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 September 30, 2022

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 November 1, 2022, the latest practicable date, the number of shares of the registrant's Common Stock, par value $0.01 per share, outstanding was 114,554,229 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 SEPTEMBER 30, 2022
TABLE OF CONTENTS

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:

- significant disruptions in production, sales and/or supply as a result of public health crises, including pandemic or epidemic illness such as COVID-19, or otherwise;
- global economic conditions, including the impact of inflation or slower growth in the markets in which we operate;
- reduced purchases of our products by General Motors Company (GM), Stellantis N.V. (Stellantis), 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, Stellantis 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 the United States-Mexico-Canada Agreement (USMCA), immigration policies, political stability or geopolitical conflicts, taxes and other law changes, potential disruptions of production and supply, and currency rate fluctuations);
- supply shortages, such as the semiconductor shortage that the automotive industry is currently experiencing and the availability of natural gas or other fuel and utility sources in certain regions, labor shortages, including increased labor costs, or price increases in raw material and/or freight, utilities or other operating supplies for us or our customers as a result of pandemics, geopolitical conflicts, natural disasters or otherwise;
- 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 attacks and other similar disruptions;
- cost or 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;
- risks of environmental issues, including impacts of climate-related events, that could result in unforeseen issues or costs at our facilities, or risks of noncompliance with environmental laws and regulations, including reputational damage;
- 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 consummate and successfully integrate acquisitions and joint ventures;
- 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;
- 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 qualified personnel in key positions and functions; 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 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 September 30,		Nine Months Ended September 30,	
	2022	**2021**	**2022**	**2021**
	(in millions, except per share data)			
Net sales	**$ 1,535.2**	$ 1,213.1	**$ 4,409.7**	$ 3,921.5
Cost of goods sold	**1,357.8**	1,047.5	**3,872.0**	3,338.8
Gross profit	**177.4**	165.6	**537.7**	582.7
Selling, general and administrative expenses	**85.7**	90.5	**256.6**	266.7
Amortization of intangible assets	**21.5**	21.4	**64.4**	64.3
Restructuring and acquisition-related costs	**7.9**	7.4	**26.4**	40.8
Loss on sale of business	**—**	—	**—**	2.7
Operating income	**62.3**	46.3	**190.3**	208.2
Interest expense	**(44.8)**	(49.7)	**(132.2)**	(150.7)
Interest income	**5.4**	2.7	**11.6**	8.2
Other income (expense)				
Debt refinancing and redemption costs	**(0.2)**	(31.6)	**(6.0)**	(34.0)
Gain on bargain purchase of business	**1.4**	—	**13.0**	—
Unrealized gain (loss) on equity securities	**(2.3)**	19.4	**(24.0)**	19.4
Other expense, net	**(1.0)**	(3.1)	**(4.4)**	(1.3)
Income (loss) before income taxes	**20.8**	(16.0)	**48.3**	49.8
Income tax benefit	**(5.7)**	(13.6)	**(2.1)**	(2.4)
Net income (loss)	**$ 26.5**	$ (2.4)	**$ 50.4**	$ 52.2
Basic earnings (loss) per share	**$ 0.22**	$ (0.02)	**$ 0.42**	$ 0.44
Diluted earnings (loss) per share	**$ 0.22**	$ (0.02)	**$ 0.42**	$ 0.44

See accompanying notes to condensed consolidated financial statements.

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

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	**2021**	**2022**	**2021**
		(in millions)		
Net income (loss)	**$ 26.5**	$ (2.4)	**$ 50.4**	$ 52.2
Other comprehensive income (loss)				
Defined benefit plans, net of tax [a]	**1.5**	2.2	**4.1**	6.5
Foreign currency translation adjustments	**(34.4)**	(9.6)	**(70.7)**	(8.4)
Changes in cash flow hedges, net of tax [b]	**19.1**	(1.8)	**33.1**	3.0
Other comprehensive income (loss)	**(13.8)**	(9.2)	**(33.5)**	1.1
Comprehensive income (loss)	**$ 12.7**	$ (11.6)	**$ 16.9**	$ 53.3

(a) Amounts are net of tax of $(0.4) million and $(1.4) million for the three and nine months ended September 30, 2022, and $(0.6) million and $(1.7) million for the three and nine months ended September 30, 2021, respectively.

(b) Amounts are net of tax of $(4.9) million and $(7.6) million for the three and nine months ended September 30, 2022, and $(0.7) million and $(2.7) million for the three and nine months ended September 30, 2021, respectively.

See accompanying notes to condensed consolidated financial statements.

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

	September 30, 2022	December 31, 2021
	(Unaudited)	
Assets	*(in millions)*	
Current assets		
Cash and cash equivalents	**$ 472.3**	$ 530.2
Accounts receivable, net	**974.6**	762.8
Inventories, net	**446.8**	410.4
Prepaid expenses and other	**161.8**	152.6
Total current assets	**2,055.5**	1,856.0
Property, plant and equipment, net	**1,905.3**	1,996.1
Deferred income taxes	**135.7**	121.1
Goodwill	**179.3**	183.8
Other intangible assets, net	**636.2**	697.2
GM postretirement cost sharing asset	**200.2**	201.1
Operating lease right-of-use assets	**111.8**	123.7
Other assets and deferred charges	**455.6**	456.7
Total assets	**$ 5,679.6**	$ 5,635.7
Liabilities and Stockholders' Equity		
Current liabilities		
Current portion of long-term debt	**$ 19.2**	$ 18.8
Accounts payable	**779.6**	612.8
Accrued compensation and benefits	**202.1**	195.2
Deferred revenue	**29.2**	28.1
Current portion of operating lease liabilities	**23.2**	24.6
Accrued expenses and other	**161.0**	160.4
Total current liabilities	**1,214.3**	1,039.9
Long-term debt, net	**2,974.1**	3,085.7
Deferred revenue	**70.1**	94.8
Deferred income taxes	**14.9**	13.5
Long-term portion of operating lease liabilities	**89.6**	99.9
Postretirement benefits and other long-term liabilities	**830.1**	844.1
Total liabilities	**5,193.1**	5,177.9
Stockholders' equity		
Common stock, par value $0.01 per share; 150.0 million shares authorized;		
123.2 million shares issued as of September 30, 2022 and 122.5 million shares issued as of December 31, 2021	**1.3**	1.3
Paid-in capital	**1,365.2**	1,351.5
Accumulated deficit	**(263.5)**	(313.9)
Treasury stock at cost, 8.7 million shares as of September 30, 2022 and 8.5 million shares as of December 31, 2021	**(218.2)**	(216.3)
Accumulated other comprehensive income (loss)		
Defined benefit plans, net of tax	**(237.8)**	(241.9)
Foreign currency translation adjustments	**(182.0)**	(111.3)
Unrecognized gain (loss) on cash flow hedges, net of tax	**21.5**	(11.6)
Total stockholders' equity	**486.5**	457.8
Total liabilities and stockholders' equity	**$ 5,679.6**	$ 5,635.7

See accompanying notes to condensed consolidated financial statements.

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

	Nine Months Ended September 30,	
	2022	**2021**
	(in millions)	
Operating activities		
Net income	**$ 50.4**	$ 52.2
Adjustments to reconcile net income to net cash provided by operating activities		
Depreciation and amortization	**367.1**	421.2
Deferred income taxes	**(13.2)**	(17.1)
Stock-based compensation	**13.7**	13.2
Pensions and other postretirement benefits, net of contributions	**(7.0)**	(9.3)
Loss on sale of business	**—**	2.7
Loss (gain) on disposal of property, plant and equipment, net	**(1.8)**	2.1
Unrealized loss (gain) on equity securities	**24.0**	(19.4)
Gain on bargain purchase of business	**(13.0)**	—
Debt refinancing and redemption costs	**6.0**	34.0
Changes in operating assets and liabilities		
Accounts receivable	**(205.5)**	46.7
Inventories	**(11.9)**	(94.1)
Accounts payable and accrued expenses	**167.1**	37.0
Deferred revenue	**(13.8)**	3.3
Other assets and liabilities	**(61.7)**	(36.5)
Net cash provided by operating activities	**300.4**	436.0
Investing activities		
Purchases of property, plant and equipment	**(117.9)**	(115.8)
Proceeds from sale of property, plant and equipment	**4.3**	1.8
Proceeds from sale of business, net of cash divested	**—**	0.9
Acquisition of business, net of cash acquired (Note 14)	**(88.3)**	(4.9)
Proceeds from insurance claim (Note 15)	**6.3**	23.1
Other investing activities	**(1.8)**	—
Net cash used in investing activities	**(197.4)**	(94.9)
Financing activities		
Proceeds from issuance of long-term debt	**222.0**	622.7
Payments of long-term debt	**(368.8)**	(999.9)
Debt issuance costs	**(4.4)**	(9.2)
Purchase of treasury stock	**(1.9)**	(4.3)
Other financing activities	**5.3**	(3.5)
Net cash used in financing activities	**(147.8)**	(394.2)
Effect of exchange rate changes on cash	**(13.1)**	(3.2)
Net decrease in cash and cash equivalents	**(57.9)**	(56.3)
Cash and cash equivalents at beginning of period	**530.2**	557.0
Cash and cash equivalents at end of period	**$ 472.3**	$ 500.7
Supplemental cash flow information		
Interest paid	**$ 117.4**	$ 153.5
Income taxes paid, net	**$ 28.5**	$ 17.8
Non-cash investing activities: Deferred consideration for acquisition of business	**$ —**	$ 10.0

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
				(in millions)			
Balance at January 1, 2021	113.3	$ 1.2	$ 1,333.3	$ (319.8)	$ (212.0)	$ (432.2)	$ 2.7
Net income	—	—	—	38.6	—	—	—
Vesting of restricted stock units and performance shares	1.0	0.1	—	—	—	—	—
Stock-based compensation	—	—	5.3	—	—	—	—
Purchase of treasury stock	(0.4)	—	—	—	(4.0)	—	—
Changes in cash flow hedges	—	—	—	—	—	(0.3)	—
Foreign currency translation adjustments	—	—	—	—	—	(11.0)	—
Defined benefit plans, net	—	—	—	—	—	2.1	—
Sale of business (Note 14)	—	—	—	—	—	—	(2.7)
Balance at March 31, 2021	113.9	$ 1.3	$ 1,338.6	$ (281.2)	$ (216.0)	$ (441.4)	$ —
Net income	—	—	—	16.0	—	—	—
Vesting of restricted stock units and performance shares	0.2	—	—	—	—	—	—
Stock-based compensation	—	—	4.7	—	—	—	—
Purchase of treasury stock	—	—	—	—	(0.2)	—	—
Changes in cash flow hedges	—	—	—	—	—	5.1	—
Foreign currency translation adjustments	—	—	—	—	—	12.2	—
Defined benefit plans, net	—	—	—	—	—	2.2	—
Balance at June 30, 2021	114.1	$ 1.3	$ 1,343.3	$ (265.2)	$ (216.2)	$ (421.9)	$ —
Net loss	—	—	—	(2.4)	—	—	—
Stock-based compensation	—	—	3.2	—	—	—	—
Purchase of treasury stock	—	—	—	—	(0.1)	—	—
Changes in cash flow hedges	—	—	—	—	—	(1.8)	—
Foreign currency translation adjustments	—	—	—	—	—	(9.6)	—
Defined benefit plans, net	—	—	—	—	—	2.2	—
Balance at September 30, 2021	114.1	$ 1.3	$ 1,346.5	$ (267.6)	$ (216.3)	$ (431.1)	$ —

	Common Stock						
	Shares Outstanding	Par Value	Paid-in Capital	Retained Earnings (Accumulated Deficit)	Treasury Stock	Accumulated Other Comprehensive Income (Loss)	Noncontrolling Interest in Subsidiaries
				(in millions)			
Balance at January 1, 2022	**114.0**	**$ 1.3**	**$ 1,351.5**	**$ (313.9)**	**$ (216.3)**	**$ (364.8)**	**$ —**
Net income	—	—	—	1.0	—	—	—
Vesting of restricted stock units	0.7	—	—	—	—	—	—
Stock-based compensation	—	—	4.5	—	—	—	—
Purchase of treasury stock	(0.2)	—	—	—	(1.8)	—	—
Changes in cash flow hedges	—	—	—	—	—	15.7	—
Foreign currency translation adjustments	—	—	—	—	—	6.0	—
Defined benefit plans, net	—	—	—	—	—	1.3	—
Balance at March 31, 2022	**114.5**	**$ 1.3**	**$ 1,356.0**	**$ (312.9)**	**$ (218.1)**	**$ (341.8)**	**$ —**
Net income	—	—	—	22.9	—	—	—
Stock-based compensation	—	—	4.6	—	—	—	—
Purchase of treasury stock	—	—	—	—	(0.1)	—	—
Changes in cash flow hedges	—	—	—	—	—	(1.7)	—
Foreign currency translation adjustments	—	—	—	—	—	(42.3)	—
Defined benefit plans, net	—	—	—	—	—	1.3	—
Balance at June 30, 2022	**114.5**	**$ 1.3**	**$ 1,360.6**	**$ (290.0)**	**$ (218.2)**	**$ (384.5)**	**$ —**
Net income	—	—	—	26.5	—	—	—
Stock-based compensation	—	—	4.6	—	—	—	—
Changes in cash flow hedges	—	—	—	—	—	19.1	—
Foreign currency translation adjustments	—	—	—	—	—	(34.4)	—
Defined benefit plans, net	—	—	—	—	—	1.5	—
Balance at September 30, 2022	**114.5**	**$ 1.3**	**$ 1,365.2**	**$ (263.5)**	**$ (218.2)**	**$ (398.3)**	**$ —**

See accompanying notes to condensed consolidated financial statements.

AMERICAN AXLE & MANUFACTURING HOLDINGS, INC.
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS
SEPTEMBER 30, 2022
(Unaudited)

1. ORGANIZATION AND BASIS OF PRESENTATION

Organization As a leading global tier 1 automotive and mobility supplier, AAM designs, engineers and manufactures Driveline and Metal Forming technologies to support electric, hybrid, and internal combustion vehicles. Headquartered in Detroit, with nearly 85 facilities in 18 countries, AAM is bringing the future faster for a safer and more sustainable tomorrow.

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, 2021 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 COVID-19, the semiconductor supply shortage that is impacting the automotive industry, inflationary pressures, fluctuations in interest and foreign exchange rates, and the conflict between Russia and Ukraine. 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 these matters 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, 2021.

Effect of New Accounting Standards and Other Regulatory Pronouncements

Accounting Standard Update 2021-10

On November 17, 2021, the FASB issued ASU 2021-10 - Government Assistance (Topic 832). This guidance established requirements for annual disclosures about certain types of material government assistance, including government grants and tax credits. This guidance became effective and we prospectively adopted this guidance on January 1, 2022. The adoption of this standard did not have a material impact on our condensed consolidated financial statements.

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 they remain 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. We received income tax refunds of $5.4 million and $6.0 million in the first quarter of 2022 and 2021, respectively, as a result of this provision of the CARES Act.
- 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 paid by December 31, 2021 and the remaining 50% to be paid by December 31, 2022. At September 30, 2022, we had deferred $7.6 million of social security taxes, which are expected to be paid in the fourth quarter of 2022.

2. RESTRUCTURING AND ACQUISITION-RELATED COSTS

In the first quarter of 2020, we initiated a new global restructuring program (the 2020 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 2022.

In the second quarter of 2021, we completed the acquisition of a manufacturing facility in Emporium, Pennsylvania (Emporium), and subsequently determined that we will cease production at the facility in 2022 and relocate the production capacity to other AAM manufacturing facilities. As a result, during the nine months ended September 30, 2022, we incurred restructuring charges related to the anticipated closure of the facility and expect to incur costs associated with the closure of the facility through 2022.

A summary of our restructuring activity for the first nine months of 2022 and 2021 is shown below:

	Severance Charges	Implementation Costs	Total
		(in millions)	
Accrual at December 31, 2020	$ 1.7	$ 9.8	$ 11.5
Charges	2.7	33.2	35.9
Cash utilization	(3.9)	(39.7)	(43.6)
Accrual at September 30, 2021	$ 0.5	$ 3.3	$ 3.8
Accrual at December 31, 2021	**$ 0.7**	**$ 2.7**	**$ 3.4**
Charges	**3.4**	**15.8**	**19.2**
Cash utilization	**(1.3)**	**(13.9)**	**(15.2)**
Accrual at September 30, 2022	**$ 2.8**	**$ 4.6**	**$ 7.4**

As part of our restructuring actions, we incurred total severance charges of approximately $3.4 million and $2.7 million during the nine months ended September 30, 2022 and 2021, respectively. We also incurred total implementation costs of approximately $15.8 million and $33.2 million during the nine months ended September 30, 2022 and 2021, respectively. Implementation costs consist primarily of professional fees and plant exit costs.

We incurred $12.4 million of restructuring costs under the 2020 Program and incurred $6.8 million of costs associated with the anticipated closure of Emporium in the nine months ended September 30, 2022. We have incurred $99.7 million of total restructuring costs under the 2020 Program since inception and have incurred $10.5 million of total costs related to the anticipated closure of Emporium.

Approximately $1.3 million and $12.0 million of our total restructuring costs for the nine months ended September 30, 2022 related to our Driveline and Metal Forming segments, respectively, while the remainder were corporate costs. Approximately $3.9 million and $3.1 million of our total restructuring costs for the nine months ended September 30, 2021 related to our Driveline and Metal Forming segments, respectively, while the remainder were corporate costs. We expect to incur approximately $20 million to $30 million of total restructuring charges in 2022 associated with the 2020 Program, our closure of Emporium and potential restructuring actions related to our acquisition of the Tekfor Group (Tekfor).

On June 1, 2022, our acquisition of Tekfor became effective. The following table represents a summary of acquisition-related charges incurred primarily related to our acquisition of Tekfor, as well as integration costs incurred for acquisitions:

	Acquisition-Related Costs	Integration Expenses	Total
		(in millions)	
Charges for the nine months ended September 30, 2022	**$ 5.8**	**$ 1.4**	**$ 7.2**
Charges for the nine months ended September 30, 2021	0.3	4.6	4.9

Acquisition-related costs primarily consist of advisory, legal, accounting, valuation and certain other professional or consulting fees incurred. Integration expenses primarily reflect costs incurred for information technology infrastructure and enterprise resource planning systems, and consulting fees incurred in conjunction with integration activities. 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 $7.9 million and $26.4 million for the three and nine months ended September 30, 2022, respectively, and $7.4 million and $40.8 million for the three and nine months ended September 30, 2021, respectively.

3. 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:

	September 30, 2022	December 31, 2021
	(in millions)	
Raw materials and work-in-progress	**$ 398.2**	$ 339.7
Finished goods	**76.7**	89.3
Gross inventories	**474.9**	429.0
Inventory valuation reserves	**(28.1)**	(18.6)
Inventories, net	**$ 446.8**	$ 410.4

4. GOODWILL AND OTHER INTANGIBLE ASSETS

Goodwill The following table provides a reconciliation of changes in goodwill for the nine months ended September 30, 2022:

	Consolidated
	(in millions)
Balance at December 31, 2021	**$ 183.8**
Foreign currency translation	**(4.5)**
Balance at September 30, 2022	**$ 179.3**

We conduct our annual goodwill impairment test in the fourth quarter of each year, as well as whenever adverse events or changes in circumstances indicate a possible impairment. 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.

At September 30, 2022, accumulated goodwill impairment losses were $1,435.5 million. All remaining goodwill is attributable to our Driveline reporting unit.

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:

	September 30, 2022			December 31, 2021		
	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount	Gross Carrying Amount	Accumulated Amortization	Net Carrying Amount
	(in millions)					
Capitalized computer software	**$ 51.3**	**$ (42.0)**	**$ 9.3**	$ 47.3	$ (37.0)	$ 10.3
Customer platforms	**856.2**	**(348.9)**	**507.3**	856.2	(301.3)	554.9
Customer relationships	**53.0**	**(18.8)**	**34.2**	53.0	(16.2)	36.8
Technology and other	**153.8**	**(68.4)**	**85.4**	156.1	(60.9)	95.2
Total	**$ 1,114.3**	**$ (478.1)**	**$ 636.2**	$ 1,112.6	$ (415.4)	$ 697.2

Amortization expense for our intangible assets was $21.5 million and $64.4 million for the three and nine months ended September 30, 2022, respectively, and $21.4 million and $64.3 million for the three and nine months ended September 30, 2021. Estimated amortization expense for the years 2022 through 2026 is expected to be in the range of approximately $80 million to $85 million per year.

5. LONG-TERM DEBT

Long-term debt consists of the following:

	September 30, 2022	December 31, 2021
	(in millions)	
Revolving Credit Facility	**$ —**	$ —
Term Loan A Facility	**520.0**	301.8
Term Loan B Facility	**750.0**	850.0
6.875% Notes due 2028	**400.0**	400.0
6.50% Notes due 2027	**500.0**	500.0
6.25% Notes due 2026	**180.0**	400.0
5.00% Notes due 2029	**600.0**	600.0
Foreign credit facilities and other	**70.2**	86.1
Total debt	**3,020.2**	3,137.9
Less: Current portion of long-term debt	**19.2**	18.8
Long-term debt	**3,001.0**	3,119.1
Less: Debt issuance costs	**26.9**	33.4
Long-term debt, net	**$ 2,974.1**	$ 3,085.7

Senior Secured Credit Facilities In 2017, American Axle & Manufacturing Holdings, Inc. (Holdings) and American Axle & Manufacturing, Inc. (AAM, Inc.) entered into a credit agreement which was amended on July 29, 2019 and further amended on April 28, 2020, and June 11, 2021 (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 originally included a $340 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 $925 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 March 2022, Holdings and AAM, Inc. entered into the Amended & Restated Credit Agreement. The Amended & Restated Credit Agreement, among other things, increased the principal amount of the Term Loan A Facility to $520.0 million, extended the maturity date of the Term Loan A Facility and the Revolving Credit Facility each to March 11, 2027, and established the use under the Term Loan A Facility and Revolving Credit Facility of the Secured Overnight Financing Rate (SOFR) and the minimum Adjusted Term SOFR Rate for Eurodollar-based loans denominated in U.S. Dollars and the Sterling Overnight Index Average (SONIA) and the minimum adjusted daily simple SONIA for loans denominated in Sterling. The Amended & Restated Credit Agreement also removed the senior secured net leverage ratio covenant, increased the maximum levels of the total net leverage ratio covenant for certain periods, modified 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, to make investments and to make or agree to pay or make certain restricted payments, voluntary payments and distributions. We expensed $0.2 million of debt refinancing costs, paid accrued interest of $1.0 million, and paid debt issuance costs of $4.4 million in the nine months ended September 30, 2022 related to the Amended & Restated Credit Agreement.

The terms of the Term Loan B Facility, including the maturity date, interest rates and applicable margin with respect to such interest rates, under the Amended & Restated Credit Agreement remain unchanged. There are no significant current maturities under the Term Loan A Facility and there are no scheduled payments due under the Term Loan B Facility until maturity in 2024.

In the first quarter of 2022, we made a voluntary prepayment of $25.0 million on our Term Loan B Facility. As a result, we expensed approximately $0.2 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of this borrowing.

In the second quarter of 2022, we made a voluntary prepayment of $25.0 million on our Term Loan B Facility. As a result, we expensed approximately $0.2 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of this borrowing.

In the third quarter of 2022, we made voluntary prepayments totaling $50.0 million on our Term Loan B Facility. As a result, we expensed approximately $0.2 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of this borrowing.

In the first quarter of 2021, we made a voluntary prepayment of $100.0 million on our Term Loan B Facility and $4.3 million on our Term Loan A Facility. As a result, we expensed approximately $1.1 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of these borrowings.

In the second quarter of 2021, we made voluntary prepayments totaling $138.8 million on our Term Loan B Facility and $4.2 million on our Term Loan A Facility. As a result, we expensed approximately $1.3 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of these borrowings.

In the third quarter of 2021, we made a voluntary prepayment of $12.7 million on our Term Loan A Facility. As a result, we expensed approximately $0.1 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of this borrowing.

At September 30, 2022, we had $893.5 million available under the Revolving Credit Facility. This availability reflects a reduction of $31.5 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.

Redemption of 6.25% Notes due 2026 In the first quarter of 2022, we used the proceeds from the upsized Term Loan A Facility to voluntarily redeem a portion of our 6.25% Notes due 2026. This resulted in a principal payment of $220.0 million and $0.2 million in accrued interest. We also expensed approximately $1.8 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of the borrowing, and approximately $3.4 million for the payment of an early redemption premium.

5.00% Notes due 2029 In the third quarter of 2021, we issued $600.0 million in aggregate principal amount of 5.00% senior notes due 2029 (the 5.00% Notes). Proceeds from the 5.00% Notes were used to fund the redemption of the remaining $600.0 million of our former 6.25% senior notes due 2025. We paid debt issuance costs of $9.2 million in the nine months ended September 30, 2021 related to the 5.00% Notes.

Redemption of 6.25% Notes due 2025 In the third quarter of 2021, we voluntarily redeemed our 6.25% Notes due 2025. This resulted in principal payments totaling $700.0 million and $19.4 million in accrued interest. We also expensed approximately $9.6 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 $21.9 million for the payment of an early redemption premium.

Repayment of Tekfor Group Indebtedness Upon the acquisition of Tekfor, we assumed $23.4 million of existing Tekfor indebtedness, of which we repaid $10.7 million in the first nine months of 2022.

Foreign credit facilities and Other We utilize local currency credit facilities to finance the operations of certain foreign subsidiaries. At September 30, 2022, $70.2 million was outstanding under our foreign credit facilities, as compared to $86.1 million at December 31, 2021. At September 30, 2022, an additional $64.7 million was available under our foreign credit facilities.

Weighted-Average Interest Rate The weighted-average interest rate of our long-term debt outstanding was 5.8% at September 30, 2022 and 5.6% at December 31, 2021.

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 September 30, 2022 and December 31, 2021, we had currency forward contracts outstanding with a total notional amount of $172.8 million and $164.7 million, respectively, that hedge our exposure to changes in foreign currency exchange rates for certain payroll expenses into the second quarter of 2025 and the purchase of certain direct and indirect inventory and other working capital items into the second quarter of 2023.

Fixed-to-fixed cross-currency swap In 2020, 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 second quarter of 2022, we discontinued this fixed-to-fixed cross-currency swap, which was in an asset position of $9.7 million on the date that it was discontinued.

Also in the second quarter of 2022, 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. We had notional amounts outstanding under fixed-to-fixed cross-currency swaps of €200.0 million at both September 30, 2022 and December 31, 2021, which were equivalent to $195.9 million and $226.9 million, respectively. The fixed-to-fixed cross-currency swap 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. In the second quarter of 2022, we discontinued this variable-to-fixed interest rate swap, which was in an asset position of $6.1 million on the date that it was discontinued.

Also in the second quarter of 2022, we entered into a new variable-to-fixed interest rate swap to reduce the variability of cash flows associated with interest payments on our variable rate debt. As of September 30, 2022, we have $500.0 million notional amount hedged in relation to our variable-to-fixed interest rate swap into the third quarter of 2027.

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

	Location of Gain (Loss) Reclassified into Net Income	Gain (Loss) Reclassified During Three Months Ended September 30, 2022	2021	Nine Months Ended September 30, 2022	2021	Total of Financial Statement Line Item 2022	Gain Expected to be Reclassified During the Next 12 Months
				(in millions)			
Currency forward contracts	Cost of Goods Sold	**$ 1.5**	$ 1.1	**$ 4.6**	$ 5.2	**$ 3,872.0**	**$ 5.6**
Fixed-to-fixed cross-currency swap	Other Income (Expense), net	**13.8**	6.0	**31.7**	14.0	**(4.4)**	**0.3**
Variable-to-fixed interest rate swap	Interest Expense	**(0.1)**	(3.5)	**(3.5)**	(11.4)	**(132.2)**	**5.3**

See Note 12 - Reclassifications Out of Accumulated Other Comprehensive Income (Loss) (AOCI) for amounts recognized in other comprehensive income (loss) during the three and nine months ended September 30, 2022 and 2021.

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 September 30, 2022	Three Months Ended September 30, 2021	Nine Months Ended September 30, 2022	Nine Months Ended September 30, 2021	Total of Financial Statement Line Item 2022
		(in millions)				
Currency forward contracts	Other Income (Expense), net	**$ 0.3**	$ (0.5)	**$ 1.4**	$ (0.1)	**$ (4.4)**

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 carrying 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:

	Fair Value		
	September 30, 2022	**December 31, 2021**	**Input**
	(in millions)		
Balance Sheet Classification			
Cash equivalents	**$ 292.0**	$ 196.5	Level 1
Prepaid expenses and other			
Cash flow hedges - currency forward contracts	**5.7**	2.2	Level 2
Cash flow hedges - variable-to-fixed interest rate swap	**2.5**	1.9	Level 2
Nondesignated - currency forward contracts	**0.2**	0.2	Level 2
Other assets and deferred charges			
Cash flow hedges - currency forward contracts	**1.6**	1.4	Level 2
Cash flow hedges - fixed-to-fixed cross-currency swap	**15.3**	—	Level 2
Cash flow hedges - variable-to-fixed interest rate swap	**9.4**	2.2	Level 2
Investment in equity securities	**3.4**	27.4	Level 1
Accrued expenses and other			
Cash flow hedges - currency forward contracts	**—**	0.3	Level 2
Cash flow hedges - variable-to-fixed interest rate swap	**—**	9.6	Level 2
Postretirement benefits and other long-term liabilities			
Cash flow hedges - currency forward contracts	**0.1**	0.6	Level 2
Cash flow hedges - fixed-to-fixed cross-currency swap	**—**	3.7	Level 2
Cash flow hedges - variable-to-fixed interest rate swap	**—**	12.7	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 have an investment in the equity securities of REE Automotive, an e-mobility company. These equity securities are measured at fair value each reporting period with changes in fair value reported through an unrealized gain or loss within Other income (expense), net in our Condensed Consolidated Statement of Operations. As of September 30, 2022, our investment in REE shares was valued at $3.4 million based on a closing price on that date of $0.68 per share.

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

	September 30, 2022		December 31, 2021		
	Carrying Amount	**Fair Value**	**Carrying Amount**	**Fair Value**	**Input**
	(in millions)				
Revolving Credit Facility	**$ —**	**$ —**	$ —	$ —	Level 2
Term Loan A Facility	**520.0**	**507.7**	301.8	301.8	Level 2
Term Loan B Facility	**750.0**	**731.3**	850.0	847.9	Level 2
6.875% Notes due 2028	**400.0**	**342.0**	400.0	430.0	Level 2
6.50% Notes due 2027	**500.0**	**422.5**	500.0	519.4	Level 2
6.25% Notes due 2026	**180.0**	**165.2**	400.0	408.5	Level 2
5.00% Notes due 2029	**600.0**	**450.0**	600.0	588.0	Level 2

8. EMPLOYEE BENEFIT PLANS

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

	Pension Benefits			
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
	(in millions)			
Service cost	**$ 0.5**	$ 0.5	**$ 1.4**	$ 1.5
Interest cost	**4.1**	4.4	**12.5**	13.0
Expected asset return	**(8.0)**	(9.7)	**(23.8)**	(29.1)
Amortized loss	**2.0**	2.7	**5.8**	8.1
Net periodic benefit credit	**$ (1.4)**	$ (2.1)	**$ (4.1)**	$ (6.5)

	Other Postretirement Benefits			
	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	2022	2021
	(in millions)			
Service cost	**$ 0.1**	$ —	**$ 0.2**	$ 0.2
Interest cost	**2.1**	2.1	**6.3**	6.3
Amortized loss	**0.2**	0.4	**0.4**	1.2
Amortized prior service credit	**(0.3)**	(0.3)	**(0.7)**	(1.1)
Net periodic benefit cost	**$ 2.1**	$ 2.2	**$ 6.2**	$ 6.6

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 September 30, 2022 and December 31, 2021, we have a noncurrent pension liability of $113.9 million and $121.3 million, respectively. As of September 30, 2022 and December 31, 2021, we have a noncurrent other postretirement benefits liability of $476.2 million and $481.2 million, respectively.

Due to the availability of our pre-funded pension balances (previous contributions in excess of prior required pension contributions), we expect our regulatory pension funding requirements in 2022 to be less than $1 million. We expect our cash payments for other postretirement benefit obligations in 2022, net of GM cost sharing, to be approximately $16.5 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 September 30,		Nine Months Ended September 30,	
	2022	2021	**2022**	2021
	(in millions)			
Beginning balance	**$ 61.9**	$ 64.3	**$ 59.5**	$ 66.7
Accruals	**3.4**	5.7	**11.3**	14.1
Payments	**(4.5)**	(11.7)	**(8.6)**	(14.3)
Adjustment to prior period accruals	**(7.3)**	(0.4)	**(7.9)**	(8.4)
Foreign currency translation	**(0.8)**	(0.3)	**(1.6)**	(0.5)
Ending balance	**$ 52.7**	$ 57.6	**$ 52.7**	$ 57.6

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 the effects of changes in tax laws or rates on deferred tax balances, 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.

Our income tax benefit and effective income tax rate for the three and nine months ended September 30, 2022 and 2021 are as follows:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	2021	**2022**	2021
	(in millions)			
Income tax benefit	**$ (5.7)**	$ (13.6)	**$ (2.1)**	$ (2.4)
Effective income tax rate	**(27.4)%**	85.0 %	**(4.3)%**	(4.8)%

For the three and nine months ended September 30, 2022, we recognized a net income tax benefit of approximately $7.5 million related to the release of a valuation allowance in a foreign jurisdiction. During the three and nine months ended September 30, 2021, we recognized a net income tax benefit of approximately $5.2 million related to our ability to carry back prior year losses to tax years with the higher 35% corporate income tax rate under provisions of the CARES Act.

Our effective income tax rate for the three months ended September 30, 2022 varies from our effective income tax rate for the three months ended September 30, 2021 primarily as a result of the release of the foreign valuation allowance during the three months ended September 30, 2022 as noted above, as well as the mix of earnings on a jurisdictional basis during these periods. Our effective income tax rate for the nine months ended September 30, 2022 varies from our effective income tax rate for the nine months ended September 30, 2021 primarily as a result of the $13.0 million gain on bargain purchase of business recognized in the nine months ended September 30, 2022, which was not subject to income tax, as well as the release of the foreign valuation allowance during the nine months ended September 30, 2022 and the mix of earnings on a jurisdictional basis during these periods.

For the three and nine months ended September 30, 2022 and 2021, our effective income tax rates vary from the U.S. federal statutory rate primarily due to the discrete items noted above, the benefit from foreign derived intangible income deductions, the change in jurisdictional mix of earnings, and favorable foreign tax rates and the impact of tax credits. In addition, for the nine months ended September 30, 2022, our effective income tax rate varies from the U.S. federal statutory rate as a result of the gain on bargain purchase of business recognized during this period.

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 September 30, 2022, we released a valuation allowance against the net deferred tax assets in a foreign jurisdiction resulting in a net tax benefit of approximately $7.5 million. Due to the uncertainty associated with the extent and ultimate impact of the significant supply chain constraints affecting the automotive industry, including COVID-19, the semiconductor shortage and resulting impact on global automotive production volumes, and the conflict between Russia and Ukraine, we may experience lower than projected earnings in certain jurisdictions in future periods, and as a result, it is reasonably possible that changes in valuation allowances could be recognized in future periods and such changes could be material to our financial statements.

Other Income Tax Matters

We operate in multiple jurisdictions throughout the world and the income tax returns of several subsidiaries in various tax jurisdictions are currently under examination. During their examination of our 2015 U.S. federal income tax return, the Internal Revenue Service (IRS) asserted that income earned by a Luxembourg subsidiary from its Mexican branch operations should be categorized as foreign base company sales income (FBCSI) under Section 954(d) of the Internal Revenue Code and recognized currently as taxable income on our 2015 U.S. federal income tax return. As a result of this assertion, the IRS issued a Notice of Proposed Adjustment (NOPA). AAM disagreed with the NOPA, believes that the proposed adjustment is without merit and contested the matter through the IRS's administrative appeals process. No resolution was reached in the appeals process and on September 15, 2022, the IRS issued a Notice of Deficiency with an asserted tax liability of approximately $7 million related to the 2015 tax year, as calculated by the IRS, after utilizing available net operating losses and income tax credits. We believe it is likely that we will be successful in ultimately defending our position. As such, we have not recorded any impact of the IRS's proposed adjustment in our condensed consolidated financial statements. In the event AAM is not successful in defending its position, the potential additional income tax expense, including estimated interest charges, related to tax years 2015 through 2021, is estimated to be in the range of approximately $275 million to $325 million. We expect to pay the asserted tax liability of approximately $7 million related to 2015, plus related interest, during the first half of 2023.

In a matter of related interest, in May 2020, the U.S Tax Court ruled against another U.S. corporation, finding that the income it earned through a Mexican branch of its Luxembourg subsidiary corporation was FBCSI. In that situation, the taxpayer appealed the U.S. Tax Court decision to the U.S. Court of Appeals for the Sixth Circuit. In December 2021, the U.S. Court of Appeals affirmed, in a split decision, the Tax Court decision in favor of the IRS. In January 2022, the taxpayer in the above referenced matter filed a petition for rehearing and this petition was denied by the U.S. Court of Appeals for the Sixth Circuit in March 2022. In June 2022, the taxpayer filed a petition with the United States Supreme Court to review the judgment of the U.S. Court of Appeals for the Sixth Circuit and this petition is pending.

Notwithstanding the decisions rendered thus far in that case, and because our position is based upon different facts and circumstances, including but not limited to, differences in structure, and different income tax regulations in effect for our tax years under examination, we continue to believe, after consultation with tax and legal counsel that it is more likely than not that our structure does not give rise to FBCSI. We intend to continue to vigorously contest the conclusions reached in the Notice of Deficiency with the IRS and, if necessary, through litigation.

Negative or unexpected outcomes of tax examinations and audits, and any related litigation, could have a material adverse impact on our results of operations, financial condition and cash flows. 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. On June 1, 2022, our acquisition of Tekfor became effective and we recorded a liability for unrecognized income tax benefits of $12.6 million as of June 1, 2022 associated with the acquired entities. As of September 30, 2022 and December 31, 2021, we have recorded a liability for unrecognized income tax benefits and related interest and penalties of $35.5 million and $23.4 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 are our 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 September 30,		Nine Months Ended September 30,	
	2022	**2021**	**2022**	**2021**
	(in millions, except per share data)			
Numerator				
Net income (loss)	**$ 26.5**	$ (2.4)	**$ 50.4**	$ 52.2
Less: Net income attributable to participating securities	**(1.1)**	—	**(2.0)**	(2.0)
Net income (loss) attributable to common shareholders - Basic and Dilutive	**$ 25.4**	$ (2.4)	**$ 48.4**	$ 50.2
Denominators				
Basic common shares outstanding -				
Weighted-average shares outstanding	**119.6**	118.5	**119.3**	118.5
Less: Participating securities	**(5.0)**	(4.4)	**(4.9)**	(4.6)
Weighted-average common shares outstanding	**114.6**	114.1	**114.4**	113.9
Effect of dilutive securities -				
Dilutive stock-based compensation	**1.5**	—	**0.9**	0.2
Diluted shares outstanding -				
Adjusted weighted-average shares after assumed conversions	**116.1**	114.1	**115.3**	114.1
Basic EPS	**$ 0.22**	$ (0.02)	**$ 0.42**	$ 0.44
Diluted EPS	**$ 0.22**	$ (0.02)	**$ 0.42**	$ 0.44

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

Reclassification adjustments and other activity impacting accumulated other comprehensive income (loss) during the three and nine months ended September 30, 2022 and September 30, 2021 are as follows *(in millions)*:

	Defined Benefit Plans	Foreign Currency Translation Adjustments	Unrecognized Gain (Loss) on Cash Flow Hedges	Total
Balance at June 30, 2022	**$ (239.3)**	**$ (147.6)**	**$ 2.4**	**$ (384.5)**
Other comprehensive income (loss) before reclassifications	**—**	**(34.4)**	**39.2**	**4.8**
Income tax effect of other comprehensive income (loss) before reclassifications	**—**	**—**	**(7.8)**	**(7.8)**
Amounts reclassified from accumulated other comprehensive income (loss)	**1.9** (a)	**—**	**(15.2)** (b)	**(13.3)**
Income taxes reclassified into net income	**(0.4)**	**—**	**2.9**	**2.5**
Net change in accumulated other comprehensive income (loss)	**1.5**	**(34.4)**	**19.1**	**(13.8)**
Balance at September 30, 2022	**$ (237.8)**	**$ (182.0)**	**$ 21.5**	**$ (398.3)**

	Defined Benefit Plans	Foreign Currency Translation Adjustments	Unrecognized Gain (Loss) on Cash Flow Hedges	Total
Balance at June 30, 2021	$ (306.7)	$ (99.9)	$ (15.3)	$ (421.9)
Other comprehensive income (loss) before reclassifications	—	(9.6)	2.5	(7.1)
Income tax effect of other comprehensive income (loss) before reclassifications	—	—	(1.2)	(1.2)
Amounts reclassified from accumulated other comprehensive loss	2.8 (a)	—	(3.6) (b)	(0.8)
Income taxes reclassified into net income	(0.6)	—	0.5	(0.1)
Net change in accumulated other comprehensive loss	2.2	(9.6)	(1.8)	(9.2)
Balance at September 30, 2021	$ (304.5)	$ (109.5)	$ (17.1)	$ (431.1)

(a) These amounts were reclassified from AOCI to Other income (expense), net for the three months ended September 30, 2022 and September 30, 2021.

(b) The amounts reclassified from AOCI included $(1.5) million in cost of goods sold (COGS), $0.1 million in interest expense and $(13.8) million in Other income (expense), net for the three months ended September 30, 2022 and $(1.1) million in COGS, $3.5 million in interest expense and $(6.0) million in Other income (expense), net for the three months ended September 30, 2021.

	Defined Benefit Plans	Foreign Currency Translation Adjustments	Unrecognized Gain (Loss) on Cash Flow Hedges	Total
Balance at December 31, 2021	**$ (241.9)**	**$ (111.3)**	**$ (11.6)**	**$ (364.8)**
Other comprehensive income (loss) before reclassifications	**—**	**(70.7)**	**73.5**	**2.8**
Income tax effect of other comprehensive income (loss) before reclassifications	**—**	**—**	**(13.5)**	**(13.5)**
Amounts reclassified from accumulated other comprehensive loss	**5.5** (a)	**—**	**(32.8)** (b)	**(27.3)**
Income taxes reclassified into net income	**(1.4)**	**—**	**5.9**	**4.5**
Net change in accumulated other comprehensive income (loss)	**4.1**	**(70.7)**	**33.1**	**(33.5)**
Balance at September 30, 2022	**$ (237.8)**	**$ (182.0)**	**$ 21.5**	**$ (398.3)**

	Defined Benefit Plans	Foreign Currency Translation Adjustments	Unrecognized Gain (Loss) on Cash Flow Hedges	Total
Balance at December 31, 2020	$ (311.0)	$ (101.1)	$ (20.1)	$ (432.2)
Other comprehensive income (loss) before reclassifications	—	(8.9)	13.5	4.6
Income tax effect of other comprehensive income (loss) before reclassifications	—	—	(3.3)	(3.3)
Amounts reclassified from accumulated other comprehensive loss	8.2 (a)	0.5	(7.8) (b)	0.9
Income taxes reclassified into net income	(1.7)	—	0.6	(1.1)
Net change in accumulated other comprehensive loss	6.5	(8.4)	3.0	1.1
Balance at September 30, 2021	$ (304.5)	$ (109.5)	$ (17.1)	$ (431.1)

(a) These amounts were reclassified from AOCI to Other income (expense), net for the nine months ended September 30, 2022 and September 30, 2021.

(b) The amounts reclassified from AOCI included $(4.6) million in cost of goods sold (COGS), $3.5 million in interest expense and $(31.7) million in Other income (expense), net for the nine months ended September 30, 2022 and $(5.2) million in COGS, $11.4 million in interest expense and $(14.0) million in Other income (expense), net for the nine months ended September 30, 2021.

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 nine months ended September 30, 2022 and 2021. Net sales are attributed to regions based on the location of production. Intersegment sales have been excluded from the table.

	Three Months Ended September 30, 2022 (in millions)		
	Driveline	**Metal Forming**	**Total**
North America	**$ 817.5**	**$ 332.0**	**$ 1,149.5**
Asia	**124.4**	**13.0**	**137.4**
Europe	**92.2**	**106.6**	**198.8**
South America	**25.7**	**23.8**	**49.5**
Total	**$ 1,059.8**	**$ 475.4**	**$ 1,535.2**

	Three Months Ended September 30, 2021		
	Driveline	**Metal Forming**	**Total**
North America	$ 647.4	$ 279.9	$ 927.3
Asia	107.8	11.8	119.6
Europe	84.9	49.6	134.5
South America	29.5	2.2	31.7
Total	$ 869.6	$ 343.5	$ 1,213.1

	Nine Months Ended September 30, 2022		
	Driveline	**Metal Forming**	**Total**
North America	**$ 2,465.1**	**$ 939.6**	**$ 3,404.7**
Asia	**334.5**	**31.9**	**366.4**
Europe	**298.6**	**243.7**	**542.3**
South America	**61.8**	**34.5**	**96.3**
Total	**$ 3,160.0**	**$ 1,249.7**	**$ 4,409.7**

	Nine Months Ended September 30, 2021		
	Driveline	**Metal Forming**	**Total**
North America	$ 2,143.2	$ 876.6	$ 3,019.8
Asia	329.9	36.0	365.9
Europe	288.7	171.7	460.4
South America	67.7	7.7	75.4
Total	$ 2,829.5	$ 1,092.0	$ 3,921.5

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 *(in millions)*:

	Accounts Receivable, Net	Contract Liabilities (Current)	Contract Liabilities (Long-term)
December 31, 2021	$ 762.8	$ 28.1	$ 94.8
September 30, 2022	**974.6**	**29.2**	**70.1**
Increase/(decrease)	$ 211.8	$ 1.1	$ (24.7)

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. We amortized previously recorded contract liabilities into revenue as we satisfied performance obligations with our customers of approximately $23.3 million and $17.3 million for the nine months ended September 30, 2022 and 2021, respectively.

14. ACQUISITIONS AND DISPOSITIONS

Acquisition of Tekfor Group

On June 1, 2022, our acquisition of Tekfor Group became effective and we paid a total purchase price of $94.4 million, which was funded entirely with cash on hand. Tekfor Group manufactures high-performance components, modules and fasteners, including traditional powertrain and driveline components (for both internal combustion and hybrid applications), and e-mobility components. Our acquisition of Tekfor contributes to diversifying our geographic and customer sales mix, while also increasing our electrification product portfolio.

The acquisition of Tekfor Group was accounted for under the acquisition method under ASC 805 - *Business Combinations* with the purchase price allocated to the identifiable assets and liabilities of the acquired company based on the respective fair values of the assets and liabilities.

The following represents the preliminary fair values of the assets acquired and liabilities assumed resulting from the acquisition, including measurement period adjustments recorded in the third quarter of 2022 *(in millions)*:

	Initial Allocation	Adjustments	September 30, 2022
Total consideration transferred	$ 94.4	$ —	$ 94.4
Cash and cash equivalents	$ 14.3	$ —	$ 14.3
Accounts receivable	33.1	0.6	33.7
Inventories	44.9	1.4	46.3
Prepaid expenses and other long-term assets	30.8	(0.5)	30.3
Deferred income tax assets	3.5	—	3.5
Property, plant and equipment	105.7	(0.1)	105.6
Total assets acquired	$ 232.3	$ 1.4	$ 233.7
Accounts payable	33.3	0.2	33.5
Accrued expenses and other	26.3	0.6	26.9
Deferred income tax liabilities	1.0	—	1.0
Debt	23.4	—	23.4
Postretirement benefits and other long-term liabilities	42.3	(0.8)	41.5
Net assets acquired	$ 106.0	$ 1.4	$ 107.4
Gain on bargain purchase of business	$ 11.6	$ 1.4	$ 13.0

The gain on bargain purchase of business was primarily the result of current macroeconomic factors such as the supply chain disruptions impacting the automotive industry, including the conflict between Russia and Ukraine, the semiconductor supply shortage, and increasing input costs, including materials, freight and utilities. The preliminary allocation of the purchase price to the assets acquired and liabilities assumed is based upon estimated information and is subject to change within the measurement period. Under the guidance in ASC 805, the measurement period is a period not to exceed one year from the acquisition date during which we may adjust estimated or provisional amounts recorded during purchase accounting if new information is obtained about facts and circumstances that existed as of the acquisition date that, if known, would have resulted in revised estimated values of those assets or liabilities as of that date.

The primary areas of the preliminary purchase price allocation that are not yet finalized relate to property, plant and equipment, right-of-use assets and lease liabilities and deferred income tax assets and liabilities. The fair values of the assets acquired and liabilities assumed are based on our preliminary estimates and assumptions, as well as other information compiled by management, including valuations that utilize customary valuation procedures and techniques. While we believe that these preliminary estimates provide a reasonable basis for estimating the fair value of the assets acquired and liabilities assumed, we will continue to evaluate available information prior to finalization of the amounts.

Included in net sales and net income for the period from the acquisition effective date on June 1, 2022 through September 30, 2022 was approximately $121 million and $10 million, respectively, attributable to Tekfor Group. The net income amount includes the gain on bargain purchase of business of $13.0 million that was recognized as a result of the acquisition, as well as a one-time expense of $5.0 million for the step-up of inventory to fair value.

Unaudited Pro Forma Financial Information

Unaudited pro forma net sales for AAM, on a combined basis with Tekfor Group for the nine months ended September 30, 2022 and September 30, 2021, were $4.55 billion and $4.20 billion, respectively, excluding Tekfor Group sales to AAM during those periods. Unaudited pro forma net income amounts for the nine months ended September 30, 2022 and September 30, 2021 were approximately $40 million and $75 million, respectively. Unaudited pro forma earnings per share amounts for the nine months ended September 30, 2022 and September 30, 2021 were $0.33 per share and $0.63 per share, respectively. Unaudited pro forma net income for the nine months ended September 30, 2021 includes a one-time gain of approximately $15 million associated with a Tekfor Group entity as a result of a favorable tax ruling in a foreign jurisdiction.

The unaudited pro forma net income amounts for the nine months ended September 30, 2022 and September 30, 2021 have been adjusted for approximately $4 million, net of tax, related to the step-up of inventory to fair value as a result of the acquisition, approximately $5 million, net of tax, for acquisition-related costs, and approximately $13 million for the gain on bargain purchase of business recognized, which was not subject to tax. This resulted in a net reclassification of approximately $4 million from unaudited pro forma net income for the first nine months of 2022 into unaudited pro forma net income for the first nine months of 2021, as we are required to disclose the unaudited pro forma amounts as if the acquisition of Tekfor Group had been completed on January 1, 2021.

The disclosure of unaudited pro forma net sales and earnings is for informational purposes only and does not purport to indicate the results that would actually have been obtained had the merger been completed on the assumed date for the periods presented, or which may be realized in the future.

Acquisition of Manufacturing Facility in Emporium, Pennsylvania

In May 2021, AAM completed our acquisition of a manufacturing facility in Emporium, Pennsylvania, under which we acquired $14.9 million of net assets that consisted of $5.9 million of inventory and $9.0 million of property, plant and equipment. The purchase price was $14.9 million, which consisted of $4.9 million of cash and $10.0 million of a deferred consideration liability that will be paid to seller at $2.5 million annually over the period 2022 through 2025. As the value of the net assets acquired was equal to the purchase price, no goodwill or gain on bargain purchase was recognized for this acquisition for the period ended September 30, 2021.

The operating results of this manufacturing facility were insignificant to AAM's Condensed Consolidated Statements of Operations for the nine months ended September 30, 2022 and September 30, 2021. Further, we have not disclosed pro forma revenue and earnings for the nine months ended September 30, 2021 as the operating results of this manufacturing facility would be insignificant to AAM's consolidated results for the period.

Sale of Interest in Consolidated Joint Venture

In the nine months ended September 30, 2021, we completed the sale of our ownership interest in a consolidated joint venture and received cash proceeds of approximately $2.6 million. As a result of the sale and deconsolidation of this joint venture, we recognized a loss of $2.7 million in the first nine months of 2021. Subsequent to the sale of this joint venture, we no longer present noncontrolling interest in our condensed consolidated financial statements as all consolidated entities are wholly owned.

15. MANUFACTURING FACILITY FIRE AND INSURANCE RECOVERY

On September 22, 2020, a significant industrial fire occurred at our Malvern Manufacturing Facility in Ohio (Malvern Fire). All associates were evacuated safely and without injury and we were able to maintain continuity of supply to our customers without any significant disruptions.

Our insurance policies are expected to cover the repair, replacement or actual cash value of the assets that incurred loss or damage, less our applicable deductible of $1.0 million. In addition, our insurance policies are expected to provide coverage for interruption to our business, including lost or reduced profits and reimbursement for certain expenses and costs that are incurred relating to the fire. In the nine months ended September 30, 2022, we recorded $2.2 million of charges primarily related to transportation and freight and other costs incurred to resume or relocate operations and ensure continuity of supply to our customers. We also recorded an estimated insurance recovery of $8.6 million and received reimbursements and advances under our insurance policies of approximately $14.0 million, of which approximately $7.7 million is presented as an operating cash flow and $6.3 million is presented as an investing cash flow in our Condensed Consolidated Statement of Cash Flows. This resulted in net pre-tax income in our Condensed Consolidated Statement of Operations of approximately $6.4 million in Cost of goods sold for the nine months ended September 30, 2022. At September 30, 2022, $5.9 million of insurance recovery receivable is included in Prepaid expenses and other in our Condensed Consolidated Balance Sheet.

Since the date of the Malvern Fire and the establishment of the insurance claim, we have incurred $54.6 million of total charges primarily related to site services and clean-up, transportation and freight, asset repairs and other costs incurred to resume or relocate operations and ensure continuity of supply to our customers. In addition, we have recorded a total of $27.0 million of costs primarily associated with the write-down of property, plant and equipment as a result of damage from the fire. We have recorded total estimated insurance recoveries of $90.1 million and have received total reimbursements and advances under our insurance policies of $84.2 million, of which $11.1 million was received in 2020, $59.1 million was received in 2021 and $14.0 million was received in the first nine months of 2022.

In the fourth quarter of 2020, we determined that we will cease production at the Malvern Manufacturing Facility and relocate production capacity to other AAM manufacturing facilities. As such, we cannot estimate the total claim eligible costs that we will incur as a result of the Malvern Fire and the associated relocation of production capacity to other AAM manufacturing facilities. At September 30, 2022, we have estimated the amount of expected insurance proceeds recoverable in consideration of the policy provisions, estimated repair costs or actual cash value of damaged assets, and claim eligible expenses incurred from the date of the fire. We expect the claim settlement process to continue through 2022 based on the provisions of the policy. We will update our estimates as additional information becomes available, however, the actual impact on our results of operations, financial position or cash flows, or the timing of such impact, could differ from our estimates.

16. SEGMENT REPORTING

Our business is organized into Driveline and Metal Forming segments, with each representing a reportable segment under ASC 280 - *Segment Reporting*. 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 engine, transmission, driveline and safety-critical components for traditional internal combustion engine and electric vehicle architectures including light vehicles, commercial vehicles and off-highway vehicles, as well as products for industrial markets.

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, loss on the sale of a business, impairment charges, pension settlements, unrealized gains or losses on equity securities, and non-recurring items.

On June 1, 2022, our acquisition of Tekfor became effective and we began consolidating the results of Tekfor on that date, which are reported in our Metal Forming segment for the three and nine months ended September 30, 2022.

The following tables represent information by reportable segment for the three and nine months ended September 30, 2022 and 2021 *(in millions)*:

	Three Months Ended September 30, 2022		
	Driveline	**Metal Forming**	**Total**
Sales	**$ 1,061.1**	**$ 591.2**	**$ 1,652.3**
Less: Intersegment sales	**1.3**	**115.8**	**117.1**
Net external sales	**$ 1,059.8**	**$ 475.4**	**$ 1,535.2**
Segment Adjusted EBITDA	**$ 146.4**	**$ 52.0**	**$ 198.4**

	Three Months Ended September 30, 2021		
	Driveline	**Metal Forming**	**Total**
Sales	$ 870.4	$ 422.7	$ 1,293.1
Less: Intersegment sales	0.8	79.2	80.0
Net external sales	$ 869.6	$ 343.5	$ 1,213.1
Segment Adjusted EBITDA	$ 128.4	$ 54.8	$ 183.2

	Nine Months Ended September 30, 2022		
	Driveline	**Metal Forming**	**Total**
Sales	**$ 3,163.6**	**$ 1,585.9**	**$ 4,749.5**
Less: intersegment sales	**3.6**	**336.2**	**339.8**
Net external sales	**$ 3,160.0**	**$ 1,249.7**	**$ 4,409.7**
Segment Adjusted EBITDA	**$ 420.3**	**$ 169.3**	**$ 589.6**

	Nine Months Ended September 30, 2021		
	Driveline	**Metal Forming**	**Total**
Sales	$ 2,831.9	$ 1,352.1	$ 4,184.0
Less: intersegment sales	2.4	260.1	262.5
Net external sales	$ 2,829.5	$ 1,092.0	$ 3,921.5
Segment Adjusted EBITDA	$ 450.2	$ 218.5	$ 668.7

Total assets by reportable segment as of September 30, 2022 and December 31, 2021 were as follows *(in millions)*:

	September 30, 2022			
	Driveline	**Metal Forming**	**Other**	**Total**
Total Assets	**$ 2,898.8**	**$ 1,748.9**	**$ 1,031.9**	**$ 5,679.6**
	December 31, 2021			
	Driveline	**Metal Forming**	**Other**	**Total**
Total Assets	$ 2,925.6	$ 1,576.9	$ 1,133.2	$ 5,635.7

Assets included in the Other column in the table above represent AAM Corporate assets, as well as eliminations of intercompany assets.

The following table represents a reconciliation of Total Segment Adjusted EBITDA to consolidated income (loss) before income taxes for the three and nine months ended September 30, 2022 and 2021:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	**2021**	**2022**	**2021**
	(in millions)			
Total segment adjusted EBITDA	**$ 198.4**	$ 183.2	**$ 589.6**	$ 668.7
Interest expense	**(44.8)**	(49.7)	**(132.2)**	(150.7)
Depreciation and amortization	**(124.8)**	(135.6)	**(367.1)**	(421.2)
Restructuring and acquisition-related costs	**(7.9)**	(7.4)	**(26.4)**	(40.8)
Loss on sale of business	**—**	—	**—**	(2.7)
Unrealized gain (loss) on equity securities	**(2.3)**	19.4	**(24.0)**	19.4
Debt refinancing and redemption costs	**(0.2)**	(31.6)	**(6.0)**	(34.0)
Non-recurring items:				
Malvern Fire charges, net of recoveries	**1.0**	5.7	**6.4**	11.1
Acquisition-related fair value inventory adjustment	**—**	—	**(5.0)**	—
Gain on bargain purchase of business	**1.4**	—	**13.0**	—
Income (loss) before income taxes	**$ 20.8**	$ (16.0)	**$ 48.3**	$ 49.8

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, 2021.

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

As a leading global tier 1 automotive and mobility supplier, AAM designs, engineers and manufactures Driveline and Metal Forming technologies to support electric, hybrid, and internal combustion vehicles. Headquartered in Detroit, with nearly 85 facilities in 18 countries, AAM is bringing the future faster for a safer and more sustainable tomorrow.

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 nine months of 2022, and 37% for both the first nine months of 2021 and the full year 2021.

We also supply driveline system products to Stellantis N.V. (Stellantis) for programs including the heavy-duty Ram full-size pickup trucks and its derivatives, the AWD Chrysler Pacifica and the AWD Jeep Cherokee. In addition, we sell various products to Stellantis from our Metal Forming segment. Sales to Stellantis were approximately 18% of our consolidated net sales in the first nine months of 2022, and 19% for both the first nine months of 2021 and the full year 2021.

We are also a supplier to Ford Motor Company (Ford) for driveline system products on certain vehicle programs including the Ford Bronco Sport, Ford Edge, Ford Escape and Lincoln Nautilus, and we sell various products to Ford from our Metal Forming segment. Sales to Ford were approximately 11% of our consolidated net sales for the first nine months of 2022, and 12% for both the first nine months of 2021 and the full year 2021.

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

Supply Chain Constraints Impacting the Automotive Industry

During the first nine months of 2022, the automotive industry has continued to experience significant disruptions in the supply chain, including a shortage of semiconductor chips used by our customers, increased metal and commodity costs, higher utility costs, increased transportation costs, higher labor costs and labor shortages. As a result, we have experienced increased volatility in our production schedules, including manufacturing downtime, often with little notice from customers, higher inventory levels and increased labor costs, which have negatively impacted our results of operations and cash flows during this period. We continue to work with customers and suppliers in our effort to protect continuity of supply as we expect these challenges to continue throughout 2022. Due to the ongoing uncertainty associated with the impact of the COVID-19 pandemic, the conflict between Russia and Ukraine and other factors causing, or exacerbating, these supply chain constraints, the ultimate impact on our net sales, results of operations and cash flows is unknown.

RESULTS OF OPERATIONS — THREE MONTHS ENDED SEPTEMBER 30, 2022 AS COMPARED TO THREE MONTHS ENDED SEPTEMBER 30, 2021

Net Sales

	Three Months Ended September 30,			
(in millions)	**2022**	**2021**	**Change**	**Percent Change**
Net sales	**$ 1,535.2**	$ 1,213.1	$ 322.1	26.6 %

The increase in the third quarter of 2022, as compared to the third quarter of 2021, reflects approximately $92 million as a result of our acquisition of Tekfor in 2022. In addition, we estimate that net sales in the three months ended September 30, 2022 and September 30, 2021 were impacted by the semiconductor shortage and other supply chain constraints affecting the automotive industry by approximately $109 million and $245 million, respectively, resulting in an increase in sales of approximately $136 million for the three months ended September 30, 2022.

Cost of Goods Sold

	Three Months Ended September 30,			
(in millions)	**2022**	**2021**	**Change**	**Percent Change**
Cost of goods sold	**$ 1,357.8**	$ 1,047.5	$ 310.3	29.6 %

The change in cost of goods sold reflects an increase of approximately $92 million as the impact on production volumes of the semiconductor shortage and other supply chain constraints affecting the automotive industry lessened in the three months ended September 30, 2022, as compared to the three months ended September 30, 2021, and cost of goods sold increased by approximately $88 million as a result of our acquisition of Tekfor in 2022. Cost of goods sold was also impacted by increased net manufacturing costs, including metal and commodity costs, utility costs and transportation costs. For the three months ended September 30, 2022, material costs were approximately 60% of total cost of goods sold, as compared to approximately 59% for the three months ended September 30, 2021.

In the first quarter of 2021, one of our Major Customers announced its intention to cease production operations in Brazil in 2021 as part of their restructuring actions. This decision impacted certain of the programs that we supported and, as a result, we accelerated approximately $10 million of depreciation on certain property, plant and equipment in the third quarter of 2021.

Gross Profit

	Three Months Ended September 30,			
(in millions)	**2022**	**2021**	**Change**	**Percent Change**
Gross profit	**$ 177.4**	$ 165.6	$ 11.8	7.1 %

Gross margin was 11.6% in the third quarter of 2022, as compared to 13.7% in the third quarter of 2021. Gross profit and gross margin were impacted by the factors discussed in Net Sales and Cost of Goods Sold above.

Selling, General and Administrative Expenses (SG&A)

	Three Months Ended September 30,			
(in millions)	**2022**	**2021**	**Change**	**Percent Change**
Selling, general & administrative expenses	**$ 85.7**	$ 90.5	$ (4.8)	(5.3)%

SG&A as a percentage of net sales was 5.6% in the third quarter of 2022, as compared to 7.5% of net sales in the third quarter of 2021. Research and development (R&D) expense, net of customer engineering, design and development (ED&D) recoveries, was approximately $35.4 million in the third quarter of 2022, as compared to $34.7 million in the third quarter of 2021. The decrease in SG&A expense is primarily related to lower compensation-related expense, partially offset by the increase in R&D expense.

Amortization of Intangible Assets Amortization expense related to intangible assets was $21.5 million for the three months ended September 30, 2022 and $21.4 million for the three months ended September 30, 2021.

Restructuring and Acquisition-Related Costs Restructuring and acquisition-related costs were $7.9 million in the third quarter of 2022 and $7.4 million in the third quarter of 2021.

Operating Income Operating income was $62.3 million in the third quarter of 2022, as compared to $46.3 million in the third quarter of 2021. Operating margin was 4.1% in the third quarter of 2022, as compared to 3.8% in the third quarter of 2021. The changes in operating income and operating margin were primarily due to factors discussed in Net Sales and Cost of Goods Sold above.

Interest Expense and Interest Income Interest expense was $44.8 million in the third quarter of 2022, as compared to $49.7 million in the third quarter of 2021. The decrease in interest expense was primarily the result of our ongoing debt reduction initiatives and our previous refinancing actions. The weighted-average interest rate of our long-term debt outstanding was 5.7% in the third quarter of 2022 and 5.9% in the third quarter of 2021.

Interest income was $5.4 million in the third quarter of 2022, as compared to $2.7 million in the third quarter of 2021.

Debt Refinancing and Redemption Costs In the third quarter of 2022, we made voluntary prepayments totaling $50.0 million on our Term Loan B Facility. As a result, we expensed approximately $0.2 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of this borrowing.

In the third quarter of 2021, we made a voluntary prepayment of $12.7 million on our Term Loan A Facility. As a result, we expensed approximately $0.1 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of this borrowing.

In the third quarter of 2021, we voluntarily redeemed our 6.25% Notes due 2025. This resulted in principal payments totaling $700.0 million and $19.4 million in accrued interest. We also expensed approximately $9.6 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 $21.9 million for the payment of an early redemption premium.

Gain on Bargain Purchase of Business On June 1, 2022, our acquisition of Tekfor became effective, which resulted in a gain on bargain purchase. During the third quarter, the gain on bargain purchase was increased by approximately $1.4 million as a result of measurement period adjustments recorded during the period. See Note 14 - Acquisitions and Dispositions for additional detail on this acquisition.

Unrealized Loss on Equity Securities We have an investment in the equity securities of REE Automotive, an e-mobility company. These equity securities are measured at fair value each reporting period with changes in fair value reported through an unrealized gain or loss within Other income (expense), net in our Condensed Consolidated Statement of Operations. As of September 30, 2022, our investment in REE shares was valued at $3.4 million resulting in an unrealized loss of $2.3 million for the three months ended September 30, 2022.

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 $1.0 million in the third quarter of 2022, as compared to $3.1 million in the third quarter of 2021.

Income Tax Benefit Income tax benefit was $5.7 million for the three months ended September 30, 2022, as compared to $13.6 million for the three months ended September 30, 2021. Our effective income tax rate was (27.4)% in the third quarter of 2022, as compared to 85.0% in the third quarter of 2021. For the three months ended September 30, 2022, we recognized a net income tax benefit of $7.5 million related to the release of a valuation allowance in a foreign jurisdiction. During the three months ended September 30, 2021, we recognized a net income tax benefit of approximately $5.2 million related to our ability to carry back prior year losses to tax years with the higher 35% corporate income tax rate under provisions of the CARES Act.

Our effective income tax rate for the three months ended September 30, 2022 varies from our effective income tax rate for the three months ended September 30, 2021 primarily as a result of the release of the foreign valuation allowance during the three months ended September 30, 2022 as noted above, as well as the mix of earnings on a jurisdictional basis during these periods. For the three months ended September 30, 2022 and 2021, our effective income tax rates vary from the U.S. federal statutory rate primarily due to the discrete items noted above, the benefit from foreign derived intangible income deductions, the change in jurisdictional mix of earnings, and favorable foreign tax rates and the impact of tax credits.

Net Income (Loss) and Earnings (Loss) Per Share (EPS) Net income was $26.5 million in the third quarter of 2022, as compared to a loss of $2.4 million in the third quarter of 2021. Diluted earnings per share was $0.22 per share in the third quarter of 2022, as compared to diluted loss per share of $0.02 in the third quarter of 2021. Net income (loss) and EPS for the third quarters of 2022 and 2021 were primarily impacted by the factors discussed above.

RESULTS OF OPERATIONS — NINE MONTHS ENDED SEPTEMBER 30, 2022 AS COMPARED TO NINE MONTHS ENDED SEPTEMBER 30, 2021

Net Sales

	Nine Months Ended September 30,			
(in millions)	**2022**	**2021**	**Change**	**Percent Change**
Net sales	**$ 4,409.7**	$ 3,921.5	$ 488.2	12.4 %

The increase in the first nine months of 2022, as compared to the first nine months of 2021, primarily reflects approximately $55 million associated with the net effect of metal market pass-throughs to our customers and the impact of foreign exchange related to translation adjustments. Net sales also increased in the first nine months of 2022 by approximately $121 million as a result of our acquisition of Tekfor in the second quarter of 2022. In addition, we estimate that sales in the first nine months of 2022 and 2021 were impacted by the semiconductor shortage and other supply chain constraints affecting the automotive industry by approximately $303 million and $471 million, respectively, resulting in an increase in sales of approximately $168 million for the nine months ended September 30, 2022.

Cost of Goods Sold

	Nine Months Ended September 30,			
(in millions)	**2022**	**2021**	**Change**	**Percent Change**
Cost of goods sold	**$ 3,872.0**	$ 3,338.8	$ 533.2	16.0 %

The change in cost of goods sold in the first nine months of 2022, as compared to the first nine months of 2021, primarily reflects approximately $81 million related to metal market costs and the impact of foreign exchange. Cost of goods sold was also impacted by increased net manufacturing costs, including metal and commodity costs, utility costs and transportation costs. In addition, cost of goods sold increased by approximately $119 million as the impact on production volumes of the semiconductor shortage and other supply chain constraints affecting the automotive industry lessened in the nine months ended September 30, 2022, as compared to the nine months ended September 30, 2021, and increased by approximately $116 million as a result of our acquisition of Tekfor in the second quarter of 2022. For the nine months ended September 30, 2022, material costs were approximately 61% of total costs of goods sold as compared to approximately 60% for the nine months ended September 30, 2021.

In the first quarter of 2021, one of our Major Customers announced its intention to cease production operations in Brazil in 2021 as part of their restructuring actions. This decision impacted certain of the programs that we supported and, as a result, we accelerated depreciation on certain property, plant and equipment beginning in the first quarter of 2021. The impact on cost of goods sold of this acceleration was approximately $32 million in the first nine months of 2021.

Gross Profit

	Nine Months Ended September 30,			
(in millions)	**2022**	**2021**	**Change**	**Percent Change**
Gross profit	**$ 537.7**	$ 582.7	$ (45.0)	(7.7)%

Gross margin was 12.2% in the first nine months of 2022 as compared to 14.9% in the first nine months of 2021. Gross profit and gross margin were impacted by the factors discussed in Net Sales and Cost of Goods Sold above.

Selling, General and Administrative Expenses (SG&A)

	Nine Months Ended September 30,			
(in millions)	**2022**	**2021**	**Change**	**Percent Change**
Selling, general & administrative expenses	**$ 256.6**	$ 266.7	$ (10.1)	(3.8)%

SG&A as a percentage of net sales was 5.8% in the first nine months of 2022 as compared to 6.8% of net sales in the first nine months of 2021. R&D expense, net of ED&D recoveries, was approximately $105.3 million in the first nine months of 2022 as compared to $96.5 million in the first nine months of 2021. The decrease in SG&A expense is primarily related to lower compensation-related expense, partially offset by the increase in R&D expense.

Amortization of Intangible Assets Amortization expense related to intangible assets was $64.4 million for the nine months ended September 30, 2022 and $64.3 million for the nine months ended September 30, 2021.

Restructuring and Acquisition-Related Costs Restructuring and acquisition-related costs were $26.4 million for the nine months ended September 30, 2022, as compared to $40.8 million for the nine months ended September 30, 2021. We expect to incur approximately $20 million to $30 million of total restructuring charges in 2022.

On June 1, 2022, our acquisition of Tekfor became effective. During the nine months ended September 30, 2022, we incurred $5.8 million of acquisition-related costs associated with this acquisition. Acquisition-related costs primarily consist of advisory, legal, accounting, valuation and certain other professional or consulting fees incurred. We do not expect to incur significant additional acquisition-related costs in the fourth quarter of 2022.

We expect to incur approximately $5 million of total integration costs in 2022 associated with the acquisition of Tekfor and other past acquisitions completed. Integration expenses primarily reflect costs incurred for information technology infrastructure and enterprise resource planning systems, and consulting fees incurred in conjunction with integration activities. See Note 2 - Restructuring and Acquisition-Related Costs for additional detail regarding our restructuring, acquisition and integration activity.

Loss on Sale of Business In the first nine months of 2021, we completed the sale of our ownership interest in a consolidated joint venture. As a result of the sale and deconsolidation of this joint venture, we recognized a loss of $2.7 million.

Operating Income Operating income was $190.3 million in the first nine months of 2022 as compared to $208.2 million in the first nine months of 2021. Operating margin was 4.3% in the first nine months of 2022 as compared to 5.3% in the first nine months of 2021. The changes in operating income and operating margin were due primarily to the factors discussed in Net Sales, Cost of Goods Sold, SG&A and Restructuring and Acquisition-Related Costs above.

Interest Expense and Interest Income Interest expense was $132.2 million in the first nine months of 2022 as compared to $150.7 million in the first nine months of 2021. The decrease in interest expense was primarily the result of our ongoing debt reduction initiatives and our previous refinancing actions. The weighted-average interest rate of our long-term debt outstanding was 5.6% for the nine months ended September 30, 2022 and 5.9% for the nine months ended September 30, 2021. We expect our interest expense for the full year 2022 to be approximately $180 million.

Interest income was $11.6 million in the first nine months of 2022 as compared to $8.2 million in the first nine months of 2021.

Debt Refinancing and Redemption Costs In the first nine months of 2022, we amended and restated our existing Credit Agreement. See Note 5 - Long-Term Debt for further detail on the Amended & Restated Credit Agreement. As a result, we incurred $0.2 million of third-party debt refinancing costs during the nine months ended September 30, 2022.

In the first quarter of 2022, we used the proceeds from the upsized Term Loan A Facility to voluntarily redeem a portion of our 6.25% Notes due 2026. This resulted in a principal payment of $220 million and $0.2 million in accrued interest. We also expensed approximately $1.8 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of the borrowing, and approximately $3.4 million for the payment of an early redemption premium.

In the nine months ended September 30, 2022, we made voluntary prepayments totaling $100.0 million on our Term Loan B Facility. As a result, we expensed approximately $0.6 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of this borrowing.

In the nine months ended September 30, 2021, we made voluntary prepayments totaling $238.8 million on our Term Loan B Facility and $21.2 million on our Term Loan A Facility. As a result, we expensed approximately $2.5 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of these borrowings.

In the third quarter of 2021, we voluntarily redeemed our 6.25% Notes due 2025. This resulted in principal payments totaling $700.0 million and $19.4 million in accrued interest. We also expensed approximately $9.6 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 $21.9 million for the payment of an early redemption premium.

Gain on Bargain Purchase of Business On June 1 2022, our acquisition of Tekfor became effective, which resulted in a gain on bargain purchase of $13.0 million. See Note 14 - Acquisitions and Dispositions for additional detail on this acquisition.

Unrealized Loss on Equity Securities We have an investment in the equity securities of REE Automotive, an e-mobility company. These equity securities are measured at fair value each reporting period with changes in fair value reported through an unrealized holding gain or loss within Other income (expense), net in our Condensed Consolidated Statement of Operations. As of September 30, 2022, our investment in REE shares was valued at $3.4 million resulting in an unrealized loss of $24.0 million for the nine months ended September 30, 2022.

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 $4.4 million in the first nine months of 2022 as compared to $1.3 million in the first nine months of 2021.

Income Tax Benefit Income tax benefit was $2.1 million for the nine months ended September 30, 2022 as compared to $2.4 million for the nine months ended September 30, 2021. Our effective income tax rate was (4.3)% in the first nine months of 2022 as compared to (4.8)% in the first nine months of 2021. For the nine months ended September 30, 2022, we recognized a net income tax benefit of $7.5 million related to the release of a valuation allowance in a foreign jurisdiction. During the nine months ended September 30, 2021, we recognized a net income tax benefit of approximately $5.2 million related to our ability to carry back prior year losses to tax years with the higher 35% corporate income tax rate under provisions of the CARES Act.

Our effective income tax rate for the nine months ended September 30, 2022 varies from our effective income tax rate for the nine months ended September 30, 2021 primarily as a result of the $13.0 million gain on bargain purchase of business recognized in the nine months ended September 30, 2022, which was not subject to income tax, as well as the release of the foreign valuation allowance during the nine months ended September 30, 2022 noted above and the mix of earnings on a jurisdictional basis during these periods. For the nine months ended September 30, 2022 and 2021, our effective income tax rates vary from the U.S. federal statutory rate primarily due to the gain on bargain purchase of business, the discrete items noted above, the benefit from foreign derived intangible income deductions, the change in jurisdictional mix of earnings, and favorable foreign tax rates and the impact of tax credits.

Due to the uncertainty associated with the extent and ultimate impact of the significant supply chain constraints affecting the automotive industry, including COVID-19, the semiconductor shortage and resulting impact on global automotive production volumes, and the conflict between Russia and Ukraine, we may experience lower than projected earnings in certain jurisdictions in future periods, and as a result, it is reasonably possible that changes in valuation allowances could be recognized in future periods and such changes could be material to our financial statements.

Net Income and Earnings Per Share (EPS) Net income was $50.4 million in the first nine months of 2022 as compared to $52.2 million in the first nine months of 2021. Diluted EPS was $0.42 per share in the first nine months of 2022 as compared to $0.44 per share in the first nine months of 2021. Net income and EPS for the first nine months of 2022 and 2021 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*. 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 engine, transmission, driveline and safety-critical components for traditional internal combustion engine and electric vehicle architectures including light vehicles, commercial vehicles and off-highway vehicles, as well as products for industrial markets.

On June 1, 2022, our acquisition of Tekfor became effective and we began consolidating the results of Tekfor on that date, which are reported in our Metal Forming segment for the three and nine months ended September 30, 2022.

The following table represents sales by reportable segment for the three and nine months ended September 30, 2022 and 2021 *(in millions)*:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	**2021**	**2022**	**2021**
Driveline	**$ 1,061.1**	$ 870.4	**$ 3,163.6**	$ 2,831.9
Metal Forming	**591.2**	422.7	**1,585.9**	1,352.1
Eliminations	**(117.1)**	(80.0)	**(339.8)**	(262.5)
Net Sales	**$ 1,535.2**	$ 1,213.1	**$ 4,409.7**	$ 3,921.5

The Driveline segment experienced increased production volumes on certain vehicle programs that we support as the impact of the semiconductor shortage and other supply chain constraints affecting the automotive industry lessened in the three and nine months ended September 30, 2022, as compared to the three and nine months ended September 30, 2021. We estimate that Driveline sales increased by $118 million and $199 million for the three and nine months ended September 30, 2022, respectively, as a result of this increase in production volumes. The increase in Driveline sales for the nine months ended September 30, 2022, as compared to the nine months ended September 30, 2021, also reflects approximately $37 million associated with the effect of metal market pass-throughs to our customers and the impact of foreign exchange related to translation adjustments.

The increase in Metal Forming sales for the three and nine months ended September 30, 2022, as compared to the three and nine months ended September 30, 2021, primarily reflects approximately $92 million and $121 million, respectively, associated with the acquisition of Tekfor that became effective on June 1, 2022. The increase in Metal Forming sales for the nine months ended September 30, 2022, as compared to the nine months ended September 30, 2021, also reflects approximately $18 million associated with the effect of metal market pass-throughs to our customers and the impact of foreign exchange related to translation adjustments.

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, loss on the sale of a business, impairment charges, pension settlements, unrealized gains or losses on equity securities, and non-recurring items.

The amounts for Segment Adjusted EBITDA for the three and nine months ended September 30, 2022 and 2021 are as follows *(in millions)*:

	Three Months Ended September 30,		Nine Months Ended September 30,	
	2022	**2021**	**2022**	**2021**
Driveline	**$ 146.4**	$ 128.4	**$ 420.3**	$ 450.2
Metal Forming	**52.0**	54.8	**169.3**	218.5
Total segment adjusted EBITDA	**$ 198.4**	$ 183.2	**$ 589.6**	$ 668.7

For the three months ended September 30, 2022, as compared to the three months ended September 30, 2021, the increase in Segment Adjusted EBITDA for the Driveline segment was primarily attributable to a net increase in production volumes on vehicle programs we support, partially offset by increased manufacturing costs, including higher metal and commodity costs, increased labor costs and increased transportation costs.

For the nine months ended September 30, 2022, as compared to the nine months ended September 30, 2021, the change in Segment Adjusted EBITDA for the Driveline segment was primarily attributable to the impact of increased manufacturing costs, including higher metal and commodity costs, higher utility costs and increased transportation costs, partially offset by a net increase in production volumes on vehicle programs we support.

For the three and nine months ended September 30, 2022, as compared to the three and nine months ended September 30, 2021, the change in Segment Adjusted EBITDA for the Metal Forming segment was primarily attributable to the impact of increased net manufacturing costs, including higher metal and commodity costs, increased labor costs, higher utility costs and increased transportation costs, offset by a net increase in production volumes on the vehicle programs we support.

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, loss on the sale of a business, impairment charges, pension settlements, unrealized gains or losses on equity securities, 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. EBITDA and Total Segment Adjusted EBITDA are also key metrics used in our calculation of incentive compensation. 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 September 30,		Nine Months Ended September 30,	
	2022	**2021**	**2022**	**2021**
	(in millions)			
Net income (loss)	**$ 26.5**	$ (2.4)	**$ 50.4**	$ 52.2
Interest expense	**44.8**	49.7	**132.2**	150.7
Income tax benefit	**(5.7)**	(13.6)	**(2.1)**	(2.4)
Depreciation and amortization	**124.8**	135.6	**367.1**	421.2
EBITDA	**$ 190.4**	$ 169.3	**$ 547.6**	$ 621.7
Restructuring and acquisition-related costs	**7.9**	7.4	**26.4**	40.8
Debt refinancing and redemption costs	**0.2**	31.6	**6.0**	34.0
Loss on sale of business	**—**	—	**—**	2.7
Unrealized loss (gain) on equity securities	**2.3**	(19.4)	**24.0**	(19.4)
Non-recurring items:				
Malvern Fire charges, net of recoveries	**(1.0)**	(5.7)	**(6.4)**	(11.1)
Gain on bargain purchase of business	**(1.4)**	—	**(13.0)**	—
Acquisition-related fair value inventory adjustment	**—**	—	**5.0**	—
Total segment adjusted EBITDA	**$ 198.4**	$ 183.2	**$ 589.6**	$ 668.7

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.

At September 30, 2022, we had over $1.4 billion of liquidity consisting of approximately $472 million of cash and cash equivalents, approximately $894 million of available borrowings under our Revolving Credit Facility and approximately $65 million of available borrowings under foreign credit facilities. We have no significant debt maturities before 2024.

Operating Activities In the first nine months of 2022, net cash provided by operating activities was $300.4 million as compared to $436.0 million in the first nine months of 2021. The following factors impacted cash from operating activities in the first nine months of 2022, as compared to the first nine months of 2021:

Impact of Supply Chain Constraints We experienced lower earnings and cash flows from operating activities as a result of the significant supply chain constraints that continued to impact the automotive industry during the nine months ended September 30, 2022, including increased metal and commodity costs, higher utility costs, increased transportation costs, higher labor costs and labor shortages. We expect these supply chain constraints to continue through 2022.

Accounts receivable For the nine months ended September 30, 2022, we experienced a decrease in cash flow from operating activities of approximately $252 million related to the change in our accounts receivable balance from December 31, 2021 to September 30, 2022, as compared to the change in our accounts receivable balance from December 31, 2020 to September 30, 2021. This change was primarily attributable to the timing of sales to customers in the applicable periods.

Inventories For the nine months ended September 30, 2022, we experienced an increase in cash flow from operating activities of approximately $82 million related to the change in our inventories balance from December 31, 2021 to September 30, 2022, as compared to the change in our inventories balance from December 31, 2020 to September 30, 2021. In the nine months ended September 30, 2021, we began to increase inventory levels as a result of volatility in production schedules and unexpected downtime at certain of our manufacturing facilities as a result of the semiconductor chip shortage that has impacted the automotive industry. This increase in inventory levels in the first nine months of 2021 was more significant than the increase in the first nine months of 2022.

Accounts payable and accrued expenses For the nine months ended September 30, 2022, we experienced an increase in cash flow from operating activities of approximately $130 million related to the change in our accounts payable and accrued expenses balance from December 31, 2021 to September 30, 2022, as compared to the change in our accounts payable and accrued expenses balance from December 31, 2020 to September 30, 2021. This change was primarily attributable to the timing of production and the associated purchases from suppliers within the applicable periods, as well as the timing of payments to suppliers.

Income taxes Income taxes paid, net was $28.5 million in the first nine months of 2022, as compared to $17.8 million in the first nine months of 2021. During the first nine months of 2022 and 2021, we received income tax refunds of approximately $5.4 million and $6.0 million, respectively, related to the utilization of net operating losses under the provisions of the CARES Act.

Interest paid Interest paid was $117.4 million for the nine months ended September 30, 2022, as compared to $153.5 million for the nine months ended September 30, 2021. The decrease in interest paid was primarily the result of our ongoing debt reduction initiatives and our previous refinancing actions.

Malvern Fire In the first nine months of 2022 and 2021, we received $14.0 million and $51.1 million of cash, respectively, as reimbursements and advances under our insurance policies, of which $7.7 million and $28.0 million, respectively, were associated with operating expenses incurred as a result of the Malvern Fire and have been presented as operating cash inflows in our Condensed Consolidated Statement of Cash Flows for these periods. At September 30, 2022, we have an insurance recovery receivable of $5.9 million, which is included in Prepaid expenses and other in our Condensed Consolidated Balance Sheet. See Note 15 - Manufacturing Facility Fire and Insurance Recovery for additional detail.

Restructuring and acquisition-related costs For the full year 2022, we expect restructuring and acquisition-related payments in cash flows from operating activities to be between $30 million and $40 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), we expect our regulatory pension funding requirements in 2022 to be less than $1 million. We expect our cash payments for other postretirement benefit obligations in 2022, net of GM cost sharing, to be approximately $16.5 million.

Investing Activities In the first nine months of 2022, net cash used in investing activities was $197.4 million as compared to $94.9 million for the nine months ended September 30, 2021. Capital expenditures were $117.9 million in the first nine months of 2022 as compared to $115.8 million in the first nine months of 2021. We expect our capital spending in 2022 to be 3% to 3.5% of sales.

On June 1, 2022, our acquisition of Tekfor became effective and we paid approximately $80 million, net of cash acquired, which was funded entirely with cash on hand. Also in the first nine months of 2022, we made payments for the acquisition of a supplier in Mexico and began to pay the deferred consideration associated with our acquisition of Emporium that was completed in 2021. These payments totaled approximately $8 million in the nine months ended September 30, 2022. We paid cash of $4.9 million in the first nine months of 2021 for the acquisition of Emporium. See Note 14 - Acquisitions and Dispositions for further detail.

In the first nine months of 2022 and 2021, in addition to the $7.7 million and $28.0 million, respectively, of cash reimbursements and advances received under our insurance policies associated with operating expenses incurred as a result of the Malvern Fire, we received $6.3 million and $23.1 million, respectively, of cash associated with machinery and equipment that was damaged or destroyed as a result of the Malvern Fire. This cash received has been classified as an investing cash flow based on the nature of the associated loss incurred.

Financing Activities In the first nine months of 2022, net cash used in financing activities was $147.8 million, as compared to $394.2 million in the first nine months of 2021. The following factors impacted cash from financing activities in the first nine months of 2022, as compared to the first nine months of 2021:

Senior Secured Credit Facilities Our Senior Secured Credit Facilities, which are comprised of our Revolving Credit Facility, our Term Loan A Facility, and our Term Loan B Facility, 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.

In March 2022, Holdings, and AAM, Inc. entered into the Amended & Restated Credit Agreement. The Amended & Restated Credit Agreement, among other things, increased the principal amount of the Term Loan A Facility to $520 million, extended the maturity date of the Term Loan A Facility and the Revolving Credit Facility, and established the use under the Term Loan A Facility and Revolving Credit Facility of updated reference rates. See Note 5 - Long-Term Debt for further detail on the Amended & Restated Credit Agreement. As a result, we expensed $0.2 million of debt refinancing costs, paid accrued interest of $1.0 million, and paid debt issuance costs of $4.4 million in the nine months ended September 30, 2022 related to the Amended & Restated Credit Agreement.

In the first nine months of 2022, we made voluntary prepayments totaling $100.0 million on our Term Loan B Facility. As a result, we expensed approximately $0.6 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of this borrowing.

In the first nine months of 2021, we made voluntary prepayments of $238.8 million on our Term Loan B Facility and $21.2 million on our Term Loan A Facility. As a result, we expensed approximately $2.5 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the life of these borrowings.

At September 30, 2022, we had $893.5 million available under the Revolving Credit Facility. This availability reflects a reduction of $31.5 million for standby letters of credit issued against the facility. The proceeds of the Revolving Credit Facility are used for general corporate purposes. See Note 5 - Long-Term Debt for additional information regarding our Senior Secured Credit Facilities.

Redemption of 6.25% Notes due 2026 In the first quarter of 2022, we used the proceeds from the upsized Term Loan A Facility to voluntarily redeem a portion of our 6.25% Notes due 2026. This resulted in a principal payment of $220.0 million and $0.2 million in accrued interest. We also expensed approximately $1.8 million for the write-off of a portion of the unamortized debt issuance costs that we had been amortizing over the expected life of the borrowing, and approximately $3.4 million for the payment of an early redemption premium.

5.00% Notes due 2029 In the third quarter of 2021, we issued $600.0 million in aggregate principal amount of 5.00% senior notes due 2029 (the 5.00% Notes). Proceeds from the 5.00% Notes were used to fund the redemption of the remaining $600.0 million of our former 6.25% senior notes due 2025. We paid debt issuance costs of $9.2 million in the nine months ended September 30, 2021 related to the 5.00% Notes.

Redemption of 6.25% Notes due 2025 In the third quarter of 2021, we voluntarily redeemed our 6.25% Notes due 2025. This resulted in principal payments totaling $700 million and $19.4 million in accrued interest. We also expensed approximately $9.6 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 $21.9 million for the payment of an early redemption premium.

Repayment of Tekfor Group Indebtedness Upon the acquisition of Tekfor, we assumed $23.4 million of existing Tekfor indebtedness, of which we repaid $10.7 million in the first nine months of 2022.

Foreign credit facilities We utilize local currency credit facilities to finance the operations of certain foreign subsidiaries. At September 30, 2022, $70.2 million was outstanding under our foreign credit facilities, as compared to $86.1 million at December 31, 2021. At September 30, 2022, an additional $64.7 million was available under our foreign credit facilities.

Treasury stock Treasury stock increased by $1.9 million in the first nine months of 2022 to $218.2 million as compared to $216.3 million at year-end 2021, due to the withholding and repurchase of shares of AAM stock to satisfy employee tax withholding obligations due upon the vesting of stock-based compensation.

Subsidiary Guarantees of Registered Debt Securities Our 6.875% Notes, 6.50% Notes, 6.25% Notes, and 5.00% Notes (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; or
- 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)*	
	Nine Months Ended September 30, 2022	**Year Ended December 31, 2021**
Net sales	**$ 3,392.4**	$ 3,983.0
Gross profit	**330.4**	410.8
Income (loss) from operations	**15.6**	(27.4)
Net loss	**(67.4)**	(158.6)

Balance Sheet Information	*(in millions)*	
	September 30, 2022	**December 31, 2021**
Current assets	**$ 1,062.9**	$ 1,034.6
Noncurrent assets	**2,436.7**	2,524.2
Current liabilities	**1,352.1**	1,183.7
Noncurrent liabilities	**3,658.0**	3,791.1
Redeemable preferred stock	**—**	—
Noncontrolling interest	**—**	—

At September 30, 2022 and December 31, 2021, amounts owed by the Combined Entities to non-guarantor entities totaled approximately $925 million and $800 million, respectively, and amounts owed to the Combined Entities from non-guarantor entities totaled approximately $610 million and $655 million, respectively.

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, 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 file U.S. federal, state and local income tax returns, as well as foreign income tax returns in jurisdictions throughout the world. We are also subject to examinations of these tax returns by the relevant tax authorities. Negative or unexpected outcomes of these examinations and audits, and any related litigation, could have a material adverse impact on our results of operations, financial condition and 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 third quarter of 2022.

We are subject to risks of environmental issues, including impacts of climate-related events, that could result in unforeseen disruptions or costs at our facilities. We did not experience any climate-related events in the third quarter of 2022 that we believe could have a material adverse impact on our results of operations, financial condition and cash flows.

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. As of September 30, 2022 and December 31, 2021, we had currency forward contracts with a notional amount of $172.8 million and $164.7 million outstanding respectively. The potential decrease in fair value of foreign exchange contracts, assuming a 10% adverse change in the foreign currency exchange rates, would be approximately $15.7 million at September 30, 2022 and was $15.0 million at December 31, 2021.

In 2020, 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 second quarter of 2022, we discontinued this fixed-to-fixed cross-currency swap, which was in an asset position of $9.7 million on the date that it was discontinued.

Also in the second quarter of 2022, 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. We had notional amounts outstanding under fixed-to-fixed cross-currency swaps of €200.0 million at both September 30, 2022 and December 31, 2021, which was equivalent to $195.9 million and $226.9 million, respectively. The fixed-to-fixed cross-currency swap hedges our exposure to changes in exchange rates on the intercompany loans into the second quarter of 2024. 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 $19.6 million at September 30, 2022 and was approximately $22.7 million at December 31, 2021.

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. In the second quarter of 2022, we discontinued this variable-to-fixed interest rate swap, which was in an asset position of $6.1 million on the date that it was discontinued.

Also in the second quarter of 2022, we entered into a new variable-to-fixed interest rate swap to reduce the variability of cash flows associated with interest payments on our variable rate debt. As of September 30, 2022, we have $500.0 million notional amount hedged in relation to our variable-to-fixed interest rate swap into the third quarter of 2027.

The pre-tax earnings and cash flow impact of a one-percentage-point increase in interest rates (approximately 17% of our weighted-average interest rate at September 30, 2022) on our long-term debt outstanding, would be approximately $7.9 million at September 30, 2022 and was approximately $4.2 million at December 31, 2021, 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 September 30, 2022.

Changes in Internal Control over Financial Reporting

In conjunction with our recent acquisition activity, we utilized our framework of internal controls over financial reporting specific to business combinations. The applicable controls address the various elements of a business combination, including but not limited to: 1) calculation of the consideration transferred; 2) identifying and properly accounting for transactions that are separate from the business combination; 3) use and oversight of competent and qualified personnel in performing the valuation of assets acquired and liabilities assumed; 4) review of inputs and outputs to the valuation models; 5) identifying and disclosing provisional amounts; and 6) tracking measurement period adjustments.

Our acquisition of Tekfor Group became effective on June 1, 2022. We are currently integrating policies, processes and operations for the combined company and will continue to evaluate our internal control over financial reporting as we develop and execute our integration plans. We will exclude the acquired operations of Tekfor Group from our assessment of AAM's internal control over financial reporting for the year ended December 31, 2022 as permissible under rules and regulations of the Securities and Exchange Commission.

Except as described above with regard to the acquisition and integration of Tekfor Group, there were no changes in our internal control over financial reporting during the quarter ended September 30, 2022 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

There were no material changes from the risk factors previously disclosed in our December 31, 2021 Form 10-K.

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 September 30, 2022:

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)
July 1 - July 31, 2022	3,625	$ 8.57	—	$ —
August 1 - August 31, 2022	1,392	9.23	—	—
September 1 - September 30, 2022	—	—	—	—
Total	5,017	$ 8.75	—	$ —

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
** 104	Cover Page Interactive Data File (formatted in Inline XBRL contained in Exhibit 101)

* 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
November 4, 2022

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

Our 6.875% Notes, 6.50% Notes, 6.25% Notes and 5.00% Notes 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
Metaldyne Performance Group, Inc.	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
MD Investors Corporation	Delaware
AAM Powder Metal Components, Inc.	Ohio
ASP Grede Intermediate Holdings LLC	Delaware
AAM Casting Corp.	Delaware
Tekfor, Inc.	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: November 4, 2022

/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: November 4, 2022

/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 September 30, 2022 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
David C. Dauch
Chairman of the Board &
Chief Executive Officer
November 4, 2022

/s/ Christopher J. May
Christopher J. May
Vice President &
Chief Financial Officer
November 4, 2022