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

FORM 10-Q

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

For the quarterly period ended June 30, 2020

or

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

For the transition period from ____________ to ____________

Commission File Number: 1-14303

AMERICAN AXLE & MANUFACTURING HOLDINGS, INC.

(Exact Name of Registrant as Specified in Its Charter)

Delaware	**38-3161171**
(State or Other Jurisdiction of Incorporation or Organization)	(I.R.S. Employer Identification No.)
One Dauch Drive, Detroit, Michigan	**48211-1198**
(Address of Principal Executive Offices)	(Zip Code)

(313) 758-2000
(Registrant's Telephone Number, Including Area Code)

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

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

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

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

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

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

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, par value $0.01 per share	AXL	New York Stock Exchange

As of July 28, 2020, the latest practicable date, the number of shares of the registrant's Common Stock, par value $0.01 per share, outstanding was 113,272,990 shares.

Internet Website Access to Reports

The website for American Axle & Manufacturing Holdings, Inc. is *www.aam.com*. 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 or 15(d) of the Exchange Act are available free of charge through our website as soon as reasonably practicable after they are electronically filed with, or furnished to, the Securities and Exchange Commission (SEC). The SEC also maintains a website at www.sec.gov that contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC.

AMERICAN AXLE & MANUFACTURING HOLDINGS, INC.
FORM 10-Q
FOR THE QUARTER ENDED JUNE 30, 2020
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FORWARD-LOOKING STATEMENTS

In this Quarterly Report on Form 10-Q (Quarterly Report), we make statements concerning our expectations, beliefs, plans, objectives, goals, strategies, and future events or performance. Such statements are “forward-looking” statements within the meaning of the Private Securities Litigation Reform Act of 1995 and relate to trends and events that may affect our future financial position and operating results. The terms such as “will,” “may,” “could,” “would,” “plan,” “believe,” “expect,” “anticipate,” “intend,” “project,” "target," and similar words or expressions, as well as statements in future tense, are intended to identify forward-looking statements.

Forward-looking statements should not be read as a guarantee of future performance or results, and will not necessarily be accurate indications of the times at, or by, which such performance or results will be achieved. Forward-looking statements are based on information available at the time those statements are made and/or management’s good faith belief as of that time with respect to future events and are subject to risks and may differ materially from those expressed in or suggested by the forward-looking statements. Important factors that could cause such differences include, but are not limited to:

- a significant disruption in production, sales and/or supply as a result of public health crises, including pandemic or epidemic illness such as Novel Coronavirus (COVID-19);
- global economic conditions;
- reduced purchases of our products by General Motors Company (GM), FCA US LLC (FCA), Ford Motor Company (Ford) or other customers;
- our ability to respond to changes in technology, increased competition or pricing pressures;
- our ability to develop and produce new products that reflect market demand;
- lower-than-anticipated market acceptance of new or existing products;
- our ability to attract new customers and programs for new products;
- reduced demand for our customers' products (particularly light trucks and sport utility vehicles (SUVs) produced by GM, FCA and Ford);
- risks inherent in our global operations (including tariffs and the potential consequences thereof to us, our suppliers, and our customers and their suppliers, adverse changes in trade agreements, such as USMCA, immigration policies, political stability, taxes and other law changes, potential disruptions of production and supply, and currency rate fluctuations);
- a significant disruption in operations at one or more of our key manufacturing facilities;
- negative or unexpected tax consequences;
- risks related to a failure of our information technology systems and networks, and risks associated with current and emerging technology threats and damage from computer viruses, unauthorized access, cyber attack and other similar disruptions;
- supply shortages or price increases in raw material and/or freight, utilities or other operating supplies for us or our customers as a result of pandemics, natural disasters or otherwise;
- availability of financing for working capital, capital expenditures, research and development (R&D) or other general corporate purposes including acquisitions, as well as our ability to comply with financial covenants;
- our customers' and suppliers' availability of financing for working capital, capital expenditures, R&D or other general corporate purposes;
- an impairment of our goodwill, other intangible assets, or long-lived assets if our business or market conditions indicate that the carrying values of those assets exceed their fair values;
- liabilities arising from warranty claims, product recall or field actions, product liability and legal proceedings to which we are or may become a party, or the impact of product recall or field actions on our customers;
- our ability or our customers' and suppliers' ability to successfully launch new product programs on a timely basis;
- our ability to maintain satisfactory labor relations and avoid work stoppages;
- our suppliers', our customers' and their suppliers' ability to maintain satisfactory labor relations and avoid work stoppages;
- our ability to achieve the level of cost reductions required to sustain global cost competitiveness;
- our ability to realize the expected revenues from our new and incremental business backlog;
- price volatility in, or reduced availability of, fuel;
- our ability to protect our intellectual property and successfully defend against assertions made against us;
- risks of noncompliance with environmental laws and regulations or risks of environmental issues that could result in unforeseen costs at our facilities, or reputational damage;
- adverse changes in laws, government regulations or market conditions affecting our products or our customers' products;
- our ability or our customers' and suppliers' ability to comply with regulatory requirements and the potential costs of such compliance;
- changes in liabilities arising from pension and other postretirement benefit obligations;
- our ability to attract and retain key associates; and
- other unanticipated events and conditions that may hinder our ability to compete.

It is not possible to foresee or identify all such factors and any or all of the foregoing factors may be exacerbated by COVID-19. Further, we make no commitment to update any forward-looking statement or to disclose any facts, events or circumstances after the date hereof that may affect the accuracy of any forward-looking statement.

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

AMERICAN AXLE & MANUFACTURING HOLDINGS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF OPERATIONS
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	**2019**	**2020**	**2019**
	(in millions, except per share data)			
Net sales	**$ 515.3**	$ 1,704.3	**$ 1,858.8**	$ 3,423.5
Cost of goods sold	**614.2**	1,456.0	**1,762.4**	2,953.0
Gross profit (loss)	**(98.9)**	248.3	**96.4**	470.5
Selling, general and administrative expenses	**73.8**	91.3	**164.1**	182.0
Amortization of intangible assets	**21.6**	24.9	**43.4**	49.9
Impairment charge (Note 3)	**—**	—	**510.0**	—
Restructuring and acquisition-related costs	**11.3**	12.2	**28.9**	24.3
Loss on sale of business	**—**	—	**1.0**	—
Operating income (loss)	**(205.6)**	119.9	**(651.0)**	214.3
Interest expense	**(54.6)**	(56.2)	**(106.1)**	(109.6)
Interest income	**3.0**	0.5	**5.8**	1.2
Other income (expense)				
Debt refinancing and redemption costs	**—**	(2.4)	**(1.5)**	(2.4)
Other income (expense), net	**0.1**	(3.1)	**(2.2)**	(6.1)
Income (loss) before income taxes	**(257.1)**	58.7	**(755.0)**	97.4
Income tax expense (benefit)	**(43.9)**	6.0	**(40.6)**	3.0
Net income (loss)	**$ (213.2)**	$ 52.7	**$ (714.4)**	$ 94.4
Net income attributable to noncontrolling interests	**—**	(0.2)	**(0.1)**	(0.3)
Net income (loss) attributable to AAM	**$ (213.2)**	$ 52.5	**$ (714.5)**	$ 94.1
Basic earnings (loss) per share	**$ (1.88)**	$ 0.45	**$ (6.33)**	$ 0.81
Diluted earnings (loss) per share	**$ (1.88)**	$ 0.45	**$ (6.33)**	$ 0.81

See accompanying notes to condensed consolidated financial statements.

AMERICAN AXLE & MANUFACTURING HOLDINGS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME (LOSS)
(Unaudited)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	**2019**	**2020**	**2019**
	(in millions)			
Net income (loss)	**$ (213.2)**	$ 52.7	**$ (714.4)**	$ 94.4
Other comprehensive income (loss)				
Defined benefit plans, net of tax [(a)]	**1.7**	1.1	**3.3**	1.8
Foreign currency translation adjustments	**4.8**	4.9	**(44.0)**	2.4
Changes in cash flow hedges, net of tax [(b)]	**8.7**	(15.8)	**(26.0)**	(18.3)
Other comprehensive income (loss)	**15.2**	(9.8)	**(66.7)**	(14.1)
Comprehensive income (loss)	**$ (198.0)**	$ 42.9	**$ (781.1)**	$ 80.3
Net income attributable to noncontrolling interests	**—**	(0.2)	**(0.1)**	(0.3)
Foreign currency translation adjustments attributable to noncontrolling interests	**—**	—	**0.3**	—
Comprehensive income (loss) attributable to AAM	**$ (198.0)**	$ 42.7	**$ (780.9)**	$ 80.0

(a) Amounts are net of tax of $(0.4) million and $(0.8) million for the three and six months ended June 30, 2020, and $(0.2) million and $(0.5) million for the three and six months ended and June 30, 2019, respectively.

(b) Amounts are net of tax of $(0.5) million and $1.8 million for the three and six months ended June 30, 2020, and $4.7 million and $6.2 million for the three and six months ended June 30, 2019, respectively.

See accompanying notes to condensed consolidated financial statements.

AMERICAN AXLE & MANUFACTURING HOLDINGS, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS

	June 30, 2020	December 31, 2019
	(Unaudited)	
Assets	*(in millions)*	
Current assets		
Cash and cash equivalents	**$ 893.3**	$ 532.0
Accounts receivable, net	**550.2**	815.4
Inventories, net	**358.5**	373.6
Prepaid expenses and other	**159.5**	136.8
Total current assets	**1,961.5**	1,857.8
Property, plant and equipment, net	**2,209.9**	2,358.4
Deferred income taxes	**101.9**	64.1
Goodwill	**181.9**	699.1
Other intangible assets, net	**821.8**	864.5
GM postretirement cost sharing asset	**223.3**	223.3
Other assets and deferred charges	**554.7**	577.4
Total assets	**$ 6,055.0**	$ 6,644.6
Liabilities and Stockholders' Equity		
Current liabilities		
Borrowings under Revolving Credit Facility	**$ 200.0**	$ —
Current portion of long-term debt	**373.7**	28.7
Accounts payable	**353.2**	623.5
Accrued compensation and benefits	**139.8**	154.4
Deferred revenue	**22.5**	18.9
Accrued expenses and other	**171.1**	200.9
Total current liabilities	**1,260.3**	1,026.4
Long-term debt, net	**3,561.4**	3,612.3
Deferred revenue	**78.5**	83.7
Deferred income taxes	**44.6**	19.6
Postretirement benefits and other long-term liabilities	**911.4**	922.2
Total liabilities	**5,856.2**	5,664.2
Stockholders' equity		
Common stock, par value $0.01 per share; 150.0 million shares authorized;		
121.3 million shares issued as of June 30, 2020 and 120.2 million shares issued as of December 31, 2019	**1.2**	1.2
Paid-in capital	**1,323.2**	1,313.9
Retained earnings (Accumulated deficit)	**(473.0)**	248.6
Treasury stock at cost, 8.0 million shares as of June 30, 2020 and 7.6 million shares as of December 31, 2019	**(212.0)**	(209.3)
Accumulated other comprehensive loss		
Defined benefit plans, net of tax	**(256.6)**	(259.9)
Foreign currency translation adjustments	**(144.9)**	(101.2)
Unrecognized loss on cash flow hedges, net of tax	**(41.7)**	(15.7)
Total AAM stockholders' equity	**196.2**	977.6
Noncontrolling interests in subsidiaries	**2.6**	2.8
Total stockholders' equity	**198.8**	980.4
Total liabilities and stockholders' equity	**$ 6,055.0**	$ 6,644.6

See accompanying notes to condensed consolidated financial statements.

AMERICAN AXLE & MANUFACTURING HOLDINGS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(Unaudited)

	Six Months Ended June 30,	
	2020	**2019**
	(in millions)	
Operating activities		
Net income (loss)	**$ (714.4)**	$ 94.4
Adjustments to reconcile net income (loss) to net cash provided by (used in) operating activities		
Depreciation and amortization	**268.7**	277.3
Impairment charge	**510.0**	—
Deferred income taxes	**(11.2)**	(31.8)
Stock-based compensation	**9.3**	11.2
Pensions and other postretirement benefits, net of contributions	**(2.5)**	(9.5)
Loss on disposal of property, plant and equipment, net	**11.9**	1.1
Debt refinancing and redemption costs	**1.5**	2.4
Changes in operating assets and liabilities		
Accounts receivable	**256.6**	(170.5)
Inventories	**10.3**	—
Accounts payable and accrued expenses	**(298.0)**	24.5
Deferred revenue	**(1.5)**	0.1
Other assets and liabilities	**(43.8)**	(62.3)
Net cash provided by (used in) operating activities	**(3.1)**	136.9
Investing activities		
Purchases of property, plant and equipment	**(105.6)**	(237.5)
Proceeds from sale of property, plant and equipment	**1.4**	1.7
Investment in joint venture	**—**	(2.2)
Purchase buyouts of leased equipment	**(0.2)**	—
Final settlement on sale of business	**(4.4)**	—
Net cash used in investing activities	**(108.8)**	(238.0)
Financing activities		
Proceeds from Revolving Credit Facility	**350.0**	—
Payments of Revolving Credit Facility	**(150.0)**	—
Proceeds from issuance of long-term debt	**408.8**	8.0
Payments of long-term debt	**(115.6)**	(128.2)
Debt issuance costs	**(10.6)**	—
Purchase of treasury stock	**(2.7)**	(7.5)
Other financing activities	**0.3**	—
Net cash provided by (used in) financing activities	**480.2**	(127.7)
Effect of exchange rate changes on cash	**(7.0)**	1.2
Net increase (decrease) in cash, cash equivalents and restricted cash	**361.3**	(227.6)
Cash, cash equivalents and restricted cash at beginning of period	**532.0**	478.9
Cash, cash equivalents and restricted cash at end of period	**$ 893.3**	$ 251.3
Supplemental cash flow information		

Interest paid	**$**	**102.0**	$	102.1
Income taxes paid, net of refunds	**$**	**17.6**	$	34.6

See accompanying notes to condensed consolidated financial statements.

AMERICAN AXLE & MANUFACTURING HOLDINGS, INC.
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(Unaudited)

	Common Stock					Accumulated	Noncontrolling
	Shares Outstanding	Par Value	Paid-in Capital	Retained Earnings (Accumulated Deficit)	Treasury Stock	Other Comprehensive Income (Loss)	Interest in Subsidiaries
Balance at January 1, 2019	111.7	$ 1.2	$ 1,292.6	$ 703.5	$ (201.8)	$ (311.6)	$ 2.4
Net income	—	—	—	41.6	—	—	0.1
Vesting of restricted stock units and performance shares	1.2	—	—	—	—	—	—
Stock-based compensation	—	—	5.5	—	—	—	—
Modified-retrospective application of ASU 2016-02	—	—	—	1.9	—	—	—
Adoption of ASU 2018-02	—	—	—	27.7	—	(27.7)	—
Purchase of treasury stock	(0.4)	—	—	—	(7.3)	—	—
Changes in cash flow hedges	—	—	—	—	—	(2.5)	—
Foreign currency translation adjustments	—	—	—	—	—	(2.5)	—
Defined benefit plans, net	—	—	—	—	—	0.7	—
Balance at March 31, 2019	112.5	$ 1.2	$ 1,298.1	$ 774.7	$ (209.1)	$ (343.6)	$ 2.5
Net income	—	—	—	52.5	—	—	0.2
Stock-based compensation	—	—	5.7	—	—	—	—
Purchase of treasury stock	—	—	—	—	(0.2)	—	—
Changes in cash flow hedges	—	—	—	—	—	(15.8)	—
Foreign currency translation adjustments	—	—	—	—	—	4.9	—
Defined benefit plans, net	—	—	—	—	—	1.1	—
Balance at June 30, 2019	112.5	$ 1.2	$ 1,303.8	$ 827.2	$ (209.3)	$ (353.4)	$ 2.7
Balance at January 1, 2020	**112.6**	**$ 1.2**	**$ 1,313.9**	**$ 248.6**	**$ (209.3)**	**$ (376.8)**	**$ 2.8**
Net income (loss)	**—**	**—**	**—**	**(501.3)**	**—**	**—**	**0.1**
Vesting of restricted stock units and performance shares	**0.8**	**—**	**—**	**—**	**—**	**—**	**—**
Stock-based compensation	**—**	**—**	**4.6**	**—**	**—**	**—**	**—**
Modified-retrospective application of ASU 2016-13	**—**	**—**	**—**	**(7.1)**	**—**	**—**	**—**
Purchase of treasury stock	**(0.4)**	**—**	**—**	**—**	**(2.4)**	**—**	**—**
Changes in cash flow hedges	**—**	**—**	**—**	**—**	**—**	**(34.7)**	**—**
Foreign currency translation adjustments	**—**	**—**	**—**	**—**	**—**	**(48.5)**	**(0.3)**
Defined benefit plans, net	**—**	**—**	**—**	**—**	**—**	**1.6**	**—**
Balance at March 31, 2020	**113.0**	**$ 1.2**	**$ 1,318.5**	**$ (259.8)**	**$ (211.7)**	**$ (458.4)**	**$ 2.6**
Net loss	**—**	**—**	**—**	**(213.2)**	**—**	**—**	**—**
Vesting of restricted stock units and performance shares	**0.3**	**—**	**—**	**—**	**—**	**—**	**—**
Stock-based compensation	**—**	**—**	**4.7**	**—**	**—**	**—**	**—**
Purchase of treasury stock	**—**	**—**	**—**	**—**	**(0.3)**	**—**	**—**
Changes in cash flow hedges	**—**	**—**	**—**	**—**	**—**	**8.7**	**—**
Foreign currency translation adjustments	**—**	**—**	**—**	**—**	**—**	**4.8**	**—**
Defined benefit plans, net	**—**	**—**	**—**	**—**	**—**	**1.7**	**—**
Balance at June 30, 2020	**113.3**	**$ 1.2**	**$ 1,323.2**	**$ (473.0)**	**$ (212.0)**	**$ (443.2)**	**$ 2.6**

See accompanying notes to condensed consolidated financial statements.

AMERICAN AXLE & MANUFACTURING HOLDINGS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
JUNE 30, 2020
(Unaudited)

1. ORGANIZATION AND BASIS OF PRESENTATION

Organization We are a global Tier 1 supplier to the automotive industry. We design, engineer and manufacture driveline and metal forming products that are making the next generation of vehicles smarter, lighter, safer and more efficient. We employ approximately 20,000 associates, operating at nearly 80 facilities in 17 countries, to support our customers on global and regional platforms with a continued focus on delivering quality, operational excellence and technology leadership.

Basis of Presentation We have prepared the accompanying interim condensed consolidated financial statements in accordance with the instructions to Form 10-Q under the Securities Exchange Act of 1934. These condensed consolidated financial statements are unaudited but include all normal recurring adjustments, which we consider necessary for a fair presentation of the information set forth herein. Results of operations for the periods presented are not necessarily indicative of the results for the full fiscal year.

The balance sheet at December 31, 2019 presented herein has been derived from the audited consolidated financial statements at that date but does not include all of the information and footnotes required by accounting principles generally accepted in the United States of America (GAAP) for complete consolidated financial statements.

In order to prepare the accompanying interim condensed consolidated financial statements, we are required to make estimates and assumptions that affect the reported amounts and disclosures in our interim condensed consolidated financial statements. These estimates and assumptions are impacted by risks and uncertainties, including those associated with the Novel Coronavirus (COVID-19) pandemic that began in the first quarter of 2020. While we have made estimates and assumptions based on the facts and circumstances available as of the date of this report, the full impact of COVID-19 cannot be predicted, and actual results could differ materially from those estimates and assumptions.

For further information, refer to the audited consolidated financial statements and notes included in our Annual Report on Form 10-K for the year ended December 31, 2019.

Effect of New Accounting Standards and Other Regulatory Pronouncements

Accounting Standard Update 2020-04

On March 12, 2020, the Financial Accounting Standards Board (FASB) issued Accounting Standard Update (ASU) 2020-04 - *Reference Rate Reform (Topic 848)*. This guidance provides optional expedients and exceptions that are intended to ease the burden of updating contracts to contain a new reference rate due to the discontinuation of the London Inter-Bank Offered Rate (LIBOR). This guidance is available immediately and may be implemented in any period prior to the guidance expiration on December 31, 2022. We are currently assessing which of our various contracts will require an update for a new reference rate and will determine the timing for our implementation of this guidance at the completion of that analysis.

Accounting Standard Update 2019-12

On December 18, 2019, the FASB issued ASU 2019-12 - *Income Taxes (Topic 740)*. This guidance is intended to simplify the accounting and disclosure requirements for income taxes by removing various exceptions and requires that the effect of an enacted change in tax laws or rates be included in the annual effective tax rate computation in the interim period of the enactment. This guidance becomes effective at the beginning of our 2021 fiscal year. We expect to adopt this guidance on January 1, 2021 and we are currently assessing the impact that this standard will have on our consolidated financial statements.

Accounting Standards Update 2016-13

On June 16, 2016, the FASB issued 2016-13 - *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments*. ASU 2016-13 replaces the incurred loss model under previous guidance, and requires entities to consider expected credit losses, in addition to past events and current conditions when measuring credit losses. This guidance applies to certain of our financial instruments and is primarily applicable to our trade accounts receivable. We adopted this guidance on January 1, 2020, using a modified-retrospective transition method and the adoption of this standard did not have a material impact on our condensed consolidated financial statements. See the Statement of Stockholders' Equity for the implementation impact of ASU 2016-13.

Securities and Exchange Commission (SEC) Rule

In the first quarter of 2020, the SEC adopted "Financial Disclosures about Guarantors and Issuers of Guaranteed Securities and Affiliates Whose Securities Collateralize a Registrant's Securities," a rule that amends the financial disclosure requirements for guarantors and issuers of registered guaranteed securities. This rule eliminates the previous requirement to present guarantor financial statement information in the notes to the financial statements and allows for the disclosure of summarized financial information for the most recent year and interim period, as well as expanded non-financial disclosures, in Management's Discussion and Analysis (MD&A). The effective date for this rule is January 4, 2021, however, the SEC permitted voluntary compliance prior to this date and we elected to adopt the new disclosure requirements in the first quarter of 2020. As such, we no longer present guarantor financial statement information in the notes to the condensed consolidated financial statements in this Quarterly Report on Form 10-Q, but instead present the required information within MD&A.

Coronavirus Aid, Relief, and Economic Security Act

The Coronavirus Aid, Relief, and Economic Security Act (the CARES Act) was enacted on March 27, 2020 in the United States. The key provisions of the CARES Act, as applicable to AAM, include the following:

- The ability to use net operating losses (NOLs) to offset income without the 80% taxable income limitation enacted as part of the Tax Cuts and Jobs Act (TCJA) of 2017, and to carry back NOLs to offset prior year income for five years. These are temporary provisions that apply to NOLs incurred in 2018, 2019 or 2020 tax years.
- The ability to claim a current deduction for interest expense up to 50% of Adjusted Taxable Income (ATI) for tax years 2019 and 2020. This limitation was previously 30% of ATI pursuant to the TCJA, and will revert to 30% after 2020.
- The ability to defer the payment of the employer portion of social security taxes incurred between March 27, 2020 and December 31, 2020, with 50% of the deferred amount to be paid by December 31, 2021 and the remaining 50% to be paid by December 31, 2022.

2. RESTRUCTURING AND ACQUISITION-RELATED COSTS

In the first quarter of 2019, we initiated a global restructuring program (the 2019 Program). The primary objectives of the 2019 Program were to further the integration of Metaldyne Performance Group, Inc. (MPG), align AAM's product and process technologies, and to achieve efficiencies within our corporate and business unit support teams to reduce cost in our business.

In the first quarter of 2020, we initiated a new global restructuring program (the 2020 Program) that supersedes the 2019 Program. The primary objectives of the 2020 Program are to achieve efficiencies within our corporate and business unit support teams to reduce cost in our business, and to structurally adjust our operations to a new level of market demand based on the impact of COVID-19. We expect to incur costs under the 2020 Program through 2021.

A summary of our restructuring activity for the first six months of 2020 and 2019 is shown below:

	Severance Charges	Implementation Costs	Total
		(in millions)	
Accrual at December 31, 2018	$ 2.4	$ 1.6	$ 4.0
Charges	8.2	8.9	17.1
Cash utilization	(7.9)	(7.1)	(15.0)
Accrual at June 30, 2019	$ 2.7	$ 3.4	$ 6.1
Accrual at December 31, 2019	**$ 4.8**	**$ 7.4**	**$ 12.2**
Charges	**16.3**	**7.7**	**24.0**
Cash utilization	**(16.0)**	**(8.9)**	**(24.9)**
Accrual at June 30, 2020	**$ 5.1**	**$ 6.2**	**$ 11.3**

As part of our restructuring actions, we incurred total severance charges of approximately $16.3 million and $8.2 million during the six months ended June 30, 2020 and 2019, respectively. We also incurred total implementation costs of approximately $7.7 million and $8.9 million during the six months ended June 30, 2020 and 2019, respectively. Implementation costs in both periods consist primarily of plant exit costs.

Approximately $16.2 million of the restructuring costs incurred during the six months ended June 30, 2020 were under the 2020 Program. Approximately $9.9 million and $10.4 million of our total restructuring costs for the six months ended June 30, 2020 related to our Driveline and Metal Forming segments, respectively, while the remainder were corporate costs. Approximately $1.5 million, $9.8 million and $0.7 million of our total restructuring costs for the six months ended June 30, 2019 related to our Driveline, Metal Forming and former Casting segments, respectively, while the remainder were corporate costs. We expect to incur approximately $70 million to $80 million of total restructuring charges in 2020, including costs incurred under the 2020 Program.

During the six months ended June 30, 2020 and 2019, we incurred the following integration charges primarily related to the integration of MPG:

	Integration Expenses
	(in millions)
Charges for the six months ended June 30, 2020	**$ 4.9**
Charges for the six months ended June 30, 2019	7.2

These integration expenses primarily reflect costs incurred for information technology infrastructure and enterprise resource planning systems. Total restructuring charges and acquisition-related charges are presented on a separate line item titled Restructuring and acquisition-related costs in our Condensed Consolidated Statements of Operations, and totaled $11.3 million and $28.9 million for the three and six months ended June 30, 2020, respectively, and $12.2 million and $24.3 million for the three and six months ended June 30, 2019, respectively.

3. GOODWILL AND OTHER INTANGIBLE ASSETS

Goodwill The following table provides a reconciliation of changes in goodwill for the six months ended June 30, 2020:

	Driveline	Metal Forming	Consolidated
		(in millions)	
Balance at December 31, 2019	$ 398.3	$ 300.8	$ 699.1
Impairment charge	(210.8)	(299.2)	(510.0)
Foreign currency translation	(5.6)	(1.6)	(7.2)
Balance at June 30, 2020	$ 181.9	$ —	$ 181.9

In the first quarter of 2020, the reduction in global automotive production volumes caused by the impact of COVID-19 represented an indicator to test our goodwill for impairment. This reduction in production volumes began in March of 2020 and resulted in lower forecasted sales volumes in the periods included in our long-range plan as revised in the first quarter of 2020.

In performing this test, we utilize a third-party valuation specialist to assist management in determining the fair value of our reporting units. Fair value of each reporting unit is estimated based on a combination of discounted cash flows and the use of pricing multiples derived from an analysis of comparable public companies multiplied against historical and/or anticipated financial metrics of each reporting unit. These calculations contain uncertainties as they require management to make assumptions including, but not limited to, market comparables, future cash flows of the reporting units, and appropriate discount and long-term growth rates. This fair value determination is categorized as Level 3 within the fair value hierarchy.

As a result of this goodwill impairment test in the first quarter of 2020, we determined that the carrying values of both our Driveline and Metal Forming reporting units were greater than their respective fair values. As such, we recorded a goodwill impairment charge of $210.8 million associated with our Driveline reporting unit and a goodwill impairment charge of $299.2 million associated with our Metal Forming reporting unit in the first quarter of 2020. The Metal Forming impairment charge represented a full impairment of the goodwill associated with that reporting unit.

These impairment charges were primarily the result of a decline in the projected cash flows of these reporting units under our revised long-range plan completed in the first quarter of 2020. The revision to our long-range plan was driven by lower forecasted sales volumes in the internal and external data sources used to form our projections primarily due to the reduction in global automotive production volumes caused by the impact of COVID-19. The impairment charges were also the result of changes in certain market-related inputs to the analysis to reflect macro-economic changes caused by the impact of COVID-19, including increased discount rates and lower pricing multiples for comparable public companies. At June 30, 2020, accumulated goodwill impairment losses were $1,435.5 million.

The reduction in production volumes and changes to macro-economic factors caused by the impact of COVID-19 also represented an indicator to test our long-lived assets, including other intangible assets and property, plant and equipment, for impairment. We completed this test in the first quarter of 2020 and there was no impairment of these assets.

Other Intangible Assets The following table provides a reconciliation of the gross carrying amount and associated accumulated amortization for AAM's other intangible assets, which are all subject to amortization:

	June 30, 2020			December 31, 2019		
	Gross Carrying Amount	**Accumulated Amortization**	**Net Carrying Amount**	**Gross Carrying Amount**	**Accumulated Amortization**	**Net Carrying Amount**
			(in millions)			
Capitalized computer software	**$ 46.1**	**$ (30.8)**	**$ 15.3**	$ 45.8	$ (27.6)	$ 18.2
Customer platforms	**856.2**	**(206.1)**	**650.1**	856.2	(174.4)	681.8
Customer relationships	**53.0**	**(11.1)**	**41.9**	53.0	(9.4)	43.6
Technology and other	**156.0**	**(41.5)**	**114.5**	156.0	(35.1)	120.9
Total	**$ 1,111.3**	**$ (289.5)**	**$ 821.8**	$ 1,111.0	$ (246.5)	$ 864.5

Amortization expense for our intangible assets was $21.6 million and $43.4 million for the three and six months ended June 30, 2020, respectively, and $24.9 million and $49.9 million for the three and six months ended June 30, 2019, respectively. Estimated amortization expense for the years 2020 through 2024 is expected to be in the range of approximately $80 million to $85 million per year.

4. INVENTORIES

We state our inventories at the lower of cost or net realizable value. The cost of our inventories is determined using the first-in first-out method. When we determine that our gross inventories exceed usage requirements, or if inventories become obsolete or otherwise not saleable, we record a provision for such loss as a component of our inventory accounts.

Inventories consist of the following:

	June 30, 2020	December 31, 2019
	(in millions)	
Raw materials and work-in-progress	**$ 305.5**	$ 310.4
Finished goods	**81.1**	83.7
Gross inventories	**386.6**	394.1
Inventory valuation reserves	**(28.1)**	(20.5)
Inventories, net	**$ 358.5**	$ 373.6

5. LONG-TERM DEBT

Long-term debt consists of the following:

	June 30, 2020	December 31, 2019
	(in millions)	
Revolving Credit Facility	**$ 200.0**	$ —
Term Loan A Facility	**340.0**	340.0
Term Loan B Facility	**1,188.8**	1,188.8
6.875% Notes due 2028	**400.0**	—
6.625% Notes due 2022	**350.0**	450.0
6.50% Notes due 2027	**500.0**	500.0
6.25% Notes due 2026	**400.0**	400.0
6.25% Notes due 2025	**700.0**	700.0
Foreign credit facilities and other	**109.6**	113.4
Total debt	**4,188.4**	3,692.2
Less: Borrowings under Revolving Credit Facility	**200.0**	—
Less: Current portion of long-term debt	**373.7**	28.7
Long-term debt	**3,614.7**	3,663.5
Less: Debt issuance costs	**53.3**	51.2
Long-term debt, net	**$ 3,561.4**	$ 3,612.3

Senior Secured Credit Facilities In 2017, American Axle & Manufacturing Holdings, Inc. (Holdings) and American Axle & Manufacturing, Inc. (AAM, Inc.) entered into a credit agreement (the Credit Agreement). In connection with the Credit Agreement, Holdings, AAM, Inc. and certain of their restricted subsidiaries entered into a Collateral Agreement and Guarantee Agreement with the financial institutions party thereto. The Credit Agreement included a $100.0 million term loan A facility (the Term Loan A Facility), a $1.55 billion term loan B facility (the Term Loan B Facility) and a $932 million multi-currency revolving credit facility (the Revolving Credit Facility, and together with the Term Loan A Facility and the Term Loan B Facility, the Senior Secured Credit Facilities).

In July 2019, Holdings, AAM, Inc., and certain subsidiaries of Holdings entered into the First Amendment (First Amendment) to the Credit Agreement. The First Amendment, among other things, established $340 million in incremental term loan A commitments with a maturity date of July 29, 2024 (Term Loan A Facility due 2024), reduced the availability under the Revolving Credit Facility from $932 million to $925 million, and extended the maturity date of the Revolving Credit Facility from April 6, 2022 to July 29, 2024, and modified the applicable margin with respect to interest rates under the Term Loan A Facility due 2024 and interest rates and commitment fees under the Revolving Credit Facility. The applicable margin and the maturity date for the Term Loan B Facility remain unchanged. The proceeds of $340 million were used to repay all of the outstanding loans under the existing Term Loan A Facility and a portion of the outstanding Term Loan B Facility, resulting in no additional indebtedness. This also satisfies all payment requirements under the Term Loan B Facility until maturity in 2024.

In April 2020, Holdings, AAM, Inc., and certain subsidiaries of Holdings entered into the Second Amendment (Second Amendment) to the Credit Agreement. For the period from April 1, 2020 through March 31, 2022 (the Amendment Period), the Second Amendment, among other things, replaced the total net leverage ratio covenant with a new senior secured net leverage ratio covenant, reduced the minimum levels of the cash interest expense coverage ratio covenant, and modified certain covenants restricting the ability of Holdings, AAM and certain subsidiaries of Holdings to create, incur, assume or permit to exist certain additional indebtedness and liens and to make certain restricted payments, voluntary payments and distributions. The Second Amendment also increased the maximum levels of the total net leverage ratio covenant after the Amendment Period, modified the applicable margin with respect to interest rates under the Term Loan A Facility due 2024 and interest rates and commitment fees under the Revolving Credit Facility, and increased the minimum adjusted London Interbank Offered Rate for Eurodollar-based loans under the Term Loan A Facility due 2024 and Revolving Credit Facility. The applicable margin for the Term Loan B Facility remains unchanged. We paid debt issuance costs of $4.6 million in the six months ended June 30, 2020 related to the Second Amendment.

At June 30, 2020, we had $691.4 million available under the Revolving Credit Facility. This availability reflects $200.0 million of borrowings and $33.6 million for standby letters of credit issued against the facility. The proceeds of the Revolving Credit Facility are used for general corporate purposes.

The Senior Secured Credit Facilities provide back-up liquidity for our foreign credit facilities. We intend to use the availability of long-term financing under the Senior Secured Credit Facilities to refinance any current maturities related to such debt agreements that are not otherwise refinanced on a long-term basis in their local markets, except where otherwise reclassified to Current portion of long-term debt on our Condensed Consolidated Balance Sheet.

6.875% Notes due 2028 In June 2020, we issued $400 million in aggregate principal amount of 6.875% senior notes due 2028 (the 6.875% Notes). Proceeds from the 6.875% Notes will be used primarily to fund the redemption of the remaining $350 million of 6.625% senior notes due 2022 described below and for general corporate purposes. We paid debt issuance costs of $6.0 million in the six months ended June 30, 2020 related to the 6.875% Notes.

Redemption of 6.625% Notes due 2022 In the first quarter of 2020, we voluntarily redeemed a portion of our 6.625% Notes due 2022. This resulted in a principal payment of $100 million and $2.0 million in accrued interest. We also expensed approximately $0.4 million for the write-off of the unamortized debt issuance costs that we had been amortizing over the expected life of the borrowing, and approximately $1.1 million for an early redemption premium.

In the second quarter of 2020, we issued an irrevocable notice to the holders of our 6.625% Notes due 2022 to voluntarily redeem the remaining portion of our 6.625% Notes due 2022 in the third quarter of 2020. In July 2020 this resulted in a principal payment of $350 million and $5.7 million in accrued interest. Subsequent to June 30, 2020, we expensed approximately $1.3 million for the write-off of the unamortized debt issuance costs that we had been amortizing over the expected life of the borrowing, and approximately $3.9 million for the payment of an early redemption premium.

Foreign credit facilities We utilize local currency credit facilities to finance the operations of certain foreign subsidiaries. At June 30, 2020, $109.6 million was outstanding under our foreign credit facilities, as compared to $106.0 million at December 31, 2019. At June 30, 2020, an additional $78.9 million was available under our foreign credit facilities.

Weighted-Average Interest Rate The weighted-average interest rate of our long-term debt outstanding was 5.7% at June 30, 2020 and 5.8% at December 31, 2019.

6. DERIVATIVES

Our business and financial results are affected by fluctuations in global financial markets, including interest rates and currency exchange rates. Our hedging policy has been developed to manage these risks to an acceptable level based on management's judgment of the appropriate trade-off between risk, opportunity and cost. We do not hold financial instruments for trading or speculative purposes.

Currency derivative contracts From time to time, we use foreign currency forward contracts to reduce the effects of fluctuations in exchange rates relating to certain foreign currencies. As of June 30, 2020, we have currency forward contracts outstanding with a total notional amount of $144.7 million that hedge our exposure to changes in foreign currency exchange rates for certain payroll expenses into the first quarter of 2023 and other items into the fourth quarter of 2020.

Fixed-to-fixed cross-currency swap In 2019, we entered into a fixed-to-fixed cross-currency swap to reduce the variability of functional currency equivalent cash flows associated with changes in exchange rates on certain Euro-based intercompany loans. In the first quarter of 2020, we discontinued this fixed-to-fixed cross-currency swap, which was in an asset position of $9.8 million on the date that it was discontinued.

Also in the first quarter of 2020, we entered into a new fixed-to-fixed cross-currency swap to reduce the variability of functional currency equivalent cash flows associated with changes in exchange rates on certain Euro-based intercompany loans. As of June 30, 2020, the notional amount of the fixed-to-fixed cross-currency swap was $224.7 million, and hedges our exposure to changes in exchange rates on the intercompany loans into the second quarter of 2024.

Variable-to-fixed interest rate swap In 2019, we entered into a variable-to-fixed interest rate swap to reduce the variability of cash flows associated with interest payments on our variable rate debt. We have the following notional amounts hedged in relation to our variable-to-fixed interest rate swap: $900.0 million through May 2021, $750.0 million through May 2022, $600.0 million through May 2023 and $500.0 million through May 2024.

The following table summarizes the reclassification of derivative gains and losses into net income from accumulated other comprehensive income (loss) for those derivative instruments designated as cash flow hedges under ASC 815 - *Derivatives and Hedging*:

	Location of Gain (Loss) Reclassified into Net Income	Gain (Loss) Reclassified During Three Months Ended June 30,		Gain (Loss) Reclassified During Six Months Ended June 30,		Total of Financial Statement Line Item	Gain (Loss) Expected to be Reclassified During the Next 12 Months
		2020	**2019**	**2020**	**2019**	**2020**	
				(in millions)			
Currency forward contracts	Cost of Goods Sold	**$ (2.3)**	$ 0.7	**$ (1.0)**	$ 0.9	**$ 1,762.4**	**$ (5.8)**
Fixed-to-fixed cross-currency swap	Other Income (Expense), net	**(3.7)**	—	**—**	—	**(2.2)**	**1.7**
Variable-to-fixed interest rate swap	Interest Expense	**(4.0)**	0.7	**(6.0)**	1.9	**(106.1)**	**(16.2)**

See Note 12 - Reclassifications Out of Accumulated Other Comprehensive Income (Loss) (AOCI) for amounts recognized in other comprehensive income (loss) during the three and six months ended June 30, 2020 and 2019.

The following table summarizes the amount and location of gains and losses recognized in the Condensed Consolidated Statements of Operations for those derivative instruments not designated as hedging instruments under ASC 815:

	Location of Gain (Loss) Recognized in Net Income	Gain (Loss) Recognized During Three Months Ended June 30, 2020	Three Months Ended June 30, 2019	Six Months Ended June 30, 2020	Six Months Ended June 30, 2019	Total of Financial Statement Line Item 2020
		(in millions)				
Currency forward contracts	Cost of Goods Sold	**$ 0.8**	$ 0.6	**$ (7.6)**	$ 1.8	**$ 1,762.4**
Currency forward contracts	Other Income (Expense), net	**(0.1)**	(0.4)	**(0.5)**	(0.6)	**(2.2)**

7. FAIR VALUE

ASC 820 - *Fair Value Measurement* defines fair value as "the price that would be received to sell an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date." The definition is based on an exit price rather than an entry price, regardless of whether the entity plans to hold or sell the asset. This guidance also establishes a fair value hierarchy to prioritize inputs used in measuring fair value as follows:

- Level 1: Observable inputs such as quoted prices in active markets;
- Level 2: Inputs, other than quoted prices in active markets, that are observable either directly or indirectly; and
- Level 3: Unobservable inputs in which there is little or no market data, which require the reporting entity to develop its own assumptions.

Financial instruments The estimated fair value of our financial assets and liabilities that are recognized at fair value on a recurring basis, using available market information and other observable data, are as follows:

	June 30, 2020		December 31, 2019		
	Carrying Amount	Fair Value	Carrying Amount	Fair Value	Input
	(in millions)				
Balance Sheet Classification					
Cash equivalents	**$ 745.1**	**$ 745.1**	$ 271.3	$ 271.3	Level 1
Prepaid expenses and other					
Cash flow hedges - currency forward contracts	—	—	5.0	5.0	Level 2
Cash flow hedges - variable-to-fixed interest rate swap	**6.0**	**6.0**	0.9	0.9	Level 2
Nondesignated - currency forward contracts	—	—	1.9	1.9	Level 2
Other assets and deferred charges					
Cash flow hedges - currency forward contracts	**0.3**	**0.3**	3.4	3.4	Level 2
Cash flow hedges - fixed-to-fixed cross-currency swap	**2.9**	**2.9**	1.1	1.1	Level 2
Cash flow hedges - variable-to-fixed interest rate swap	**12.1**	**12.1**	2.2	2.2	Level 2
Accrued expenses and other					
Cash flow hedges - currency forward contracts	**5.8**	**5.8**	—	—	Level 2
Cash flow hedges - variable-to-fixed interest rate swap	**20.0**	**20.0**	7.9	7.9	Level 2
Nondesignated - currency forward contracts	**3.1**	**3.1**	—	—	Level 2
Postretirement benefits and other long-term liabilities					
Cash flow hedges - currency forward contracts	**5.0**	**5.0**	—	—	Level 2
Cash flow hedges - variable-to-fixed interest rate swap	**41.1**	**41.1**	18.4	18.4	Level 2

The carrying values of our cash, accounts receivable, accounts payable and accrued liabilities approximate their fair values due to the short-term maturities of these instruments. The carrying values of our borrowings under the foreign credit facilities approximate their fair value due to the frequent resetting of the interest rates.

We estimated the fair value of the amounts outstanding on our debt using available market information and other observable data, to be as follows:

	June 30, 2020		December 31, 2019		
	Carrying Amount	Fair Value	Carrying Amount	Fair Value	Input
	(in millions)				
Revolving Credit Facility	**$ 200.0**	**$ 200.0**	$ —	$ —	Level 2
Term Loan A Facility	**340.0**	**312.0**	340.0	337.9	Level 2
Term Loan B Facility	**1,188.8**	**1,123.5**	1,188.8	1,174.0	Level 2
6.875% Notes due 2028	**400.0**	**394.0**	—	—	Level 2
6.625% Notes due 2022	**350.0**	**354.0**	450.0	455.4	Level 2
6.50% Notes due 2027	**500.0**	**482.5**	500.0	516.3	Level 2
6.25% Notes due 2026	**400.0**	**384.0**	400.0	409.0	Level 2
6.25% Notes due 2025	**700.0**	**673.8**	700.0	716.6	Level 2

8. EMPLOYEE BENEFIT PLANS

The components of net periodic benefit cost (credit) are as follows:

	Pension Benefits			
	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	**2019**	**2020**	**2019**
	(in millions)			
Service cost	**$ 0.5**	$ 0.4	**$ 1.0**	$ 0.7
Interest cost	**5.4**	7.1	**10.8**	14.2
Expected asset return	**(9.7)**	(10.3)	**(19.3)**	(20.6)
Amortized loss	**2.2**	1.5	**4.3**	3.2
Net periodic benefit credit	**$ (1.6)**	$ (1.3)	**$ (3.2)**	$ (2.5)

	Other Postretirement Benefits			
	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	**2019**	**2020**	**2019**
	(in millions)			
Service cost	**$ 0.1**	$ 0.1	**$ 0.2**	$ 0.2
Interest cost	**2.5**	3.2	**5.1**	6.4
Amortized loss	**0.3**	—	**0.5**	0.1
Amortized prior service credit	**(0.4)**	(0.4)	**(0.8)**	(0.8)
Net periodic benefit cost	**$ 2.5**	$ 2.9	**$ 5.0**	$ 5.9

The noncurrent liabilities associated with our pension and other postretirement benefit plans are classified as Postretirement benefits and other long-term liabilities on our Condensed Consolidated Balance Sheets. As of June 30, 2020 and December 31, 2019, we have a noncurrent pension liability of $109.9 million and $118.2 million, respectively. As of June 30, 2020 and December 31, 2019, we have a noncurrent other postretirement benefits liability of $517.6 million and $520.0 million, respectively.

Due to the availability of our pre-funded pension balances (previous contributions in excess of prior required pension contributions) related to certain of our U.S. pension plans, we expect our regulatory pension funding requirements in 2020 to be approximately $1.5 million. We expect our cash payments for other postretirement benefit obligations in 2020, net of GM cost sharing, to be approximately $17 million.

9. PRODUCT WARRANTIES

We record a liability for estimated warranty obligations at the dates our products are sold. These estimates are established using sales volumes and internal and external warranty data where there is no payment history and historical information about the average cost of warranty claims for customers with prior claims. We estimate our costs based on the contractual arrangements with our customers, existing customer warranty terms and internal and external warranty data, which includes a determination of our warranty claims and actions taken to improve product quality and minimize warranty claims. We continuously evaluate these estimates and our customers' administration of their warranty programs. We monitor actual warranty claim data and adjust the liability, as necessary, on a quarterly basis.

The following table provides a reconciliation of changes in the product warranty liability:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	**2019**	**2020**	**2019**
	(in millions)			
Beginning balance	**$ 64.2**	$ 56.2	**$ 62.0**	$ 57.7
Accruals	**0.6**	5.0	**4.8**	9.4
Payments	**(0.7)**	(3.6)	**(2.0)**	(7.3)
Adjustment to prior period accruals	**(0.4)**	(2.0)	**(0.5)**	(4.3)
Foreign currency translation	**0.2**	0.1	**(0.4)**	0.2
Ending balance	**$ 63.9**	$ 55.7	**$ 63.9**	$ 55.7

10. INCOME TAXES

We adjust our effective tax rate each quarter based on our estimated annual effective tax rate. We also record the tax impact of certain discrete, unusual or infrequently occurring items, including changes in judgment about valuation allowances and effects of changes in tax laws or rates, in the interim period in which they occur. In addition, jurisdictions with a projected loss for the year or a year-to-date loss where no tax benefit can be recognized are excluded from the estimated annual effective tax rate. The impact of such an exclusion could result in a higher or lower effective tax rate during a particular quarter, based upon the mix and timing of actual earnings versus annual projections.

Income tax was a benefit of $43.9 million for the three months ended June 30, 2020, an effective income tax rate of 17.1%, as compared to expense of $6.0 million for the three months ended June 30, 2019, an effective income tax rate of 10.2%. Income tax was a benefit of $40.6 million for the six months ended June 30, 2020, an effective income tax rate of 5.4%, as compared to expense of $3.0 million for the six months ended June 30, 2019, an effective income tax rate of 3.1%.

In accordance with the guidance in ASC 740 - *Income Taxes*, we review the likelihood that we will realize the benefit of deferred tax assets and estimate whether recoverability of our deferred tax assets is "more likely than not" based on the available evidence. During the three months ended June 30, 2020, we determined that a portion of our deferred tax assets related to U.S. interest expense carryforwards were not more likely than not to be realized. As such, during the three months ended June 30, 2020, we recognized a tax expense of approximately $36.0 million to establish a partial valuation allowance in the U.S. Due to the uncertainty associated with the extent and ultimate impact of COVID-19 on global automotive production volumes, we may experience lower than projected earnings in certain jurisdictions in future periods, and it is reasonably possible that additional valuation allowances could be recognized in the next twelve months as a result.

In addition, during the three months ended June 30, 2020, we finalized an advance pricing agreement in a foreign jurisdiction, which resulted in a tax benefit of approximately $6.8 million. Also during the three months ended June 30, 2020, we recognized a tax benefit of approximately $7.0 million related to our ability to carry back projected current year losses under the CARES Act to years with the previous 35% tax rate. This is in addition to a net tax benefit of approximately $7.5 million that we recognized in the first quarter of 2020 related to our ability to carry back losses from prior years under the CARES Act. See Note 1 - Organization and Basis of Presentation for additional detail regarding the CARES Act.

Our effective income tax rates for the three and six months ended June 30, 2020 vary from our effective income tax rates for the three and six months ended June 30, 2019, as a result of the items discussed above. Further, our effective income tax rate for the six months ended June 30, 2020 varies from our effective income tax rate for the six months ended June 30, 2019 as a result of the impact of the goodwill impairment charge recorded during the first six months of 2020, which had no corresponding income tax benefit. In addition, in the first six months of 2019, we recognized an income tax benefit of $9.3 million related to final regulations issued by the Department of Treasury and Internal Revenue Service in the first quarter of 2019. The final regulations changed the manner in which we were required to compute the one-time transition tax under the TCJA that was imposed on certain foreign earnings for which U.S. income tax was previously deferred.

For the three and six months ended June 30, 2020 and 2019, our effective income tax rates vary from the U.S. federal statutory rate primarily due to favorable foreign tax rates, the impact of tax credits, and the effect of the items described above.

We operate in multiple jurisdictions throughout the world and the income tax returns of several subsidiaries in various tax jurisdictions are currently under examination. We are currently under a U.S. federal income tax examination for the years 2015 through 2018. Generally, we are no longer subject to U.S. federal, state and local, or non-U.S. income tax examinations by tax authorities for years prior to 2013. In the second quarter of 2020, we finalized an advance pricing agreement in a foreign jurisdiction, which resulted in a cash payment to the tax authorities of $18.5 million and a reduction of our liability for unrecognized tax benefits and related interest and penalties of $25.3 million.

Based on the status of ongoing tax audits, and the protocol of finalizing audits by the relevant tax authorities, it is not possible to estimate the impact of changes, if any, to previously recorded uncertain tax positions. We will continue to monitor the progress and conclusions of all ongoing audits and other communications with tax authorities, and will adjust our estimated liability as necessary. As of June 30, 2020 and December 31, 2019, we have recorded a liability for unrecognized income tax benefits and related interest and penalties of $23.1 million and $52.6 million, respectively.

11. EARNINGS (LOSS) PER SHARE (EPS)

We present EPS using the two-class method. This method allocates undistributed earnings between common shares and non-vested share based payment awards that entitle the holder to non-forfeitable dividend rights. Our participating securities include non-vested restricted stock units.

The following table sets forth the computation of our basic and diluted EPS available to shareholders of common stock (excluding participating securities):

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	**2019**	**2020**	**2019**
	(in millions, except per share data)			
Numerator				
Net income (loss) attributable to AAM	**$ (213.2)**	$ 52.5	**$ (714.5)**	$ 94.1
Less: Net income attributable to participating securities	**—**	(1.5)	**—**	(2.7)
Net income (loss) attributable to common shareholders - Basic and Dilutive	**$ (213.2)**	$ 51.0	**$ (714.5)**	$ 91.4
Denominators				
Basic common shares outstanding -				
Weighted-average shares outstanding	**118.4**	115.8	**117.4**	115.6
Less: Participating securities	**(5.3)**	(3.3)	**(4.5)**	(3.4)
Weighted-average common shares outstanding	**113.1**	112.5	**112.9**	112.2
Effect of dilutive securities -				
Dilutive stock-based compensation	**—**	0.3	**—**	0.4
Diluted shares outstanding -				
Adjusted weighted-average shares after assumed conversions	**113.1**	112.8	**112.9**	112.6
Basic EPS	**$ (1.88)**	$ 0.45	**$ (6.33)**	$ 0.81
Diluted EPS	**$ (1.88)**	$ 0.45	**$ (6.33)**	$ 0.81

12. RECLASSIFICATIONS OUT OF ACCUMULATED OTHER COMPREHENSIVE INCOME (LOSS) (AOCI)

Reclassification adjustments and other activity impacting accumulated other comprehensive income (loss) during the three months ended June 30, 2020 and June 30, 2019 are as follows *(in millions)*:

	Defined Benefit Plans	Foreign Currency Translation Adjustments	Unrecognized Gain (Loss) on Cash Flow Hedges	Total
Balance at March 31, 2020	**$ (258.3)**	**$ (149.7)**	**$ (50.4)**	**$ (458.4)**
Other comprehensive income (loss) before reclassifications	—	**4.8**	**(0.8)**	**4.0**
Income tax effect of other comprehensive income (loss) before reclassifications	—	—	**1.2**	**1.2**
Amounts reclassified from accumulated other comprehensive loss	**2.1** (a)	—	**10.0** (b)	**12.1**
Income taxes reclassified into net income	**(0.4)**	—	**(1.7)**	**(2.1)**
Net change in accumulated other comprehensive loss	**1.7**	**4.8**	**8.7**	**15.2**
Balance at June 30, 2020	**$ (256.6)**	**$ (144.9)**	**$ (41.7)**	**$ (443.2)**

	Defined Benefit Plans	Foreign Currency Translation Adjustments	Unrecognized Gain (Loss) on Cash Flow Hedges	Total
Balance at March 31, 2019	$ (240.9)	$ (99.1)	$ (3.6)	$ (343.6)
Other comprehensive income (loss) before reclassifications	—	4.9	(19.1)	(14.2)
Income tax effect of other comprehensive income (loss) before reclassifications	—	—	4.6	4.6
Amounts reclassified from accumulated other comprehensive loss	1.3 (a)	—	(1.4) (b)	(0.1)
Income taxes reclassified into net income	(0.2)	—	0.1	(0.1)
Net change in accumulated other comprehensive loss	1.1	4.9	(15.8)	(9.8)
Balance at June 30, 2019	$ (239.8)	$ (94.2)	$ (19.4)	$ (353.4)

(a) These amounts were reclassified from AOCI to Other income (expense), net for the three months ended June 30, 2020 and June 30, 2019.

(b) The amounts reclassified from AOCI included $2.3 million in cost of goods sold (COGS), $4.0 million in interest expense and $3.7 million in Other income (expense), net for the three months ended June 30, 2020 and $(0.7) million in COGS and $(0.7) million in interest expense for the three months ended June 30, 2019.

Reclassification adjustments and other activity impacting accumulated other comprehensive income (loss) during the six months ended June 30, 2020 and June 30, 2019 are as follows *(in millions)*:

	Defined Benefit Plans		Foreign Currency Translation Adjustments		Unrecognized Gain (Loss) on Cash Flow Hedges		Total
Balance at December 31, 2019	**$ (259.9)**		**$ (101.2)**	**$ (15.7)**		**$ (376.8)**
Other comprehensive income (loss) before reclassifications	**—**		**(43.7)**	**(34.8)**		**(78.5)**
Income tax effect of other comprehensive income (loss) before reclassifications	**—**		**—**	**3.1**		**3.1**
Amounts reclassified from accumulated other comprehensive loss	**4.1**	(a)	**—**	**7.0**	(b)	**11.1**
Income taxes reclassified into net income	**(0.8)**		**—**	**(1.3)**		**(2.1)**
Net change in accumulated other comprehensive loss	**3.3**		**(43.7)**	**(26.0)**		**(66.4)**
Balance at June 30, 2020	**$ (256.6)**		**$ (144.9)**	**$ (41.7)**		**$ (443.2)**

	Defined Benefit Plans		Foreign Currency Translation Adjustments	Unrecognized Gain (Loss) on Cash Flow Hedges		Total
Balance at December 31, 2018	$ (213.9)		$ (96.6)	$ (1.1)		$ (311.6)
Other comprehensive income (loss) before reclassifications	(27.9)	(c)	2.4	(21.7)		(47.2)
Income tax effect of other comprehensive income (loss) before reclassifications	—		—	5.8		5.8
Amounts reclassified from accumulated other comprehensive income (loss)	2.5	(a)	—	(2.8)	(b)	(0.3)
Income taxes reclassified into net income	(0.5)		—	0.4		(0.1)
Net change in accumulated other comprehensive income (loss)	(25.9)		2.4	(18.3)		(41.8)
Balance at June 30, 2019	$ (239.8)		$ (94.2)	$ (19.4)		$ (353.4)

(a) *These amounts were reclassified from AOCI to Other income (expense), net for the six months ended June 30, 2020 and June 30, 2019.*

(b) *The amounts reclassified from AOCI included $1.0 million in COGS and $6.0 million in interest expense for the six months ended June 30, 2020 and $(0.9) million in COGS and $(1.9) million in interest expense for the six months ended June 30, 2019.*

(c) *ASU 2018-02 became effective on January 1, 2019, and we elected to reclassify the stranded tax effects caused by the 2017 Tax Cuts and Jobs Act, resulting in a decrease in Accumulated other comprehensive income (loss) of $27.7 million at January 1, 2019.*

13. REVENUE FROM CONTRACTS WITH CUSTOMERS

Net sales recognized from contracts with customers, disaggregated by segment and geographical location, are presented in the following table for the three and six months ended June 30, 2020 and 2019. Net sales are attributed to regions based on the location of production. Intersegment sales have been excluded from the table.

In the fourth quarter of 2019, we completed the sale of the U.S operations of our former Casting segment (the Casting Sale). The Casting Sale did not include the entities that conduct AAM's casting operations in El Carmen, Mexico, which are now included in our Driveline segment. The Casting Sale did not qualify for classification as discontinued operations, as it did not represent a strategic shift in our business that has had, or will have, a major effect on our operations and financial results. As such, we continue to present Casting as a segment in the table below for the three and six months ended June 30, 2019, and the reported amounts are now comprised entirely of the U.S. casting operations that were included in the sale. The amounts previously reported in our Casting segment for the retained operations in El Carmen, Mexico have been reclassified to our Driveline segment for the three and six months ended June 30, 2019.

	Three Months Ended June 30, 2020			
	Driveline	**Metal Forming**	**Casting**	**Total**
North America	**$ 260.4**	**$ 83.7**	**$ —**	**$ 344.1**
Asia	**88.1**	**10.0**	**—**	**98.1**
Europe	**46.3**	**24.5**	**—**	**70.8**
South America	**1.7**	**0.6**	**—**	**2.3**
Total	**$ 396.5**	**$ 118.8**	**$ —**	**$ 515.3**

	Three Months Ended June 30, 2019			
	Driveline	**Metal Forming**	**Casting**	**Total**
North America	$ 903.9	$ 301.4	$ 171.3	$ 1,376.6
Asia	135.0	7.9	—	142.9
Europe	90.8	67.2	—	158.0
South America	25.9	0.9	—	26.8
Total	$ 1,155.6	$ 377.4	$ 171.3	$ 1,704.3

	Six Months Ended June 30, 2020			
	Driveline	**Metal Forming**	**Casting**	**Total**
North America	**$ 1,051.7**	**$ 345.3**	**$ —**	**$ 1,397.0**
Asia	**191.2**	**16.1**	**—**	**207.3**
Europe	**145.2**	**85.7**	**—**	**230.9**
South America	**20.4**	**3.2**	**—**	**23.6**
Total	**$ 1,408.5**	**$ 450.3**	**$ —**	**$ 1,858.8**

	Six Months Ended June 30, 2019			
	Driveline	**Metal Forming**	**Casting**	**Total**
North America	$ 1,771.9	$ 606.8	$ 353.7	$ 2,732.4
Asia	288.3	15.4	—	303.7
Europe	192.4	139.9	—	332.3
South America	51.7	3.4	—	55.1
Total	$ 2,304.3	$ 765.5	$ 353.7	$ 3,423.5

Contract Assets and Liabilities

The following table summarizes our beginning and ending balances for accounts receivable and contract liabilities associated with our contracts with customers:

	Accounts Receivable, Net	Contract Liabilities (Current)	Contract Liabilities (Long-term)
December 31, 2019	$ 815.4	$ 18.9	$ 83.7
June 30, 2020	550.2	22.5	78.5
Increase/(decrease)	$ (265.2)	$ 3.6	$ (5.2)

Contract liabilities relate to deferred revenue associated with various settlements and commercial agreements for which we have a future performance obligation to the customer. We recognize this deferred revenue into revenue over the life of the associated program as we satisfy our performance obligations to the customer. We do not have contract assets as defined in ASC 606. During the three and six months ended June 30, 2020, we amortized $5.2 million and $11.9 million, respectively, of previously recorded contract liabilities into revenue as we satisfied performance obligations with our customers.

14. SEGMENT REPORTING

Our business is organized into Driveline and Metal Forming segments, with each representing a reportable segment under ASC 280 *Segment Reporting*. In the fourth quarter of 2019, we completed the Casting Sale, which did not include the entities that conduct AAM's casting operations in El Carmen, Mexico, which are now included in our Driveline segment. The Casting Sale did not qualify for classification as discontinued operations, as it did not represent a strategic shift in our business that has had, or will have, a major effect on our operations and financial results. As such, we continue to present Casting as a segment in the table below for the three and six months ended June 30, 2019, and the reported amounts are now comprised entirely of the U.S. casting operations that were included in the sale. The amounts previously reported in our Casting segment for the retained operations in El Carmen, Mexico have been reclassified to our Driveline segment for the three and six months ended June 30, 2019.

The results of each segment are regularly reviewed by the chief operating decision maker to assess the performance of the segment and make decisions regarding the allocation of resources to the segments.

Our product offerings by segment are as follows:

- Driveline products consist primarily of front and rear axles, driveshafts, differential assemblies, clutch modules, balance shaft systems, disconnecting driveline technology, and electric and hybrid driveline products and systems for light trucks, sport utility vehicles (SUVs), crossover vehicles, passenger cars and commercial vehicles; and
- Metal Forming products consist primarily of axle and transmission shafts, ring and pinion gears, differential gears and assemblies, connecting rods and variable valve timing products for Original Equipment Manufacturers and Tier 1 automotive suppliers.

We use Segment Adjusted EBITDA as the measure of earnings to assess the performance of each segment and determine the resources to be allocated to the segments. We define EBITDA to be earnings before interest expense, income taxes, depreciation and amortization. Segment Adjusted EBITDA is defined as EBITDA for our reportable segments excluding the impact of restructuring and acquisition-related costs, debt refinancing and redemption costs, gain (loss) on the sale of a business, impairment charges, pension settlements and non-recurring items.

The following tables represent information by reportable segment for the three months ended June 30, 2020 and 2019 *(in millions)*:

	Three Months Ended June 30, 2020			
	Driveline	Metal Forming	Casting	Total
Sales	**$ 403.7**	**$ 150.3**	**$ —**	**$ 554.0**
Less: intersegment sales	**7.2**	**31.5**	**—**	**38.7**
Net external sales	**$ 396.5**	**$ 118.8**	**$ —**	**$ 515.3**
Segment Adjusted EBITDA	**$ (31.2)**	**$ (20.9)**	**$ —**	**$ (52.1)**

	Three Months Ended June 30, 2019			
	Driveline	Metal Forming	Casting	Total
Sales	$ 1,181.5	$ 484.2	$ 179.7	$ 1,845.4
Less: intersegment sales	25.9	106.8	8.4	141.1
Net external sales	$ 1,155.6	$ 377.4	$ 171.3	$ 1,704.3
Segment Adjusted EBITDA	$ 162.1	$ 86.5	$ 17.4	$ 266.0

The following tables represent information by reportable segment for the six months ended June 30, 2020 and 2019 *(in millions)*:

	Six Months Ended June 30, 2020			
	Driveline	**Metal Forming**	**Casting**	**Total**
Sales	**$ 1,435.4**	**$ 572.6**	**$ —**	**$ 2,008.0**
Less: intersegment sales	**26.9**	**122.3**	**—**	**149.2**
Net external sales	**$ 1,408.5**	**$ 450.3**	**$ —**	**$ 1,858.8**
Segment Adjusted EBITDA	**$ 108.1**	**$ 53.1**	**$ —**	**$ 161.2**

	Six Months Ended June 30, 2019			
	Driveline	**Metal Forming**	**Casting**	**Total**
Sales	$ 2,347.8	$ 967.5	$ 373.4	$ 3,688.7
Less: intersegment sales	43.5	202.0	19.7	265.2
Net external sales	$ 2,304.3	$ 765.5	$ 353.7	$ 3,423.5
Segment Adjusted EBITDA	$ 304.9	$ 170.9	$ 35.2	$ 511.0

The following table represents a reconciliation of Total Segment Adjusted EBITDA to consolidated income (loss) before income taxes for the three and six months ended June 30, 2020 and 2019 *(in millions)*:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	**2019**	**2020**	**2019**
Total segment adjusted EBITDA	**$ (52.1)**	$ 266.0	**$ 161.2**	$ 511.0
Interest expense	**(54.6)**	(56.2)	**(106.1)**	(109.6)
Depreciation and amortization	**(139.1)**	(136.5)	**(268.7)**	(277.3)
Restructuring and acquisition-related costs	**(11.3)**	(12.2)	**(28.9)**	(24.3)
Loss on sale of business	**—**	—	**(1.0)**	—
Debt refinancing and redemption costs	**—**	(2.4)	**(1.5)**	(2.4)
Impairment charge	**—**	—	**(510.0)**	—
Income (loss) before income taxes	**$ (257.1)**	$ 58.7	**$ (755.0)**	$ 97.4

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations

This management's discussion and analysis (MD&A) should be read in conjunction with the unaudited condensed consolidated financial statements and notes appearing elsewhere in this Quarterly Report and our Annual Report on Form 10-K for the year ended December 31, 2019.

Unless the context otherwise requires, references to "we," "our," "us" or "AAM" shall mean collectively (i) American Axle & Manufacturing Holdings, Inc. (Holdings), a Delaware corporation, (ii) American Axle & Manufacturing, Inc. (AAM, Inc.), a Delaware corporation, and its direct and indirect subsidiaries, and, (iii) Metaldyne Performance Group, Inc. (MPG) and its direct and indirect subsidiaries. AAM Inc. and MPG are wholly-owned subsidiaries of Holdings.

COMPANY OVERVIEW

We are a global Tier 1 supplier to the automotive industry. We design, engineer and manufacture driveline and metal forming products that are making the next generation of vehicles smarter, lighter, safer and more efficient. We employ approximately 20,000 associates, operating at nearly 80 facilities in 17 countries, to support our customers on global and regional platforms with a focus on quality, operational excellence and technology leadership.

Major Customers

We are a primary supplier of driveline components to General Motors Company (GM) for its full-size rear-wheel drive (RWD) light trucks, sport utility vehicles (SUVs), and crossover vehicles manufactured in North America, supplying a significant portion of GM's rear axle and four-wheel drive and all-wheel drive (4WD/AWD) axle requirements for these vehicle platforms. We also supply GM with various products from our Metal Forming segment. Sales to GM were approximately 40% of our consolidated net sales in the first six months of 2020, 39% in the first six months of 2019, and 37% for the full year 2019.

We also supply driveline system products to FCA US LLC (FCA) for heavy-duty Ram full-size pickup trucks and its derivatives, the AWD Jeep Cherokee, and a passenger car driveshaft program. In addition, we sell various products to FCA from our Metal Forming segment. Sales to FCA were approximately 16% of our consolidated net sales in the first six months of 2020, 14% in the first six months of 2019, and 17% for the full year 2019.

We are also a supplier to Ford Motor Company (Ford) for driveline system products on certain vehicle programs, and we sell various products to Ford from our Metal Forming segment. Sales to Ford were approximately 12% of our consolidated net sales in the first six months of 2020, 8% in the first six months of 2019, and 9% for the full year of 2019.

No other customer represented 10% or more of consolidated net sales during these periods.

Impact of Novel Coronavirus (COVID-19)

COVID-19 Operational Impact and AAM Actions

In March of 2020, COVID-19 was designated by the World Health Organization as a pandemic illness and began to significantly disrupt global automotive production. In an effort to mitigate the spread of COVID-19, many governmental and public health agencies in locations in which we operate implemented shelter-in-place orders or similar measures. The majority of our customers temporarily ceased or significantly reduced production near the end of March, which continued into the second half of the second quarter. As a result, substantially all of our manufacturing facilities either temporarily suspended production or experienced significant reductions in volumes during this period.

At AAM, safety is our top responsibility and that includes the health and wellness of our associates globally. In response to COVID-19, we instituted several operational measures to ensure the safety of our associates, which included the following:

- Assembled a COVID-19 Task Force comprised of AAM's senior leadership working closely with associates across several functions and regions to coordinate decision making and communication related to actions taken by AAM to mitigate the impact of COVID-19;
- Suspended or reduced production at manufacturing facilities and directed associates who could do so to work remotely;
- Maintained communication with customers, including planning for business resumption and monitoring announcements regarding new program deferrals or other changes;
- Initiated thorough cleaning and decontamination procedures at many of our manufacturing facilities in preparation for resuming production; and
- Designed additional safety measures to further protect associates as production is restored and our associates resume working in our global facilities.

By the end of the first quarter of 2020, our manufacturing locations in Asia, which were impacted by COVID-19 earlier than other global regions, were beginning to stabilize and return to more normalized levels of production. We restarted operations in North America and Europe in May 2020, and we have continued to ramp up production, along with our customers and supply base, into the third quarter of 2020. The ultimate timing of returning to more normalized levels of production will depend on future developments, including the potential extension of shelter-in-place orders and a ramp-up to increased levels of production by our customers, which are outside of our control. We continue to monitor the impact of COVID-19 on our suppliers, as well as on our customers and their suppliers. As production resumes and volumes continue to ramp-up, we cannot be sure that the supply chain will be adequately prepared which could adversely impact the timing of a return to increased levels of production.

Financial Impact of COVID-19

We estimate that the impact of COVID-19 on net sales was approximately $947 million and $1,116 million for the three and six months ended June 30, 2020, respectively. Further, we estimate that the impact to gross profit of this reduction in net sales was approximately $299 million and $346 million for the three and six months ended June 30, 2020, respectively. Due to the significant uncertainty associated with the extent of the impact of COVID-19 and the timing of resuming more normalized levels of production, we cannot estimate the impact of COVID-19 on our 2020 results of operations and financial condition.

In order to mitigate the financial impact of COVID-19, we have continued our emphasis on cost management, and have implemented additional measures to adjust to our customers' revised production schedules, including:

- Continuing to flex our variable cost structure;
- Continuing to manage our controllable expenses, net of costs to ensure the health and safety of our associates;
- Reducing the annual cash retainer for each non-employee director by 40%;
- Reducing salaries for executive officers by 30% and for certain other associates by various percentages depending on level;
- Reducing our projected capital expenditures for the year;
- Amending our Credit Agreement to, among other things, revise our financial maintenance covenants to provide additional financial flexibility; and
- Pursuing options to defer and reduce tax payments through the CARES Act and similar global initiatives.

The additional measures we are taking to address the impact of COVID-19 are expected to remain in place until further clarity can be achieved regarding the recovery and stabilization of the global economy, as well as the resulting impact of COVID-19 on the global automotive industry.

RESULTS OF OPERATIONS — THREE MONTHS ENDED JUNE 30, 2020 AS COMPARED TO THREE MONTHS ENDED JUNE 30, 2019

Net Sales Net sales were $515.3 million in the second quarter of 2020, as compared to $1,704.3 million in the second quarter of 2019. Our change in sales in the second quarter of 2020, as compared to the second quarter of 2019, primarily reflects an estimated reduction of approximately $947 million associated with the decline in global automotive production as a result of COVID-19, and a reduction of approximately $171 million as a result of the sale of the U.S. operations of our Casting business that was completed in the fourth quarter of 2019 (the Casting Sale). Net sales in the second quarter of 2020, as compared to the second quarter of 2019, also decreased by approximately $31 million associated with the effect of metal market pass-throughs to our customers and the impact of foreign exchange related to translation adjustments.

Cost of Goods Sold Cost of goods sold was $614.2 million in the second quarter of 2020, as compared to $1,456.0 million in the second quarter of 2019. The change in cost of goods sold principally reflects an estimated reduction of approximately $648 million associated with the decline in global automotive production as a result of COVID-19, and a reduction of $164 million as a result of the Casting Sale. Cost of goods sold was also impacted by a decrease of approximately $31 million related to metal market pass-through costs and the impact of foreign exchange.

For the three months ended June 30, 2020, material costs were approximately 41% of total cost of goods sold, as compared to approximately 57% for the three months ended June 30, 2019. Material costs as a percentage of cost of goods sold declined as a result of lower product shipments caused by COVID-19, which drove lower material costs and caused fixed costs to be a greater component of cost of goods sold.

Gross Profit (Loss) Gross loss was $98.9 million in the second quarter of 2020, as compared to gross profit of $248.3 million in the second quarter of 2019. Gross margin was (19.2)% in the second quarter of 2020, as compared to 14.6% in the second quarter of 2019. Gross profit (loss) and gross margin were impacted by the factors discussed in Net Sales and Cost of Goods Sold above. While we were able to significantly reduce our variable costs during the quarter ended June 30, 2020, the sharp decline in sales that began during the first quarter and extended into the second quarter, as well as the magnitude of the decline in sales, resulted in a reduction of both gross profit and gross margin.

Selling, General and Administrative Expenses (SG&A) SG&A (including research and development (R&D)) was $73.8 million or 14.3% of net sales in the second quarter of 2020, as compared to $91.3 million or 5.4% of net sales in the second quarter of 2019. R&D spending was approximately $31.7 million in the second quarter of 2020, as compared to $33.2 million in the second quarter of 2019. The decrease in SG&A expense in the three months ended June 30, 2020, as compared to the three months ended June 30, 2019, was primarily attributable to lower compensation-related expense due, in part, to our restructuring initiatives. SG&A expense also declined in the three months ended June 30, 2020 as a result of our emphasis on cost management, including the additional measures that we implemented in response to the impact of COVID-19.

The increase in SG&A as a percentage of sales during the three months ended June 30, 2020, as compared to the three months ended June 30, 2019, was primarily attributable to the decline in sales as a result of COVID-19.

Amortization of Intangible Assets Amortization expense related to intangible assets was $21.6 million for the three months ended June 30, 2020 and $24.9 million for the three months ended June 30, 2019. The reduction in amortization expense related to intangible assets reflects the Casting Sale and the disposal of the intangible assets associated with this business.

Restructuring and Acquisition-Related Costs Restructuring and acquisition-related costs were $11.3 million in the second quarter of 2020 and $12.2 million in the second quarter of 2019. See Note 2 - Restructuring and Acquisition-Related Costs for additional detail.

Operating Income (Loss) Operating loss was $205.6 million in the second quarter of 2020, as compared to operating income of $119.9 million in the second quarter of 2019. Operating margin was (39.9)% in the second quarter of 2020, as compared to 7.0% in the second quarter of 2019. The changes in operating income (loss) and operating margin were primarily due to factors discussed in Net Sales, Cost of Goods Sold, Gross Profit (Loss) and SG&A above.

Interest Expense and Interest Income Interest expense was $54.6 million in the second quarter of 2020, as compared to $56.2 million in the second quarter of 2019. Interest income was $3.0 million in the second quarter of 2020, as compared to $0.5 million in the second quarter of 2019. The weighted-average interest rate of our long-term debt outstanding was 5.5% in the second quarter of 2020 and 5.9% in the second quarter of 2019.

Debt Refinancing and Redemption Costs In the second quarter of 2019, we voluntarily redeemed the remaining balance outstanding under our 7.75% Notes due 2019. This resulted in a principal payment of $100 million and $0.3 million in accrued interest. We expensed approximately $0.1 million for the write-off of the unamortized debt issuance costs that we had been amortizing over the expected life of the borrowing, and approximately $2.2 million for an early redemption premium.

Other Income (Expense), Net Other income (expense), net includes the net effect of foreign exchange gains and losses, our proportionate share of earnings from equity in unconsolidated subsidiaries, and all components of net periodic pension and postretirement benefit costs other than service cost. Other income (expense), net was income of $0.1 million in the second quarter of 2020, as compared to expense of $3.1 million in the second quarter of 2019.

Income Tax Expense (Benefit) Income tax was a benefit of $43.9 million for the three months ended June 30, 2020, as compared to expense of $6.0 million for the three months ended June 30, 2019. Our effective income tax rate was 17.1% in the second quarter of 2020, as compared to 10.2% in the second quarter of 2019.

We review the likelihood that we will realize the benefit of deferred tax assets and estimate whether recoverability of our deferred tax assets is "more likely than not." If, based upon available evidence, it is more likely than not the deferred tax assets will not be realized, a valuation allowance is recorded. During the three months ended June 30, 2020, we determined that a portion of our deferred tax assets related to U.S. interest expense carryforwards were not more likely than not to be realized. As such, during the three months ended June 30, 2020, we recognized a tax expense of approximately $36.0 million to establish a partial valuation allowance in the U.S. Due to the uncertainty associated with the extent and ultimate impact of COVID-19 on global automotive production volumes, we may experience lower than projected earnings in certain jurisdictions in future periods, and it is reasonably possible that additional valuation allowances could be recognized in the next twelve months as a result.

In addition, during the three months ended June 30, 2020, we finalized an advance pricing agreement in a foreign jurisdiction, which resulted in a tax benefit of approximately $6.8 million. Also during the three months ended June 30, 2020, we recognized a tax benefit of approximately $7.0 million related to our ability to carry back projected current year losses under the CARES Act to years with the previous 35% tax rate.

Our effective income tax rate for the three months ended June 30, 2020 varies from our effective income tax rate for the three months ended June 30, 2019 as a result of the items described above. For the three months ended June 30, 2020 and 2019, our effective income tax rates vary from the U.S. federal statutory rate of 21% primarily due to favorable foreign tax rates, as well as the impact of tax credits and the effect of the items described above.

Net Income (Loss) Attributable to AAM and Earnings (Loss) Per Share (EPS) Net income (loss) attributable to AAM was a loss of $213.2 million in the second quarter of 2020, as compared to income of $52.5 million in the second quarter of 2019. Diluted loss per share was $1.88 in the second quarter of 2020, as compared to diluted earnings per share of $0.45 in the second quarter of 2019. Net income (loss) attributable to AAM and EPS for the second quarters of 2020 and 2019 were primarily impacted by the factors discussed above.

RESULTS OF OPERATIONS — SIX MONTHS ENDED JUNE 30, 2020 AS COMPARED TO SIX MONTHS ENDED JUNE 30, 2019

Net Sales Net sales were $1,858.8 million in the first six months of 2020 as compared to $3,423.5 million in the first six months of 2019. Our change in sales in the first six months of 2020, as compared to the first six months of 2019, primarily reflects an estimated reduction of approximately $1,116 million associated with the decline in global automotive production as a result of COVID-19, and a reduction of $354 million as a result of the Casting Sale. Net sales for the first six months of 2020, as compared to the first six months of 2019, also decreased by approximately $73 million associated with the effect of metal market pass-throughs to our customers and the impact of foreign exchange related to translation adjustments.

Cost of Goods Sold Cost of goods sold was $1,762.4 million in the first six months of 2020 as compared to $2,953.0 million in the first six months of 2019. The change in cost of goods sold principally reflects an estimated reduction of approximately $770 million associated with the decline in global automotive production as a result of COVID-19, and a reduction of $339 million as a result of the Casting Sale. Cost of goods sold was also impacted by a decrease of approximately $73 million related to metal market pass-through costs and the impact of foreign exchange, as well as the impact of improved operating performance and lower launch costs.

For the six months ended June 30, 2020, material costs were approximately 51% of total costs of goods sold as compared to approximately 57% for the six months ended June 30, 2019. Material costs as a percentage of cost of goods sold declined as a result of lower product shipments caused by COVID-19, which drove lower material costs and caused fixed costs to be a greater component of cost of goods sold.

Gross Profit Gross profit was $96.4 million in the first six months of 2020 as compared to $470.5 million in the first six months of 2019. Gross margin was 5.2% in the first six months of 2020 as compared to 13.7% in the first six months of 2019. Gross profit and gross margin were impacted by the factors discussed in Net Sales and Cost of Goods Sold above. While we were able to significantly reduce our variable costs during the six months ended June 30, 2020, the sharp decline in sales that began during the first quarter and extended into the second quarter, as well as the magnitude of the decline in sales, resulted in a reduction of both gross profit and gross margin.

SG&A SG&A (including R&D) was $164.1 million or 8.8% of net sales in the first six months of 2020 as compared to $182.0 million or 5.3% of net sales in the first six months of 2019. R&D spending was approximately $68.3 million in the first six months of 2020 as compared to $67.5 million in the first six months of 2019. The change in SG&A in the first six months of 2020, as compared to the first six months of 2019, was primarily attributable to lower compensation-related expense due, in part, to our restructuring initiatives. SG&A expense also declined in the six months ended June 30, 2020 as a result of our emphasis on cost management, including the additional measures that we implemented in response to the impact of COVID-19.

The increase in SG&A as a percentage of sales during the six months ended June 30, 2020, as compared to the six months ended June 30, 2019, was primarily attributable to the decline in sales as a result of COVID-19.

Amortization of Intangible Assets Amortization expense related to intangible assets for the six months ended June 30, 2020 was $43.4 million as compared to $49.9 million for the six months ended June 30, 2019. The reduction in amortization expense related to intangible assets reflects the Casting Sale and the disposal of the intangible assets associated with this business.

Impairment Charge In the first six months of 2020, the reduction in global automotive production volumes caused by the impact of COVID-19 represented an indicator to test our goodwill for impairment. As a result of this goodwill impairment test, we determined that the carrying values of our Driveline and Metal Forming reporting units were greater than their respective fair values. As such, we recorded a total goodwill impairment charge of $510.0 million in the first six months of 2020. See Note 3 - Goodwill and Other Intangible Assets for further detail.

Restructuring and Acquisition-Related Costs Restructuring and acquisition-related costs were $28.9 million for the six months ended June 30, 2020, as compared to $24.3 million for the six months ended June 30, 2019. As part of our restructuring actions, we incurred severance charges of approximately $16.3 million and $8.2 million, as well as implementation costs of approximately $7.7 million and $8.9 million, during the six months ended June 30, 2020 and 2019, respectively. We expect to incur approximately $70 million to $80 million of total restructuring charges in 2020. See Note 2 - Restructuring and Acquisition-Related Costs for additional detail regarding our restructuring activity.

During the six months ended June 30, 2020, we incurred $4.9 million of integration expenses primarily associated with the ongoing integration of MPG. This compares to $7.2 million of integration expenses incurred during the six months ended

June 30, 2019. Integration expenses primarily reflect costs incurred for information technology infrastructure and enterprise resource planning (ERP) systems. We expect to incur integration charges of $10 million to $15 million in 2020 as we finalize the integration of ERP systems at legacy MPG locations.

Loss on Sale of Business In the first six months of 2020, we finalized certain customary post-closing calculations associated with the Casting Sale, resulting in an additional loss on sale of $1.0 million.

Operating Income (Loss) Operating income (loss) was a loss of $651.0 million in the first six months of 2020 as compared to income of $214.3 million in the first six months of 2019. Operating margin was (35.0)% in the first six months of 2020 as compared to 6.3% in the first six months of 2019. The changes in operating income (loss) and operating margin were due primarily to the factors discussed in Net Sales, Cost of Goods Sold, Gross Profit, SG&A, and Impairment Charge above.

Interest Expense and Interest Income Interest expense was $106.1 million in the first six months of 2020 as compared to $109.6 million in the first six months of 2019. Interest income was $5.8 million in the first six months of 2020 as compared to $1.2 million in the first six months of 2019. The weighted-average interest rate of our long-term debt outstanding was 5.6% for the six months ended June 30, 2020 and 5.9% for the six months ended June 30, 2019. We expect our interest expense for the full year 2020 to be approximately $205 million to $215 million.

Debt Refinancing and Redemption Costs In the first quarter of 2020, we voluntarily redeemed $100 million of our 6.625% Notes due 2022. As a result, we expensed approximately $0.4 million for the write-off of the unamortized debt issuance costs that we had been amortizing over the expected life of the borrowing, and approximately $1.1 million for the payment of an early redemption premium.

In the second quarter of 2020, we issued an irrevocable notice to the holders of our 6.625% Notes due 2022 to voluntarily redeem the remaining portion of our 6.625% Notes due 2022 in the third quarter of 2020. This resulted in a principal payment of $350 million and $5.7 million in accrued interest in July 2020. Subsequent to June 30, 2020, we expensed approximately $1.3 million for the write-off of the unamortized debt issuance costs that we had been amortizing over the expected life of the borrowing, and approximately $3.9 million for the payment of an early redemption premium.

In the second quarter of 2019, we voluntarily redeemed the remaining balance outstanding under our 7.75% Notes due 2019. This resulted in a principal payment of $100 million and $0.3 million in accrued interest. We expensed approximately $0.1 million for the write-off of the unamortized debt issuance costs that we had been amortizing over the expected life of the borrowing, and approximately $2.2 million for an early redemption premium.

Other Expense, Net Other expense, net includes the net effect of foreign exchange gains and losses, our proportionate share of earnings from equity in unconsolidated subsidiaries, and all components of net periodic pension and postretirement benefit costs other than service cost. Other expense, net was $2.2 million in the first six months of 2020 as compared to $6.1 million in the first six months of 2019.

Income Tax Expense (Benefit) Income tax was a benefit of $40.6 million for the six months ended June 30, 2020 as compared to expense of $3.0 million for the six months ended June 30, 2019. Our effective income tax rate was 5.4% in the first six months of 2020 as compared to 3.1% in the first six months of 2019.

During the six months ended June 30, 2020, we recognized the impact of the items discussed under Income Tax Expense (Benefit) in the "Results of Operations - Three Months Ended June 30, 2020 as Compared to Three Months Ended June 30, 2019" section of this MD&A. Additionally, we recognized a net tax benefit in the six months ended June 30, 2020 of approximately $7.5 million related to our ability to carry back losses from prior years under the CARES Act.

Our effective income tax rate for the six months ended June 30, 2020 varies from our effective income tax rate for the six months ended June 30, 2019, as a result of the items described above, and also as a result of the impact of the goodwill impairment charge recorded during the first six months of 2020, which had no corresponding income tax benefit. In addition, in the first six months of 2019, we recognized an income tax benefit of $9.3 million related to final regulations issued by the Department of Treasury and Internal Revenue Service in the first quarter of 2019. The final regulations changed the manner in which we were required to compute the one-time transition tax under the Tax Cuts and Jobs Act that was imposed on certain foreign earnings for which U.S. income tax was previously deferred.

For the six months ended June 30, 2020 and 2019, our effective income tax rates vary from the U.S. federal statutory rate of 21% primarily due to favorable foreign tax rates, as well as the impact of tax credits and the effect of the items described above.

Net Income (Loss) Attributable to AAM and Earnings (Loss) Per Share (EPS) Net income (loss) attributable to AAM was a loss of $714.5 million in the first six months of 2020 as compared to income of $94.1 million in the first six months of 2019. Diluted EPS was a loss of $6.33 per share in the first six months of 2020 as compared to earnings of $0.81 per share in the first six months of 2019. Net income (loss) attributable to AAM and EPS for the first six months of 2020 and 2019 were primarily impacted by the factors discussed above.

SEGMENT REPORTING

Our business is organized into Driveline and Metal Forming segments, with each representing a reportable segment under ASC 280 *Segment Reporting*. In the fourth quarter of 2019, we completed the Casting Sale. The Casting Sale did not include the entities that conduct AAM's casting operations in El Carmen, Mexico, which are now included in our Driveline segment. The Casting Sale did not qualify for classification as discontinued operations, as it did not represent a strategic shift in our business that has had, or will have, a major effect on our operations and financial results. As such, we continue to present Casting as a segment in the tables below for the periods prior to the sale, and the reported amounts are now comprised entirely of the U.S. casting operations that were included in the sale. The amounts previously reported in our Casting segment for the retained operations in El Carmen, Mexico have been reclassified to our Driveline segment for the periods presented.

The results of each segment are regularly reviewed by the chief operating decision maker to assess the performance of the segment and make decisions regarding the allocation of resources to the segments.

Our product offerings by segment are as follows:

- Driveline products consist primarily of front and rear axles, driveshafts, differential assemblies, clutch modules, balance shaft systems, disconnecting driveline technology, and electric and hybrid driveline products and systems for light trucks, SUVs, crossover vehicles, passenger cars and commercial vehicles; and
- Metal Forming products consist primarily of axle and transmission shafts, ring and pinion gears, differential gears and assemblies, connecting rods and variable valve timing products for Original Equipment Manufacturers and Tier 1 automotive suppliers.

The following table represents sales by reportable segment for the three and six months ended June 30, 2020 and 2019 *(in millions)*:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	**2020**	2019
Driveline	**$ 403.7**	$ 1,181.5	**$ 1,435.4**	$ 2,347.8
Metal Forming	**150.3**	484.2	**572.6**	967.5
Casting	**—**	179.7	**—**	373.4
Eliminations	**(38.7)**	(141.1)	**(149.2)**	(265.2)
Net Sales	**$ 515.3**	$ 1,704.3	**$ 1,858.8**	$ 3,423.5

The change in Driveline sales for the three and six months ended June 30, 2020, as compared to the three and six months ended June 30, 2019, primarily reflects estimated reductions of approximately $773 million and $919 million, respectively, associated with the impact of the decline in global automotive production as a result of COVID-19. These estimated reductions include approximately $724 million and $861 million, respectively, related to external customers. The change in Driveline sales also reflects a reduction of approximately $16 million and $36 million, respectively, associated with the effect of metal market pass-throughs to our customers and the impact of foreign exchange related to translation adjustments.

The change in net sales in our Metal Forming segment in the three and six months ended June 30, 2020, as compared to the three and six months ended June 30, 2019, primarily reflects estimated reductions of approximately $318 million and $365 million, respectively, associated with the impact of the decline in global automotive production as a result of COVID-19. These estimated reductions include approximately $223 million and $255 million, respectively, related to external customers. Also for the three and six months ended June 30, 2020, as compared to the three and six months ended June 30, 2019, Metal Forming sales were impacted by a reduction of approximately $15 million and $37 million, respectively, associated with the effect of metal market pass-throughs to our customers and the impact of foreign exchange related to translation adjustments.

The change in net sales in our Casting segment in the three and six months ended June 30, 2020, as compared to the three and six months ended June 30, 2019, is the result of the Casting Sale that was completed in the fourth quarter of 2019 as AAM no longer operates in this business.

We use Segment Adjusted EBITDA as the measure of earnings to assess the performance of each segment and determine the resources to be allocated to the segments. We define EBITDA to be earnings before interest expense, income taxes, depreciation and amortization. Segment Adjusted EBITDA is defined as EBITDA for our reportable segments excluding the impact of restructuring and acquisition-related costs, debt refinancing and redemption costs, gain (loss) on the sale of a business, impairment charges, pension settlements, and non-recurring items.

The amounts for Segment Adjusted EBITDA for the three and six months ended June 30, 2020 and 2019 are as follows *(in millions)*:

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	**2019**	**2020**	**2019**
Driveline	**$ (31.2)**	$ 162.1	**$ 108.1**	$ 304.9
Metal Forming	**(20.9)**	86.5	**53.1**	170.9
Casting	—	17.4	—	35.2
Total segment adjusted EBITDA	**$ (52.1)**	$ 266.0	**$ 161.2**	$ 511.0

For the three and six months ended June 30, 2020, as compared to the three and six months ended June 30, 2019, the change in Segment Adjusted EBITDA for the Driveline segment was primarily attributable to lower net global automotive production volumes as a result of the impact of COVID-19, which was partially offset by our continued emphasis on cost management, as well as the additional measures that we implemented in response to the impact of COVID-19.

The change in Metal Forming Segment Adjusted EBITDA for the three and six months ended June 30, 2020, as compared to the three and six months ended June 30, 2019, was primarily attributable to the impact of the decline in global automotive production as a result of the impact of COVID-19, which was partially offset by our continued emphasis on cost management, as well as the additional measures that we implemented in response to the impact of COVID-19.

The change in Segment Adjusted EBITDA for our Casting segment in the three and six months ended June 30, 2020, as compared to the three and six months ended June 30, 2019, was the result of the Casting Sale that was completed in the fourth quarter of 2019 as AAM no longer operates in this business.

Reconciliation of Non-GAAP and GAAP Information

In addition to results reported in accordance with accounting principles generally accepted in the United States of America (GAAP) in this MD&A, we have provided certain non-GAAP financial measures such as EBITDA and Total Segment Adjusted EBITDA. Such information is reconciled to its closest GAAP measure in accordance with Securities and Exchange Commission rules below.

We define EBITDA to be earnings before interest expense, income taxes, depreciation and amortization. Total Segment Adjusted EBITDA is defined as EBITDA for our reportable segments excluding the impact of restructuring and acquisition-related costs, debt refinancing and redemption costs, gain (loss) on the sale of a business, impairment charges, pension settlements, and non-recurring items. We believe that EBITDA and Total Segment Adjusted EBITDA are meaningful measures of performance as they are commonly utilized by management and investors to analyze operating performance and entity valuation. Our management, the investment community and the banking institutions routinely use EBITDA and Total Segment Adjusted EBITDA, together with other measures, to measure our operating performance relative to other Tier 1 automotive suppliers and to assess the relative mix of Adjusted EBITDA by segment. We also believe that Total Segment Adjusted EBITDA is a meaningful measure as it is used for operational planning and decision-making purposes. These non-GAAP financial measures are not and should not be considered a substitute for any GAAP measure. Additionally, non-GAAP financial measures as presented by AAM may not be comparable to similarly titled measures reported by other companies.

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	**2020**	2019
Net income (loss)	**$ (213.2)**	$ 52.7	**$ (714.4)**	$ 94.4
Interest expense	**54.6**	56.2	**106.1**	109.6
Income tax expense (benefit)	**(43.9)**	6.0	**(40.6)**	3.0
Depreciation and amortization	**139.1**	136.5	**268.7**	277.3
EBITDA	**$ (63.4)**	$ 251.4	**$ (380.2)**	$ 484.3
Restructuring and acquisition-related costs	**11.3**	12.2	**28.9**	24.3
Debt refinancing and redemption costs	**—**	2.4	**1.5**	2.4
Impairment charge	**—**	—	**510.0**	—
Loss on sale of business	**—**	—	**1.0**	—
Total segment adjusted EBITDA	**$ (52.1)**	$ 266.0	**$ 161.2**	$ 511.0

LIQUIDITY AND CAPITAL RESOURCES

Our primary liquidity needs are to fund debt service obligations, capital expenditures and working capital requirements, in addition to advancing our strategic initiatives. We believe that operating cash flow, available cash and cash equivalent balances and available borrowing capacity under our Senior Secured Credit Facilities and foreign credit facilities will be sufficient to meet these needs.

COVID-19 Considerations Related to Liquidity and Capital Resources

In order to mitigate the financial impact of COVID-19, we have implemented measures to conserve cash and protect our liquidity position, including:

- Continuing to flex our variable cost structure;
- Continuing to manage our controllable expenses, net of costs to ensure the health and safety of our associates;
- Reducing the annual cash retainer for each non-employee director by 40%;
- Reducing salaries for executive officers by 30% and for certain other associates by various percentages depending on level;
- Reducing our projected capital expenditures for the year;
- Amending our Credit Agreement to, among other things, revise our financial maintenance covenants to provide additional financial flexibility; and
- Pursuing options to defer and reduce tax payments through the CARES Act and similar global initiatives.

At June 30, 2020, we had over $1.6 billion of liquidity consisting of approximately $893 million of cash and cash equivalents, approximately $691 million of available borrowings under our Revolving Credit Facility and approximately $79 million of available borrowings under foreign credit facilities. In the second quarter of 2020, we issued an irrevocable notice to the holders of our 6.625% Notes due 2022 to voluntarily redeem the remaining portion outstanding in the third quarter of 2020. This resulted in a principal payment of $350 million and $5.7 million in accrued interest in July 2020. With the exception of the voluntary redemption of the 6.625% Notes in July 2020, we have no significant debt maturities before 2024. Based on our cash and cash equivalents, together with available borrowings under credit facilities, and the measures we are taking to conserve cash, we believe that our current liquidity position and projected operating cash flows will be sufficient to meet our primary cash needs for the next 12 months.

Operating Activities In the first six months of 2020, net cash used in operating activities was $3.1 million as compared to net cash provided by operating activities of $136.9 million in the first six months of 2019. The following factors impacted cash from operating activities in the first six months of 2020, as compared to the first six months of 2019:

Impact of COVID-19 We experienced lower earnings and cash flows from operating activities as a result of the significant reduction in production volumes during the six months ended June 30, 2020 due to the impact of COVID-19.

Accounts receivable For the six months ended June 30, 2020, we experienced an increase in cash flow from operating activities of approximately $427 million related to the change in our accounts receivable balance from December 31, 2019 to June 30, 2020, as compared to the change in our accounts receivable balance from December 31, 2018 to June 30, 2019. This change was primarily attributable to a reduction in sales in the second quarter of 2020 due to the impact of COVID-19.

Accounts payable and accrued expenses For the six months ended June 30, 2020, we experienced a decrease in cash flow from operating activities of approximately $323 million related to the change in our accounts payable and accrued expenses balance from December 31, 2019 to June 30, 2020, as compared to the change from December 31, 2018 to June 30, 2019. This change was primarily attributable to reduced sales and purchasing activity in the second quarter of 2020 due to the impact of COVID-19.

Restructuring and acquisition-related costs For the full year 2020, we expect restructuring and acquisition-related payments in cash flows from operating activities to be between $55 million and $70 million, and we expect the timing of cash payments to approximate the timing of charges incurred.

Pension and other postretirement benefits Due to the availability of our pre-funded pension balances (previous contributions in excess of prior required pension contributions) related to certain of our U.S. pension plans, we expect our regulatory pension funding requirements in 2020 to be approximately $1.5 million. We expect our cash payments for other postretirement benefit obligations in 2020, net of GM cost sharing, to be approximately $17 million.

Income taxes During the second quarter of 2020, we finalized an advance pricing agreement in a foreign jurisdiction, which resulted in a cash payment to the tax authorities of $18.5 million, and a reduction of our liability for unrecognized tax benefits and related interest and penalties of $25.3 million. As of June 30, 2020 and December 31, 2019, we have recorded a liability for unrecognized income tax benefits and related interest and penalties of $23.1 million and $52.6 million, respectively.

In the first six months of 2020, we recognized a refundable income tax asset of approximately $35 million related to income tax for which we expect to receive a refund based on the utilization of net operating losses under the provisions of the CARES Act. This amount is presented in Prepaid expenses and other in our Condensed Consolidated Balance Sheet as of June 30, 2020. See Note 1 - Organization and Basis of Presentation for additional detail regarding the CARES Act.

Investing Activities In the first six months of 2020, net cash used in investing activities was $108.8 million as compared to $238.0 million for the six months ended June 30, 2019. Capital expenditures were $105.6 million in the first six months of 2020 as compared to $237.5 million in the first six months of 2019. We expect our capital spending in 2020 to be approximately $250 million.

Financing Activities In the first six months of 2020, net cash provided by financing activities was $480.2 million, as compared to net cash used in financing activities of $127.7 million in the first six months of 2019. The following factors impacted cash from financing activities in the first six months of 2020 as compared to the first six months of 2019:

Senior Secured Credit Facilities In 2019, Holdings, AAM, Inc., and certain subsidiaries of Holdings entered into the First Amendment (First Amendment) to the Credit Agreement. The First Amendment, among other things, established $340 million in incremental term loan A commitments with a maturity date of July 29, 2024 (Term Loan A Facility due 2024), reduced the availability under the Revolving Credit Facility from $932 million to $925 million and extended the maturity date of the Revolving Credit Facility from April 6, 2022 to July 29, 2024, and modified the applicable margin with respect to interest rates under the Term Loan A Facility due 2024 and interest rates and commitment fees under the Revolving Credit Facility. The applicable margin and the maturity date for the Term Loan B Facility remained unchanged. The proceeds of $340 million were used to repay all of the outstanding loans under the existing Term Loan A Facility and a portion of the outstanding Term Loan B Facility, resulting in no additional indebtedness. This also satisfies all payment requirements under the Term Loan B Facility until maturity in 2024.

In April 2020, Holdings, AAM, Inc., and certain subsidiaries of Holdings entered into the Second Amendment (Second Amendment) to the Credit Agreement. For the period from April 1, 2020 through March 31, 2022 (the Amendment Period), the Second Amendment, among other things, replaced the total net leverage ratio covenant with a new senior secured net leverage ratio covenant, reduced the minimum levels of the cash interest expense coverage ratio covenant, and modified certain covenants restricting the ability of Holdings, AAM and certain subsidiaries of Holdings to create, incur, assume or permit to exist certain additional indebtedness and liens and to make certain restricted payments, voluntary payments and distributions. The Second Amendment also increased the maximum levels of the total net leverage ratio covenant after the Amendment Period, modified the applicable margin with respect to interest rates under the Term Loan A Facility due 2024 and interest rates and commitment fees under the Revolving Credit Facility, and increased the minimum adjusted London Interbank Offered Rate for Eurodollar-based loans under the Term Loan A Facility due 2024 and Revolving Credit Facility. The applicable margin for the Term Loan B Facility remains unchanged. We paid debt issuance costs of $4.6 million in the six months ended June 30, 2020 related to the Second Amendment.

The Senior Secured Credit Facilities provide back-up liquidity for our foreign credit facilities. We intend to use the availability of long-term financing under the Senior Secured Credit Facilities to refinance any current maturities related to such debt agreements that are not otherwise refinanced on a long-term basis in their local markets, except where otherwise reclassified to Current portion of long-term debt on our Condensed Consolidated Balance Sheet.

At June 30, 2020, we had $691.4 million available under the Revolving Credit Facility. This availability reflects $200.0 million outstanding on the Revolving Credit Facility and $33.6 million for standby letters of credit issued against the facility. The borrowings under the Revolving Credit Facility are used for general corporate purposes.

6.875% Notes due 2028 In June 2020, we issued $400 million in aggregate principal amount of 6.875% senior notes due 2028 (the 6.875% Notes). Proceeds from the 6.875% Notes will be used primarily to fund the redemption of the remaining $350 million of 6.625% senior notes due 2022 described below and for general corporate purposes. We paid debt issuance costs of $6.0 million in the six months ended June 30, 2020 related to the 6.875% Notes.

Redemption of 6.625% Notes due 2022 In the first quarter of 2020, we voluntarily redeemed a portion of our 6.625% Notes due 2022. This resulted in a principal payment of $100.0 million and $2.0 million in accrued interest. We expensed approximately $0.4 million for the write-off of the unamortized debt issuance costs that we had been amortizing over the expected life of the borrowing, and approximately $1.1 million for the payment of an early redemption premium.

In the second quarter of 2020, we issued an irrevocable notice to the holders of our 6.625% Notes due 2022 to voluntarily redeem the remaining portion of our 6.625% Notes due 2022 in the third quarter of 2020. This resulted in a principal payment of $350 million and $5.7 million in accrued interest in July 2020. Subsequent to June 30, 2020, we expensed approximately $1.3 million for the write-off of the unamortized debt issuance costs that we had been amortizing over the expected life of the borrowing, and approximately $3.9 million for the payment of an early redemption premium.

Redemption of 7.75% Notes due 2019 In May 2019, we voluntarily redeemed the remaining balance outstanding under our 7.75% Notes due 2019. This resulted in a principal payment of $100 million and $0.3 million in accrued interest. We expensed approximately $0.1 million for the write-off of the unamortized debt issuance costs that we had been amortizing over the expected life of the borrowing, and approximately $2.2 million for an early redemption premium.

Foreign credit facilities We utilize local currency credit facilities to finance the operations of certain foreign subsidiaries. At June 30, 2020, $109.6 million was outstanding under our foreign credit facilities, as compared to $106.0 million at December 31, 2019. At June 30, 2020, an additional $78.9 million was available under our foreign credit facilities.

Treasury stock Treasury stock increased by $2.7 million in the first six months of 2020 to $212.0 million as compared to $209.3 million at year-end 2019, due to the withholding and repurchase of shares of AAM stock to satisfy employee tax withholding obligations due upon the vesting of performance shares and restricted stock units.

Subsidiary Guarantees of Registered Debt Securities Our 6.875% Notes, 6.625% Notes, 6.50% Notes, 6.25% Notes (due 2026), and 6.25% Notes (due 2025) (collectively, the Notes) are senior unsecured obligations of AAM, Inc. (Issuer); all of which are fully and unconditionally guaranteed, on a joint and several basis, by Holdings and substantially all domestic subsidiaries of AAM, Inc. and MPG Inc (Subsidiary Guarantors). Holdings has no significant assets other than its 100% ownership in AAM, Inc. and MPG Inc., and no direct subsidiaries other than AAM, Inc. and MPG Inc.

Each guarantee by Holdings and/or any of the Subsidiary Guarantors is:

- a senior obligation of the relevant Subsidiary Guarantors;
- the unsecured and unsubordinated obligation of the relevant Subsidiary Guarantors; and
- of equal rank with all other existing and future unsubordinated and unsecured indebtedness of the relevant Subsidiary Guarantors.

Each guarantee by a Subsidiary Guarantor provides by its terms that it will be automatically, fully and unconditionally released and discharged upon:

- Any sale, exchange or transfer (by merger or otherwise) of the Capital Stock of such Subsidiary Guarantor, or the sale or disposition of all the assets of such Subsidiary Guarantor, which sale, exchange, transfer or disposition is made in compliance with the applicable provisions of the indentures;
- the exercise by the Issuer of its legal defeasance option or covenant defeasance option or the discharge of the Issuer’s obligations under the indentures in accordance with the terms of the indentures;
- the election of the Issuer to affect such a release following the date that such guaranteed Notes have an investment grade rating from both Standard & Poor's Ratings Group, Inc, and Moody's Investors Service, Inc.

The following represents summarized financial information of AAM Holdings, AAM Inc. and the Subsidiary Guarantors (collectively, the Combined Entities). The information has been prepared on a combined basis and excludes any investments of AAM Holdings, AAM Inc., or the Subsidiary Guarantors in non-guarantor subsidiaries. Intercompany transactions and amounts between Combined Entities have been eliminated.

Statement of Operations Information	*(in millions)*	
	Six Months Ended June 30, 2020	**Year Ended December 31, 2019**
Net sales	$ 1,396.9	$ 3,043.3
Gross profit	26.7	192.0
Loss from operations	(524.2)	(793.3)
Net loss	(545.4)	(718.0)

Balance Sheet Information	*(in millions)*	
	June 30, 2020	**December 31, 2019**
Current assets	$ 1,325.6	$ 699.5
Noncurrent assets	2,839.7	3,120.4
Current liabilities	1,323.4	551.9
Noncurrent liabilities	4,274.9	4,281.3
Redeemable preferred stock	—	—
Noncontrolling interest	—	—

At June 30, 2020 and December 31, 2019, amounts owed by the Combined Entities to non-guarantor entities totaled approximately $445 million and $125 million, respectively, and amounts owed to the Combined Entities from non-guarantor entities totaled approximately $690 million and $630 million, respectively.

CRITICAL ACCOUNTING ESTIMATES

Subsequent to the goodwill impairment charge that was recorded for our Driveline reporting unit in the first six months of 2020, the fair value of this reporting unit approximated its carrying value. Fair value of the reporting unit is estimated based on a combination of discounted cash flows and the use of pricing multiples derived from an analysis of comparable public companies multiplied against historical and/or anticipated financial metrics of the reporting unit. These calculations contain uncertainties as they require management to make assumptions including, but not limited to, market comparables, future cash flows of the reporting unit, and appropriate discount and long-term growth rates.

A decline in the actual cash flows of the Driveline reporting unit in future periods, as compared to the projected cash flows used in the valuation, could result in the carrying value of this reporting unit exceeding its fair value. Further, a change in market comparables, discount rate or long-term growth rate, as a result of a change in economic conditions or otherwise, including those resulting from the impact of COVID-19, could result in the carrying value of this reporting unit exceeding its fair value, which would result in an additional impairment charge.

AAM's critical accounting estimates are included in our Annual Report on Form 10-K for the year ended December 31, 2019 and did not materially change during the six months ended June 30, 2020.

CYCLICALITY AND SEASONALITY

Our operations are cyclical because they are directly related to worldwide automotive production, which is itself cyclical and dependent on general economic conditions and other factors. Typically, our business is also moderately seasonal as our major OEM customers historically have an extended shutdown of operations (normally 1-2 weeks) in conjunction with their model year changeover and an approximate one-week shutdown in December. Our major OEM customers also occasionally have longer shutdowns of operations (up to six weeks) for program changeovers. Accordingly, our quarterly results may reflect these trends.

LITIGATION AND ENVIRONMENTAL MATTERS

We are involved in, or potentially subject to, various legal proceedings or claims incidental to our business. These include, but are not limited to, matters arising out of product warranties, tax or contractual matters, and environmental obligations. Although the outcome of these matters cannot be predicted with certainty, at this time we do not believe that any of these matters, individually or in the aggregate, will have a material adverse effect on our financial condition, results of operations or cash flows.

We are subject to various federal, state, local and foreign environmental and occupational safety and health laws, regulations and ordinances, including those regulating air emissions, water discharge, waste management and environmental cleanup. We will continue to closely monitor our environmental conditions to ensure that we are in compliance with all laws, regulations and ordinances. We have made, and anticipate continuing to make, capital and other expenditures (including recurring administrative costs) to comply with environmental requirements at our current and former facilities. Such expenditures were not significant in the second quarter of 2020.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

MARKET RISK

Our business and financial results are affected by fluctuations in global financial markets, including currency exchange rates and interest rates. Our hedging policy has been developed to manage these risks to an acceptable level based on management’s judgment of the appropriate trade-off between risk, opportunity and cost. We do not hold financial instruments for trading or speculative purposes.

Currency Exchange Risk From time to time, we use foreign currency forward contracts to reduce the effects of fluctuations in exchange rates relating to certain foreign currencies. At June 30, 2020, we had currency forward contracts with a notional amount of $144.7 million outstanding. The potential decrease in fair value of foreign exchange contracts, assuming a 10% adverse change in the foreign currency exchange rates, would be approximately $13.2 million at June 30, 2020 and was approximately $16.5 million at December 31, 2019.

In 2019, we entered into a fixed-to-fixed cross-currency swap to reduce the variability of functional currency equivalent cash flows associated with changes in exchange rates on certain Euro-based intercompany loans. In the first quarter of 2020, we discontinued this cross-currency swap, which was in an asset position of $9.8 million on the date that it was discontinued. Also in the first quarter of 2020, we entered into a new fixed-to-fixed cross-currency swap to reduce the variability of functional currency equivalent cash flows associated with changes in exchange rates on certain Euro-based intercompany loans. At June 30, 2020, the notional amount of the fixed-to-fixed cross-currency swap was $224.7 million. The potential decrease in fair value of the fixed-to-fixed cross-currency swap, assuming a 10% adverse change in the foreign currency exchange rates, would be approximately $22.5 million at June 30, 2020 and was approximately $22.4 million at December 31, 2019.

Future business operations and opportunities, including the expansion of our business outside North America, may further increase the risk that cash flows resulting from these global operations may be adversely affected by changes in currency exchange rates. If and when appropriate, we intend to manage these risks by creating natural hedges in the structure of our global operations, utilizing local currency funding of these expansions and various types of foreign exchange contracts.

Interest Rate Risk We are exposed to variable interest rates on certain credit facilities. From time to time, we have used interest rate hedging to reduce the effects of fluctuations in market interest rates. In 2019, we entered into a variable-to-fixed interest rate swap to reduce the variability of cash flows associated with interest payments on our variable rate debt. We have the following notional amounts hedged in relation to our variable-to-fixed interest rate swap: $900.0 million through May 2021, $750.0 million through May 2022, $600.0 million through May 2023 and $500.0 million through May 2024.

The pre-tax earnings and cash flow impact of a one-percentage-point increase in interest rates (approximately 18% of our weighted-average interest rate at June 30, 2020) on our long-term debt outstanding, would be approximately $9.3 million at June 30, 2020 and was approximately $6.3 million at December 31, 2019, on an annualized basis.

Item 4. Controls and Procedures

Disclosure Controls and Procedures

Under the direction of our Chief Executive Officer and Chief Financial Officer, we evaluated our disclosure controls and procedures and internal control over financial reporting and concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) or 15d-15(e) under the Securities Exchange Act of 1934 (the “Exchange Act”)) were effective as of June 30, 2020.

Changes in Internal Control over Financial Reporting

On January 1, 2019, we began the implementation of our global enterprise resource planning (ERP) systems at certain of the locations that were acquired as part of the MPG acquisition. As part of these implementations, we have modified the design and documentation of our internal controls processes and procedures, where appropriate. We will continue to implement these ERP systems at certain locations throughout the remainder of 2020.

As a result of temporarily closing many of our global facilities due to the impact of COVID-19, a significant number of our associates have been working remotely during the second quarter of 2020. This has not had a material effect on our internal control over financial reporting as we have maintained our existing controls and procedures over financial reporting during this period.

Except as described above with regard to implementation of ERP systems at certain legacy MPG locations, there were no changes in our internal control over financial reporting during the quarter ended June 30, 2020 that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1A. Risk Factors

In addition to the risk factors that are included in Item 1A "Risk Factors" of our Annual Report on Form 10-K for the year ended December 31, 2019 and in Item 1A "Risk Factors" in our Quarterly Report on Form 10-Q for the quarter ended March 31, 2020, the following was identified as a significant risk to AAM during the six months ended June 30, 2020.

Our business and financial condition have been, and may continue to be, adversely affected by the impact of COVID-19.

Our business is subject to risks associated with public health issues, including pandemics such as COVID-19. During the six months ended June 30, 2020, COVID-19 has disrupted global economic markets and has led to significant reductions in global automotive production volumes. As a result of COVID-19, governmental and public health officials in substantially all of the locations in which we operate have mandated certain precautions to mitigate the spread of the disease, including shelter-in-place orders or similar measures. As such, we temporarily suspended production, or experienced a significant reduction in production volumes, in substantially all of our manufacturing facilities during this period.

Our results of operations and financial condition have been, and may continue to be, adversely impacted by the actions taken to contain the impact of COVID-19, and the ultimate extent of such impact will depend on future developments, such as the duration and extent of the pandemic, its impact on: consumers and sales of the vehicles we support, our customers and our and their suppliers, how quickly normal economic conditions and our and our customers' operations can return to more normalized levels of production, and whether the pandemic leads to recessionary conditions and the duration of any such recession. In addition, government sponsored economic stimulus programs in response to the pandemic may not be available to our customers, our suppliers or us or achieve their economic goals. Our supply chain also may be disrupted due to supplier closures or bankruptcies. Our operations may also be impacted by interruptions due to the direct impact of, or precautionary measures associated with, COVID-19 at our locations or those of our customers or suppliers.

Further, COVID-19 could exacerbate other risks disclosed in Item 1A. "Risk Factors" as included in our Annual Report on Form 10-K for the year ended December 31, 2019. These risks include, but are not limited to, dependency on certain customers, dependency on certain global automotive market segments, risks and uncertainties associated with our company's global operations, dependency on certain key manufacturing facilities, cyclicality in the automotive industry, disruptions in our supply chain and our customers' supply chain, and compliance with our debt covenants.

Item 2. Unregistered Sales of Equity Securities and Use of Proceeds

The following table provides information about our equity security purchases during the quarter ended June 30, 2020:

ISSUER PURCHASES OF EQUITY SECURITIES

Period	Total Number of Shares (or Units) Purchased	Average Price Paid per Share (or Unit)	Total Number of Shares (or Units) Purchased as Part of Publicly Announced Plans or Programs	Maximum Number (or Approximate Dollar Value) of Shares (or Units) that May Yet Be Purchased Under the Plans or Programs
				(in millions)
April 1 - April 30, 2020	4,026	$ 3.09	—	$ —
May 1 - May 31, 2020	10,339	4.51	—	—
June 1 - June 30, 2020	38,456	7.54	—	—
Total	52,821	$ 6.61	—	$ —

Item 6. Exhibits

Number	Description of Exhibit
*22	Subsidiary Guarantors and Issuers of Guaranteed Securities
*31.1	Certification of David C. Dauch, Chairman of the Board & Chief Executive Officer Pursuant to Rule 13a-14(a) of the Securities Exchange Act
*31.2	Certification of Christopher J. May, Vice President & Chief Financial Officer Pursuant to Rule 13a-14(a) of the Securities Exchange Act
*32	Certifications of David C. Dauch, Chairman of the Board & Chief Executive Officer and Christopher J. May, Vice President & Chief Financial Officer Pursuant to 18 U.S.C. Section 1350, as Adopted Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
101.INS	XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document
**101.SCH	XBRL Taxonomy Extension Schema Document
**101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document
**101.LAB	XBRL Taxonomy Extension Label Linkbase Document
**101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document
**101.DEF	XBRL Taxonomy Extension Definition Linkbase Document

* Filed herewith

** Submitted electronically with this Report.

SIGNATURES

Pursuant to the requirements 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.

AMERICAN AXLE & MANUFACTURING HOLDINGS, INC.
(Registrant)

/s/ James G. Zaliwski
James G. Zaliwski
Chief Accounting Officer
July 31, 2020

EXHIBIT 22 - SUBSIDIARY GUARANTORS AND ISSUERS OF GUARANTEED SECURITIES
AMERICAN AXLE & MANUFACTURING HOLDINGS, INC.

Our 6.875% Notes, 6.625% Notes, 6.50% Notes, 6.25% Notes (due 2026) and 6.25% Notes (due 2025) are senior unsecured obligations of American Axle & Manufacturing, Inc., all of which are fully and unconditionally guaranteed, on a joint and several basis, by American Axle & Manufacturing Holdings, Inc. and substantially all domestic subsidiaries of American Axle & Manufacturing, Inc. and Metaldyne Performance Group, Inc. The table below defines these entities.

Entity	Organized Under Laws of
Parent Entity	
American Axle & Manufacturing Holdings, Inc.	Delaware
Issuing Entity	
American Axle & Manufacturing, Inc.	Delaware
Guarantor Entities	
AAM International Holdings, Inc.	Delaware
Auburn Hills Manufacturing, Inc.	Delaware
Oxford Forge, Inc.	Delaware
MSP Industries Corporation	Michigan
Colfor Manufacturing, Inc.	Delaware
Accugear, Inc.	Delaware
Rochester Manufacturing, LLC	Indiana
Metaldyne Performance Group, Inc.	Delaware
MPG Holdco I Inc.	Delaware
Metaldyne BSM, LLC	Delaware
Metaldyne M&A Bluffton, LLC	Delaware
Metaldyne Powertrain Components, Inc.	Delaware
Metaldyne Sintered Ridgway, LLC	Delaware
Metaldyne SinterForged Products, LLC	Delaware
Punchcraft Machining and Tooling, LLC	Delaware
HHI FormTech, LLC	Delaware
Jernberg Industries, LLC	Delaware
Impact Forge Group, LLC	Delaware
ASP HHI Holdings, Inc.	Delaware
ASP HHI Acquisition Co., Inc.	Delaware
ASP MD Holdings, Inc.	Delaware
MD Investors Corporation	Delaware
Metaldyne, LLC	Delaware
Gear Design and Manufacturing, LLC	Delaware
AAM Powder Metal Components, Inc.	Ohio
ASP Grede Intermediate Holdings LLC	Delaware
HHI Holdings, LLC	Delaware
AAM Casting Corp.	Delaware

EXHIBIT 31.1 - CERTIFICATION PURSUANT TO RULE 13a-14(a)
OF THE SECURITIES EXCHANGE ACT

I, David C. Dauch, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of American Axle & Manufacturing Holdings, Inc.;

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

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

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

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

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

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

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

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

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

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

Date: July 31, 2020

/s/ David C. Dauch
David C. Dauch
Chairman of the Board & Chief Executive Officer
(Principal Executive Officer)

EXHIBIT 31.2 - CERTIFICATION PURSUANT TO RULE 13a-14(a)
OF THE SECURITIES EXCHANGE ACT

I, Christopher J. May, certify that:

1. I have reviewed this Quarterly Report on Form 10-Q of American Axle & Manufacturing Holdings, Inc.;

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

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

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

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

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

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

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

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

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

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

Date: July 31, 2020

/s/ Christopher J. May
Christopher J. May
Vice President & Chief Financial Officer
(Principal Financial Officer)

EXHIBIT 32 - CERTIFICATIONS 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 Quarterly Report of American Axle & Manufacturing Holdings, Inc. (Issuer) on Form 10-Q for the period ending June 30, 2020 as filed with the Securities and Exchange Commission on the date hereof (Report), I, David C. Dauch, Chairman of the Board & Chief Executive Officer of the Issuer, and I, Christopher J. May, Vice President & Chief Financial Officer of the Issuer, 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 Issuer.

/s/ David C. Dauch	/s/ Christopher J. May
David C. Dauch	Christopher J. May
Chairman of the Board &	Vice President &
Chief Executive Officer	Chief Financial Officer
July 31, 2020	July 31, 2020