believes the EEOC's allegations are without merit. Notwithstanding the Company's position, in consultation with its liability insurers, the Company has entered into a conciliation process with the EEOC for purposes of resolving the claims and avoiding litigation. In connection with that conciliation effort, the Company has communicated to the EEOC a monetary settlement proposal within its applicable insurance limits. The conciliation process is ongoing. Due to the procedural stage of this matter, the Company is unable to determine the likelihood of a material adverse outcome in this matter, or the amount or range of a potential loss in excess of any available insurance coverage.

### **Leases**

The Company leases certain facilities, vehicles, and equipment under operating leases expiring on various dates through 2028. The lease payments under these agreements aggregate to approximately \$7.4 million in 2017, \$5.7 million in 2018, \$3.3 million in 2019, \$2.7 million in 2020, \$2.5 million in 2021, and \$9.5 million thereafter. Total lease expense amounted to \$11.6 million in 2016, \$9.7 million in 2015, and \$9.8 million in 2014.

### **Other**

The Company is involved in certain litigation as a result of claims that arose in the ordinary course of business, which management believes will not have a material adverse effect on the Company's financial position, results of operations, or cash flows. It may also realize the benefit of certain legal claims and litigation in the future; these gain contingencies are not recognized in the Consolidated Financial Statements.

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**Note 14 – Income Taxes**

The components of income before income taxes were taxed under the following jurisdictions:

<i>(In thousands)</i>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Domestic	\$ 103,576	\$ 121,614	\$ 135,445
Foreign	42,454	10,175	12,568
Income before income taxes	<u>\$ 146,030</u>	<u>\$ 131,789</u>	<u>\$ 148,013</u>

Income tax expense consists of the following:

<i>(In thousands)</i>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Current tax expense:			
Federal	\$ 32,262	\$ 50,272	\$ 45,723
Foreign	5,667	4,042	2,346
State and local	3,210	4,886	3,905
Current tax expense	<u>41,139</u>	<u>59,200</u>	<u>51,974</u>
Deferred tax expense (benefit):			
Federal	2,004	(13,739)	(2,469)
Foreign	5,099	(1,180)	890
State and local	(105)	(899)	(4,916)
Deferred tax (benefit) expense	<u>6,998</u>	<u>(15,818)</u>	<u>(6,495)</u>
Income tax expense	<u>\$ 48,137</u>	<u>\$ 43,382</u>	<u>\$ 45,479</u>

No provision is made for U.S. income taxes applicable to undistributed earnings of foreign subsidiaries that are indefinitely reinvested in foreign operations. It is not practicable to compute the potential deferred tax liability associated with these undistributed foreign earnings. The Company has approximately \$118.8 million of undistributed foreign earnings for which it has not recorded deferred tax liabilities.

The difference between the reported income tax expense and a tax determined by applying the applicable U.S. federal statutory income tax rate to income before income taxes is reconciled as follows:

<i>(In thousands)</i>	<u>2016</u>	<u>2015</u>	<u>2014</u>
Expected income tax expense	\$ 51,110	\$ 46,126	\$ 51,805
State and local income tax, net of federal benefit	1,982	2,673	3,355
Effect of foreign statutory rate different from U.S. and other foreign adjustments	(4,092)	(654)	(1,094)
Valuation allowance changes	—	—	(5,732)
U.S. production activities deduction	(3,063)	(3,500)	(4,025)
Goodwill disposition	—	646	—
Investment in unconsolidated affiliates	1,030	—	—
Permanent adjustment to deferred tax liabilities	—	(4,218)	—
Other, net	1,170	2,309	1,170
Income tax expense	<u>\$ 48,137</u>	<u>\$ 43,382</u>	<u>\$ 45,479</u>

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During 2015, the Company had an adjustment to a deferred tax liability of \$4.2 million, or seven cents per diluted share, resulting from the acquisition of a foreign subsidiary.

During 2014, the Company released a valuation allowance of \$5.7 million, or 10 cents per diluted share, related to certain state income tax credits. As a result of legislative changes enacted in 2014, the Company expects to be able to use such credits within the foreseeable future.

The Company includes interest and penalties related to income tax matters as a component of income tax expense. The income tax expense related to penalties and interest was immaterial in 2016, 2015, and 2014.

The Internal Revenue Service completed its audit of the Company's 2013 tax return in 2016 and completed its audit of the Company's 2012 tax return during 2014, the results of which were immaterial to the Consolidated Financial Statements. The Company is currently under audit in various other jurisdictions.

The statute of limitations is still open for the Company's federal tax return and most state income tax returns for 2013 and all subsequent years. The statutes of limitations for certain state and foreign returns are also open for some earlier tax years due to differing statute periods. While the Company believes that it is adequately reserved for possible audit adjustments, the final resolution of these examinations cannot be determined with certainty and could result in final settlements that differ from current estimates.

The tax effects of temporary differences that give rise to significant portions of the deferred tax assets and deferred tax liabilities are presented below:

<i>(In thousands)</i>	<u>2016</u>	<u>2015</u>
<b>Deferred tax assets:</b>		
Inventories	\$ 15,483	\$ 14,802
Other postretirement benefits and accrued items	13,180	15,294
Pension	-	2,349
Other reserves	9,821	9,823
Federal and foreign tax attributes	5,813	7,403
State tax attributes, net of federal benefit	22,572	21,716
Share-based compensation	2,416	3,397
Basis difference in unconsolidated affiliates	<u>211</u>	<u>—</u>
<b>Total deferred tax assets</b>	<b>69,496</b>	<b>74,784</b>
Less valuation allowance	<u>(18,681)</u>	<u>(17,650)</u>
<b>Deferred tax assets, net of valuation allowance</b>	<b><u>50,815</u></b>	<b><u>57,134</u></b>
<b>Deferred tax liabilities:</b>		
Property, plant, and equipment	52,319	43,592
Pension	4,633	—
Other	<u>—</u>	<u>1,546</u>
<b>Total deferred tax liabilities</b>	<b><u>56,952</u></b>	<b><u>45,138</u></b>
<b>Net deferred tax (liability) asset</b>	<b><u>\$ (6,137)</u></b>	<b><u>\$ 11,996</u></b>

As of December 31, 2016, after consideration of the federal impact, the Company had state income tax credit carryforwards of \$3.2 million, all of which expire by 2019, and other state income tax credit carryforwards of \$10.2 million with unlimited lives. The Company had state net operating loss (NOL) carryforwards with potential tax benefits of \$9.3 million expiring between 2018 and 2031. The state tax credit and NOL carryforwards are offset by valuation allowances totaling \$12.5 million.

As of December 31, 2016, the Company had foreign tax attributes with potential tax benefits of \$5.6 million which have an unlimited life. These attributes were offset by valuation allowances of \$4.9 million.

Income taxes paid were approximately \$40.1 million in 2016, \$49.9 million in 2015, and \$47.3 million in 2014.

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**Note 15 – Equity**

The Company's Board of Directors has extended, until October 2017, its authorization to repurchase up to 20 million shares of the Company's common stock through open market transactions or through privately negotiated transactions. The Company has no obligation to purchase any shares and may cancel, suspend, or extend the time period for the purchase of shares at any time. Any purchases will be funded primarily through existing cash and cash from operations. The Company may hold any shares purchased in treasury or use a portion of the repurchased shares for its stock-based compensation plans, as well as for other corporate purposes. From its initial authorization in 1999 through December 31, 2016, the Company has repurchased approximately 4.7 million shares under this authorization.

**Note 16 – Stock-Based Compensation**

The Company has in effect stock incentive plans under which stock-based awards have been granted to certain employees and members of its Board of Directors. Under these existing plans, the Company may grant options to purchase shares of common stock at prices not less than the fair market value of the stock on the date of grant, as well as restricted stock awards. Generally, the awards vest within five years from the date of grant. Any unexercised options expire after not more than ten years.

During the years ended December 31, 2016, December 26, 2015, and December 27, 2014, the Company recognized stock-based compensation, as a component of selling, general, and administrative expense, in its Consolidated Statements of Income of \$6.4 million, \$6.2 million, and \$6.3 million, respectively.

**Stock Options**

The fair value of each option is estimated as a single award and amortized into compensation expense on a straight-line or accrual basis over its vesting period based on its vesting schedule. The weighted average grant-date fair value of options granted during 2016, 2015, and 2014 was \$7.87, \$7.58, and \$9.00, respectively.

The Company estimates the fair value of all stock option awards as of the grant date by applying the Black-Scholes-Merton option pricing model. The use of this valuation model in the determination of compensation expense involves certain assumptions that are judgmental and/or highly sensitive including the expected life of the option, stock price volatility, risk-free interest rate, and dividend yield. The weighted average of key assumptions used in determining the fair value of options granted and a discussion of the methodology used to develop each assumption are as follows:

	2016	2015	2014
Expected term	6.7 years	5.5 years	5.6 years
Expected price volatility	25.6%	26.2%	34.3%
Risk-free interest rate	1.6%	1.7%	1.7%
Dividend yield	1.0%	0.9%	1.0%

*Expected term* – This is the period of time estimated based on historical experience over which the options granted are expected to remain outstanding. An increase in the expected term will increase compensation expense.

*Expected price volatility* – This is a measure of the amount by which a price has fluctuated or is expected to fluctuate. The Company uses actual historical changes in the market value of its stock to calculate the volatility assumption. Daily market value changes from the date of grant over a past period representative of the expected term of the options are used. An increase in the expected price volatility rate will increase compensation expense.

*Risk-free interest rate* – This is the U.S. Treasury rate for the week of the grant, having a term representative of the expected term of the options. An increase in the risk-free rate will increase compensation expense.

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*Dividend yield* – This rate is the annual dividends per share as a percentage of the Company's stock price. An increase in the dividend yield will decrease compensation expense.

The total intrinsic value of options exercised was \$2.5 million, \$3.1 million, and \$3.5 million in 2016, 2015, and 2014, respectively. The total fair value of options that vested was \$0.3 million, \$0.8 million, and \$1.0 million in 2016, 2015, and 2014, respectively.

At December 31, 2016, the aggregate intrinsic value of all outstanding options was \$19.5 million with a weighted average remaining contractual term of 5.0 years. Of the outstanding options, 655 thousand are currently exercisable with an aggregate intrinsic value of \$15.8 million, a weighted average exercise price of \$16.02, and a weighted average remaining contractual term of 3.2 years.

The total compensation expense not yet recognized related to unvested options at December 31, 2016 was \$1.4 million with an average expense recognition period of 2.3 years.

**Restricted Stock Awards**

The fair value of each restricted stock award equals the fair value of the Company's stock on the grant date and is amortized into compensation expense on a straight-line or accrual basis over its vesting period based on its vesting schedule. The weighted average grant-date fair value of awards granted during 2016, 2015, and 2014 was \$34.04, \$32.54, and \$28.80, respectively.

The aggregate intrinsic value of outstanding and unvested awards was \$28.4 million at December 31, 2016. Total compensation expense for restricted stock awards not yet recognized was \$15.9 million with an average expense recognition period of 3.4 years. The total fair value of awards that vested was \$4.7 million, \$4.8 million, and \$4.2 million in 2016, 2015, and 2014, respectively.

The Company generally issues treasury shares when options are exercised or restricted stock awards are granted. A summary of the activity and related information follows:

	Stock Options		Restricted Stock Awards	
	Shares	Weighted Average Exercise Price	Shares	Weighted Average Grant Date Fair Value
<i>(Shares in thousands)</i>				
Outstanding at December 26, 2015	1,198	\$ 20.59	705	\$ 28.08
Granted	24	30.86	265	34.04
Exercised	(178)	17.61	(188)	25.23
Forfeited	(10)	30.79	(73)	28.53
Outstanding at December 31, 2016	<u>1,034</u>	21.24	<u>709</u>	31.02

Approximately 1.0 million shares were available for future stock incentive awards at December 31, 2016.

**Note 17 – Accumulated Other Comprehensive Income (Loss)**

AOCI includes certain foreign currency translation adjustments from those subsidiaries not using the U.S. dollar as their functional currency, net deferred gains and losses on certain derivative instruments accounted for as cash flow hedges, adjustments to pension and OPEB liabilities, unrealized gains and losses on marketable securities classified as available-for-sale, and other comprehensive income attributable to unconsolidated affiliates.

The following table provides changes in AOCI by component, net of taxes and noncontrolling interest (amounts in parentheses indicate debits to AOCI):

<i>(In thousands)</i>	Cumulative Translation Adjustment	Unrealized (Losses)/ Gains on Derivatives	Minimum Pension/ OPEB Liability Adjustment	Unrealized Gains on Equity Investments	Attributable to Unconsolidated Affiliates	Total
Balance at December 27, 2014	\$ (7,076)	\$ (953)	\$ (35,164)	\$ 270	\$ —	\$ (42,923)
Other comprehensive income (loss) before reclassifications	(17,697)	(4,604)	4,766	(49)	—	(17,584)
Amounts reclassified from AOCI	—	3,548	1,969	—	—	5,517
Balance at December 26, 2015	(24,773)	(2,009)	(28,429)	221	—	(54,990)
Other comprehensive income (loss) before reclassifications	(25,192)	400	3,962	159	5,975	(14,696)
Amounts reclassified from AOCI	—	1,309	1,421	—	—	2,730
Balance at December 31, 2016	<u>\$ (49,965)</u>	<u>\$ (300)</u>	<u>\$ (23,046)</u>	<u>\$ 380</u>	<u>\$ 5,975</u>	<u>\$ (66,956)</u>

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Reclassification adjustments out of AOCI were as follows:

<i>(In thousands)</i>	Amount reclassified from AOCI			Affected Line Item
	2016	2015	2014	
Unrealized losses on derivatives:				
Commodity contracts	\$ 1,061	\$ 4,486	\$ 328	Cost of goods sold
Interest rate swap	361	372	—	Interest expense
	(113)	(1,310)	(61)	Income tax expense
	1,309	3,548	267	Net of tax
	—	—	—	Noncontrolling interest
	<u>\$ 1,309</u>	<u>\$ 3,548</u>	<u>\$ 267</u>	Net of tax and noncontrolling interest
Amortization of net loss and prior service cost on employee benefit plans	\$ 1,942	\$ 2,688	\$ 541	Selling, general, and administrative expense
	(521)	(719)	(72)	Income tax expense
	1,421	1,969	469	Net of tax
	—	—	—	Noncontrolling interest
	<u>\$ 1,421</u>	<u>\$ 1,969</u>	<u>\$ 469</u>	Net of tax and noncontrolling interest
Loss recognized upon sale of business	\$ —	\$ —	\$ 5,999	Gain on sale of assets
	—	—	—	Income tax benefit
	—	—	5,999	Net of tax
	—	—	—	Noncontrolling interest
	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 5,999</u>	Net of tax and noncontrolling interest

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**Note 18 – Quarterly Financial Information (Unaudited) (8)**

*(In thousands, except per share data)*

	First Quarter	Second Quarter	Third Quarter	Fourth Quarter
<b>2016</b>				
Net sales	\$ 532,809	\$ 544,071	\$ 506,584	\$ 472,158
Gross profit (1)	86,167	88,011	81,916	76,029
Consolidated net income (2)	28,665	28,259	26,062(3)	16,768(4)
Net income attributable to Mueller Industries, Inc.	28,630	27,797	25,978	17,322
Basic earnings per share	0.51	0.49	0.46	0.31
Diluted earnings per share	0.50	0.49	0.45	0.30
Dividends per share	0.075	0.10	0.10	0.10
<b>2015</b>				
Net sales	\$ 537,242	\$ 555,593	\$ 535,184	\$ 471,983
Gross profit (1)	76,408	85,228	68,017	60,647
Consolidated net income (7)	22,340	33,862(5)	18,095(6)	14,110
Net income attributable to Mueller Industries, Inc.	21,978	33,651	17,800	14,435
Basic earnings per share	0.39	0.60	0.32	0.26
Diluted earnings per share	0.39	0.59	0.31	0.25
Dividends per share	0.075	0.075	0.075	0.075

(1) Gross profit is net sales less cost of goods sold, which excludes depreciation and amortization.

(2) Includes income earned by Jungwoo-Mueller, acquired during Q2 2016.

(3) Includes \$3.0 million of pre-tax charges related to asset impairments.

(4) Includes \$3.8 million of pre-tax charges related to asset impairments.

(5) Includes \$15.4 million pre-tax gain on sale of assets and \$3.4 million of pre-tax charges related to severance.

(6) During Q3 2015, the Company recorded a permanent adjustment to a deferred tax liability of \$4.2 million.

(7) Includes income earned by Turbotec, acquired during Q2 2015, Sherwood, acquired during Q2 2015, and Great Lakes, acquired during Q3 2015.

(8) The sum of quarterly amounts may not equal the annual amounts reported due to rounding. In addition, the earnings per share amounts are computed independently for each quarter, while the full year is based on the weighted average shares outstanding.

**Note 19 – Subsequent Event**

On January 25, 2017, the Company announced a special dividend on its common stock payable on March 9, 2017 to stockholders of record on February 28, 2017. The special dividend will consist of \$3.00 in cash and \$5.00 in principal amount of the Company's 6% Subordinated Debentures due 2027 for each share of common stock (less any applicable withholding tax).

The Debentures will be subordinated to all other funded debt of the Company and will be callable, in whole or in part, at any time at the option of the Company, subject to declining call premiums during the first five years. The Debentures will also grant each holder of the Debentures the right to require the Company to repurchase such holder's Debentures in the event of a change of control, at declining repurchase premiums during the first five years. Interest will be payable semiannually on September 1 and March 1, commencing September 1, 2017.

The effect of the special dividend will be to decrease stockholders' equity by approximately \$460.0 million, increase long-term debt by approximately \$287.0 million, and decrease cash by approximately \$173.0 million.

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**Report of Independent Registered Public Accounting Firm**

The Board of Directors and Stockholders of Mueller Industries, Inc.

We have audited the accompanying consolidated balance sheets of Mueller Industries, Inc. as of December 31, 2016 and December 26, 2015, and the related consolidated statements of income, comprehensive income, changes in equity and cash flows for each of the three years in the period ended December 31, 2016. Our audits also included the financial statement schedule listed in the Index at Item 15(a). These financial statements and schedule are the responsibility of the Company's management. Our responsibility is to express an opinion on these financial statements and schedule based on our audits.

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

In our opinion, the financial statements referred to above present fairly, in all material respects, the consolidated financial position of Mueller Industries, Inc. at December 31, 2016 and December 26, 2015, and the consolidated results of its operations and its cash flows for each of the three years in the period ended December 31, 2016, in conformity with U.S. generally accepted accounting principles. Also, in our opinion, the related financial statement schedule, when considered in relation to the basic financial statements taken as a whole, presents fairly in all material respects the information set forth therein.

We also have audited, in accordance with the standards of the Public Company Accounting Oversight Board (United States), Mueller Industries, Inc.'s internal control over financial reporting as of December 31, 2016, based on criteria established in Internal Control – Integrated Framework issued by the Committee of Sponsoring Organizations of the Treadway Commission (2013 Framework) and our report dated March 1, 2017 expressed an unqualified opinion thereon.

*Ernst + Young LLP*

Memphis, Tennessee  
March 1, 2017

**MUELLER INDUSTRIES, INC.**  
**SCHEDULE II - VALUATION AND QUALIFYING ACCOUNTS**  
*Years Ended December 31, 2016, December 26, 2015, and December 27, 2014*

<i>(In thousands)</i>	Balance at beginning of year	Additions			Deductions	Balance at end of year
	<u>                    </u>	<u>Charged to costs and expenses</u>	<u>Other additions</u>		<u>                    </u>	<u>                    </u>
<b>2016</b>						
Allowance for doubtful accounts	\$ 623	\$ 160	\$ 2	(1)	\$ 148	\$ 637
Environmental reserves	\$ 21,667	\$ 894	\$ —		\$ 697	\$ 21,864
Valuation allowance for deferred tax assets	\$ 17,650	\$ 3	\$ 1,028		\$ —	\$ 18,681
<b>2015</b>						
Allowance for doubtful accounts	\$ 666	\$ (130)	\$ 201	(1)	\$ 114	\$ 623
Environmental reserves	\$ 22,661	\$ 76	\$ —		\$ 1,070	\$ 21,667
Valuation allowance for deferred tax assets	\$ 17,119	\$ (5)	\$ 536		\$ —	\$ 17,650
<b>2014</b>						
Allowance for doubtful accounts	\$ 2,391	\$ (500)	\$ 18	(1)	\$ 1,243	\$ 666
Environmental reserves	\$ 23,637	\$ 1,187	\$ —		\$ 2,163	\$ 22,661
Valuation allowance for deferred tax assets	\$ 22,544	\$ (5,630)	\$ 2,282		\$ 2,077	\$ 17,119

*(1) Other consists primarily of bad debt recoveries as well as the effect of fluctuating foreign currency exchange rates in all years presented.*

## EXHIBIT INDEX

<u>Exhibits</u>	<u>Description</u>
10.12	Summary description of the Registrant's 2017 incentive plan for certain key employees.
10.25	Change in Control Agreement, effective January 3, 2017 by and between the Registrant and Christopher J. Miritello.
21.0	Subsidiaries of the Registrant.
23.0	Consent of Independent Registered Public Accounting Firm.
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended.
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) and Rule 15d-14(a) of the Securities Exchange Act of 1934, as amended.
32.1	Certification of Chief Executive Officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
32.2	Certification of Chief Financial Officer pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.CAL	XBRL Taxonomy Extension Calculation Linkbase
101.DEF	XBRL Taxonomy Extension Definition Linkbase
101.INS	XBRL Instance Document
101.LAB	XBRL Taxonomy Extension Label Linkbase
101.PRE	XBRL Presentation Linkbase Document
101.SCH	XBRL Taxonomy Extension Schema

**2017 INCENTIVE PLAN FOR CERTAIN KEY EMPLOYEES**

The Company has a discretionary annual incentive program under which exempt salaried employees may earn cash payments based on a percentage of base annual salary. The actual percent is based on a variety of guidelines including performance levels of the respective business units primarily measured by operating income subject to certain adjustments.

The payment to an employee is based upon (i) their assigned grade level, (ii) actual company earnings achieved relative to a pre-determined target, which is adjusted upward if company performance exceeds target and reduced if company performance is less than target, and (iii) base salary paid during the fiscal year.

January 3, 2017

Re: Change in Control Protections

Dear Chris:

This letter (this "**Agreement**") sets forth Change in Control protections that are being provided to you as a key executive in the Company. Described are the payments and benefits that you may be eligible to receive in the event that your employment with Mueller Industries, Inc. and its direct and indirect subsidiaries (the "**Company**") is terminated in relation to a Change in Control, as set forth below.

In the event the Company has a Change in Control occurrence and upon or within two (2) years following this occurrence, your employment with the Company is terminated by the Company without Cause (other than on account of your death or Disability) or by you for Good Reason, you shall be entitled to a lump sum cash payment in an amount equal to the sum of:

- 1.) An amount equal to two (2) times your base salary (as in effect immediately prior to the Change in Control or, if greater, the date of such termination); and
- 2.) An amount equal to two (2) times the average annual bonus paid to you (including, for this purpose only, any amounts deferred) in respect of the three calendar years immediately preceding the calendar year in which the Change in Control occurs (or the three calendar years immediately preceding the calendar year of such termination, if greater).

In addition, to the extent permitted by applicable law without any penalty to you or the Company and subject to your election of COBRA continuation coverage for you and your covered dependents under the Company's group health plan, continued coverage under the Company's group health plan at the Company's cost (or at the discretion of the Company, reimbursement for COBRA premiums) for two years following your termination. For purposes of this Agreement, "**Good Reason**" means, without your written consent (1) a material reduction in your base salary (as in effect immediately prior to the Change in Control or, if greater, the date of such reduction) or your annual bonus opportunity (as in effect immediately prior to the Change in Control or, if greater, the date of such reduction), or (2) the relocation of your principal place of employment more than fifty (50) miles from the location where you were principally employed immediately prior to the Change in Control. To terminate your employment for Good Reason, within sixty (60) days following the occurrence of an event that constitutes Good Reason, you must give the Company ten (10) days' prior written notice of your termination, setting forth in reasonable specificity the event that constitutes Good Reason, during which ten (10) day notice period the Company will have a cure right (if curable).

Please note that this Agreement is not to be construed as a contract of employment or to alter your "at-will" employment status, and nothing herein prohibits either the Company or you from terminating your employment with the Company at any time for any reason. All payments and or extension of benefits and vesting are subject to your execution and delivery to the Company of a general release of claims in a form reasonably acceptable to the Company that becomes effective within sixty (60) days of such termination. In addition, all payments described herein will be subject to withholding for federal, state, and local taxes and other regular payroll deductions.

You may not assign, transfer, or otherwise dispose of this Agreement, or any of your other rights or obligations hereunder (other than your rights to payments hereunder, which may be transferred only by will or by the laws of descent and distribution), without the prior written consent of the Company, and any such attempted assignment, transfer, or other disposition without such consent will be null and void.

This Agreement sets forth the entire agreement between the parties hereto with respect to the subject matter hereof, and supersedes all other agreements and understandings, written or oral, between the parties hereto with respect to the subject matter hereof. Capitalized terms used but not otherwise defined herein shall have the meaning ascribed to such terms in the Mueller Industries, Inc. 2014 Incentive Plan.

Any waiver, alteration, amendment, or modification of any of the terms of this Agreement will be valid only if made in writing and signed by the parties hereto. No waiver by either of the parties hereto of their rights hereunder will be deemed to constitute a waiver with respect to any subsequent occurrences or transactions hereunder unless such waiver specifically states that it is to be construed as a continuing waiver.

This Agreement will be governed by and construed in accordance with the laws of the State of Tennessee (without giving effect to the choice of law principles thereof) applicable to contracts made and to be performed entirely within such jurisdiction.

\* \* \*

Please acknowledge your agreement with the terms as set forth in this Agreement by signing and dating the enclosed copy and returning it to me. Thank you for your service to the Company in the past and for your contributions in the months ahead.

Sincerely,

**MUELLER INDUSTRIES, INC.**

By: /s/Gregory L. Christopher  
 Name: Gregory L. Christopher  
 Title: Chief Executive Officer

Acknowledged and agreed to as of this  
 3<sup>rd</sup> day of January 2017 by:

**CHRISTOPHER J. MIRITELLO**

/s/ Christopher J. Miritello  
Christopher J. Miritello

**MUELLER INDUSTRIES, INC.**  
**List of Subsidiaries**

Subsidiary*	State or Country of Incorporation
Mueller Brass Holding Company, Inc.	Delaware
Mueller Brass Co. (Assumed name: Mueller Brass Products)	Michigan
Extruded Metals, Inc.	Delaware
Mueller Industrial Realty Co.	Michigan
Itawamba Industrial Gas Company, Inc.	Mississippi
Streamline Copper & Brass Ltd.	Canada
Mueller Plastics Holding Company, Inc.	Ohio
Mueller Plastics Corporation, Inc.	Delaware
MPC Foundry, Inc.	Delaware
MPC Machine Shop, Inc.	Delaware
Mueller Brass Forging Company, Inc.	Delaware
Mueller Copper Tube Company, Inc.	Delaware
Mueller Fittings, LLC	Mississippi
Mueller Fittings Company, Inc.	Michigan
MCTC, LLC	Mississippi
Mueller East, Inc.	Delaware
Mueller Formed Tube Company, Inc.	Delaware
Mueller Impacts Company, Inc.	Delaware
Mueller Press Company, Inc.	Mississippi
Mueller Refrigeration Products Company, Inc.	Delaware
Mueller LBHC, Inc.	Delaware
Lincoln Brass Works, Inc. (Assumed name: Mueller Gas Products)	Michigan
Overstreet-Hughes, Co., Inc. (Assumed name: Fabricated Tube Products)	Tennessee
Mueller Refrigeration LLC	Delaware
Mueller Refrigeration Holding Company, Inc.	Delaware
Mueller Streamline Co.	Delaware
B&K, LLC	Delaware
Precision Tube Company, LLC	Pennsylvania
Mueller Southeast, Inc.	Pennsylvania
Southland Pipe Nipples Company, Inc.	Texas
Mueller Tool and Machine, Inc.	Delaware
Mueller Casting Company, Inc.	Delaware
Mueller Packaging, LLC	Mississippi
Micro Gauge, Inc.	Michigan
Microgauge Machining, Inc.	Michigan
Propipe Technologies, Inc. (Assumed name: Mueller Gas Products)	Ohio
WTC Holding Company	Michigan
Muellux Holding Company I SARL	Luxembourg
Muellux Holding Company II SARL	Luxembourg
Mueller Middle East B.S.C. (7)	Bahrain
Mueller Europe Investment Company Ltd.	United Kingdom
Jungwoo Metal Ind. Co., Ltd. (5)	South Korea
Mueller Europe, Limited	United Kingdom
Westermeyer Industries, Inc.	Illinois
Sherwood Valve Products, Inc.	Ohio
Sherwood Valve LLC	Delaware

## Subsidiary\*

State or Country  
of Incorporation

DENO Investment Company, Inc.	Michigan
Mueller de Mexico, S.A. de C.V. (1)	Mexico
DENO Holding Company, Inc.	Michigan
B & K Industries, Inc.	Illinois
Mueller Copper Tube West Co.	Utah
Mueller Copper Tube Products, Inc.	Delaware
MCTP, LLC	Michigan
Howell Metal Company	Virginia
Great Lakes Copper Ltd.	Nova Scotia
Turbotec Products, Inc.	Connecticut
Linesets, Inc.	Delaware
Climate Components, LLC	Delaware
Arava Natural Resources Company, Inc.	Delaware
United States Fuel Company	Nevada
King Coal Company	Utah
Canco Oil & Gas Ltd.	Alberta, Canada
Aegis Oil and Gas Leasing Ltd.	Alberta, Canada
Bayard Mining Corp.	Delaware
Washington Mining Company	Maine
Amwest Exploration Company	Delaware
USSRAM Exploration Company	Maine
White Knob Mining Company	Idaho
Arava Exploration Company	Colorado
Summit Systems, Inc.	Delaware
Kennet Company Limited	Bermuda
Mining Remedial Recovery Company	Delaware
Carpentertown Coal & Coke Company	Pennsylvania
U.S.S. Lead Refinery, Inc.	Maine
Leon Water Enterprises, Inc. (50%)	Texas
Macomber Construction Company	Ohio
Macomber, Incorporated	Ohio
Macomber Building and Land Corporation	Delaware
DENO Investment Company II, Inc.	Michigan
Tecumseh Products Holdings LLC (6)	Delaware
Tecumseh Products Co.	Michigan
MA Industrial Secured Lending LLC	Delaware
MII Financial Corporation	Michigan
Mueller Streamline Holding S.L.U.	Spain
WTC HoldCo I, LLC	Delaware
WTC HoldCo II, LLC	Delaware
Mueller Comercial de Mexico S. de R.L. de C.V. (2)	Mexico
NICNA Mexico, S. de R.L. de C.V. (3)	Mexico
NICNA Mexico Servicios, S. de R.L. de C.V. (3)	Mexico
NICNA Mexico Proyectos, S. de R.L. de C.V. (3)	Mexico
Mueller Streamline II, LLC	Delaware
Changzhou Mueller Refrigerant Valve Manufacturing Co., Ltd.	China
Mueller Industries Trading (Shanghai) Co., Ltd.	China
Mueller Streamline Trading, LLC	Delaware
Mueller Streamline China, LLC	Delaware
Jiangsu Mueller-Xingrong Copper Industries Limited (4)	China

\*All subsidiaries are 100% owned, except as shown.

- (1) Owned by DENO Investment Company, Inc. (99.94%) and Mueller Streamline Co. (.06%).
  - (2) Owned by Mueller Streamline Holding S.L.U. (99.983%), WTC HoldCo I, LLC (0.016% ), and WTC HoldCo II, LLC (0.001% ).
  - (3) Less than 1% of the outstanding common stock is owned by WTC HoldCo I, LLC.
  - (4) Owned by Mueller Streamline China, LLC (50.5%).
  - (5) Owned by Muellux Europe Investment Company Ltd. (60%)
  - (6) Owned by DENO Investment Company, Inc. (50%)
  - (7) Owned by Muellux Holding Company II SARL (40%)
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**Consent of Independent Registered Public Accounting Firm**

We consent to the incorporation by reference in the following Registration Statements:

- 1) Form S-3 No. 333-182906 pertaining to the registration of 20,845,718 shares of Mueller Industries, Inc. common stock,
- 2) Form S-8 No. 333-197609 pertaining to the Mueller Industries, Inc. 2014 Incentive Plan,
- 3) Form S-8 No. 333-160718 pertaining to the Mueller Industries, Inc. 2009 Stock Incentive Plan,
- 4) Form S-8 No. 333-138413 pertaining to the Mueller Industries, Inc. 2002 Stock Option Plan,
- 5) Form S-8 No. 333-91238 pertaining to the Mueller Industries, Inc. 2002 Stock Option Plan,
- 6) Form S-8 No. 33-54705 pertaining to the Mueller Industries, Inc. 1994 Stock Option Plan and the 1994 Non-Employee Director Stock Option Plan;

of our reports dated March 1, 2017, with respect to the consolidated financial statements and schedule of Mueller Industries, Inc. and the effectiveness of internal control over financial reporting of Mueller Industries, Inc., included in this Annual Report (Form 10-K) for the year ended December 31, 2016.

/s/Ernst & Young LLP  
Ernst & Young LLP

Memphis, Tennessee  
March 1, 2017

**CERTIFICATION**

I, Gregory L Christopher, certify that:

1. I have reviewed this annual report on Form 10-K of Mueller Industries, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)), for the registrant and have:
  - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 1, 2017

/s/ Gregory L. Christopher  
Gregory L. Christopher  
Chief Executive Officer

## CERTIFICATION

I, Jeffrey A. Martin, certify that:

1. I have reviewed this annual report on Form 10-K of Mueller Industries, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)), for the registrant and have:
  - a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
  - b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
  - c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
  - d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
  - a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
  - b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: March 1, 2017

/s/ Jeffrey A. Martin  
Jeffrey A. Martin  
Chief Financial Officer

**CERTIFICATION PURSUANT TO  
18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO SECTION 906  
OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Mueller Industries, Inc. (the "Company") on Form 10-K for the period ending December 31, 2016 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Gregory L. Christopher, Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Gregory L. Christopher  
Gregory L. Christopher  
Chief Executive Officer  
Date: March 1, 2017

**CERTIFICATION PURSUANT TO  
18 U.S.C. SECTION 1350,  
AS ADOPTED PURSUANT TO SECTION 906  
OF THE SARBANES-OXLEY ACT OF 2002**

In connection with the Annual Report of Mueller Industries, Inc. (the "Company") on Form 10-K for the period ending December 31, 2016 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Jeffrey A. Martin, Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that:

- (1) The Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and
- (2) The information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

/s/ Jeffrey A. Martin  
Jeffrey A. Martin  
Chief Financial Officer  
Date: March 1, 2017