

**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 quarter ended June 30, 2020
or

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

Commission File No. 1-15579



MSA SAFETY INCORPORATED

(Exact name of registrant as specified in its charter)

Pennsylvania

(State or other jurisdiction of
incorporation or organization)

46-4914539

(IRS Employer
Identification No.)

1000 Cranberry Woods Drive

Cranberry Township, Pennsylvania

(Address of principal executive offices)

16066-5207

(Zip Code)

Registrant's telephone number, including area code: (724) 776-8600

Former name or former address, if changed since last report: N/A

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 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 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, smaller reporting company, or an emerging growth company. See the 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(s)	Name of each exchange on which is registered
Common Stock, no par value	MSA	New York Stock Exchange

As of July 24, 2020, 38,883,634 shares of common stock, of the registrant were outstanding.

PART I. FINANCIAL INFORMATION

Item 1. Financial Statements

MSA SAFETY INCORPORATED
CONDENSED CONSOLIDATED STATEMENTS OF INCOME

Unaudited

(In thousands, except per share amounts)	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Net sales	\$ 314,438	\$ 349,675	\$ 655,583	\$ 675,713
Cost of products sold	172,841	188,591	356,627	364,647
Gross profit	141,597	161,084	298,956	311,066
Selling, general and administrative	69,034	84,009	149,271	162,437
Research and development	13,760	14,256	27,872	27,962
Restructuring charges (Note 4)	8,865	3,522	10,872	9,353
Currency exchange losses, net (Note 6)	793	1,290	1,063	18,251
Product liability expense (Note 17)	851	3,529	2,802	6,425
Operating income	48,294	54,478	107,076	86,638
Interest expense	2,459	4,470	5,602	6,830
Other income, net	(2,000)	(3,342)	(3,258)	(5,921)
Total other expense, net	459	1,128	2,344	909
Income before income taxes	47,835	53,350	104,732	85,729
Provision for income taxes (Note 10)	11,429	13,238	24,523	22,241
Net income	36,406	40,112	80,209	63,488
Net income attributable to noncontrolling interests	(340)	(306)	(468)	(450)
Net income attributable to MSA Safety Incorporated	\$ 36,066	\$ 39,806	\$ 79,741	\$ 63,038
Earnings per share attributable to MSA Safety Incorporated common shareholders (Note 9):				
Basic	\$ 0.93	\$ 1.03	\$ 2.05	\$ 1.63
Diluted	\$ 0.92	\$ 1.01	\$ 2.03	\$ 1.61
Dividends per common share	\$ 0.43	\$ 0.42	\$ 0.85	\$ 0.80

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

MSA SAFETY INCORPORATED
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME

Unaudited

(In thousands)	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Net income	\$ 36,406	\$ 40,112	\$ 80,209	\$ 63,488
Other comprehensive income (loss), net of tax:				
Foreign currency translation adjustments (Note 6)	4,669	(385)	(18,278)	(24)
Pension and post-retirement plan actuarial gains, net of tax (Note 6)	3,090	1,378	6,192	3,401
Unrealized gain on available-for-sale securities (Note 6)	124	27	62	563
Reclassification of currency translation from accumulated other comprehensive (loss) into net income (Note 6)	—	—	720	15,359
Total other comprehensive income (loss), net of tax	7,883	1,020	(11,304)	19,299
Comprehensive income	44,289	41,132	68,905	82,787
Comprehensive income attributable to noncontrolling interests	(358)	(169)	(371)	(456)
Comprehensive income attributable to MSA Safety Incorporated	\$ 43,931	\$ 40,963	\$ 68,534	\$ 82,331

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

MSA SAFETY INCORPORATED
CONDENSED CONSOLIDATED BALANCE SHEETS

Unaudited

(In thousands)	June 30, 2020	December 31, 2019
Assets		
Cash and cash equivalents	\$ 136,238	\$ 152,195
Trade receivables, less allowance for credit loss of \$5,044 and \$4,860	240,137	255,082
Inventories (Note 3)	225,410	185,027
Investments, short-term (Note 16)	59,945	49,892
Prepaid income taxes	16,418	13,072
Notes receivable, insurance companies (Note 17)	3,736	3,676
Prepaid expenses and other current assets	39,666	34,419
Total current assets	<u>721,550</u>	<u>693,363</u>
Property, plant and equipment, net (Note 5)	170,184	167,038
Operating lease assets, net	47,106	51,675
Prepaid pension cost (Note 14)	80,775	75,066
Deferred tax assets (Note 10)	32,030	32,596
Goodwill (Note 13)	430,671	436,679
Intangible assets, net (Note 13)	162,907	171,326
Notes receivable, insurance companies, noncurrent (Note 17)	52,988	52,336
Insurance receivable (Note 17) and other noncurrent assets	54,724	59,614
Total assets	<u>\$ 1,752,935</u>	<u>\$ 1,739,693</u>
Liabilities		
Notes payable and current portion of long-term debt (Note 12)	\$ 20,000	\$ 20,000
Accounts payable	96,513	89,120
Employees' compensation	34,783	41,882
Insurance and product liability (Note 17)	27,876	25,870
Income taxes payable (Note 10)	22,415	6,739
Warranty reserve (Note 17) and other current liabilities	91,771	93,898
Total current liabilities	<u>293,358</u>	<u>277,509</u>
Long-term debt, net (Note 12)	314,500	328,394
Pensions and other employee benefits	185,464	186,697
Noncurrent operating lease liabilities	38,826	42,632
Deferred tax liabilities (Note 10)	10,533	9,787
Product liability (Note 17) and other noncurrent liabilities	161,600	162,101
Total liabilities	<u>\$ 1,004,281</u>	<u>\$ 1,007,120</u>
Equity		
Preferred stock, 4.5% cumulative, \$50 par value (Note 7)	\$ 3,569	\$ 3,569
Common stock, no par value (Note 7)	233,786	229,127
Treasury shares, at cost (Note 7)	(329,590)	(305,159)
Accumulated other comprehensive loss (Note 6)	(225,210)	(214,003)
Retained earnings	1,058,955	1,012,266
Total MSA Safety Incorporated shareholders' equity	<u>741,510</u>	<u>725,800</u>
Noncontrolling interests	7,144	6,773
Total shareholders' equity	<u>748,654</u>	<u>732,573</u>
Total liabilities and shareholders' equity	<u>\$ 1,752,935</u>	<u>\$ 1,739,693</u>

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

MSA SAFETY INCORPORATED
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS

Unaudited

(In thousands)	Six Months Ended June 30,	
	2020	2019
Operating Activities		
Net income	\$ 80,209	\$ 63,488
Depreciation and amortization	19,428	18,792
Stock-based compensation (Note 11)	4,352	6,086
Pension expense (Note 14)	4,430	2,856
Deferred income (benefit) tax provision (Note 10)	(711)	849
Loss on asset dispositions, net	127	233
Pension contributions (Note 14)	(3,781)	(3,534)
Currency exchange losses, net	1,063	18,251
Product liability expense (Note 17)	2,802	6,425
Collections on insurance receivables and notes receivable, insurance companies (Note 17)	5,736	11,289
Product liability payments (Note 17)	(4,672)	(34,170)
Changes in:		
Trade receivables	9,286	(9,189)
Inventories (Note 3)	(46,886)	(25,421)
Prepaid expenses and other current assets	(10,424)	(3,489)
Accounts payable and accrued liabilities	22,653	(13,401)
Other noncurrent assets and liabilities	(581)	(1,520)
Cash Flow From Operating Activities	83,031	37,545
Investing Activities		
Capital expenditures	(19,834)	(13,525)
Acquisition, net of cash acquired (Note 19)	—	(33,196)
Purchase of short-term investments (Note 16)	(119,402)	(87,260)
Proceeds from maturities of short-term investments (Note 16)	110,000	69,958
Property disposals	83	81
Cash Flow Used in Investing Activities	(29,153)	(63,942)
Financing Activities		
Payments on short-term debt, net	—	64
Proceeds from long-term debt (Note 12)	581,000	375,000
Payments on long-term debt (Note 12)	(590,000)	(338,000)
Cash dividends paid	(33,052)	(30,934)
Company stock purchases (Note 7)	(28,254)	(10,967)
Exercise of stock options (Note 7)	3,740	3,232
Employee stock purchase plan (Note 7)	390	344
Cash Flow Used in Financing Activities	(66,176)	(1,261)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	(3,654)	(985)
Decrease in cash, cash equivalents and restricted cash	(15,952)	(28,643)
Beginning cash, cash equivalents and restricted cash	152,543	140,604
Ending cash, cash equivalents and restricted cash	\$ 136,591	\$ 111,961
Supplemental cash flow information:		
Cash and cash equivalents	\$ 136,238	\$ 111,511
Restricted cash included in prepaid expenses and other current assets	353	450
Total cash, cash equivalents and restricted cash	\$ 136,591	\$ 111,961

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

MSA SAFETY INCORPORATED

**CONDENSED CONSOLIDATED STATEMENTS OF CHANGES IN RETAINED EARNINGS,
ACCUMULATED OTHER COMPREHENSIVE LOSS AND NONCONTROLLING INTERESTS**

Unaudited

(In thousands)	Retained Earnings	Accumulated Other Comprehensive (Loss)	Noncontrolling Interests
Balances March 31, 2019	\$ 947,929	\$ (204,563)	\$ 5,924
Net income	40,112	—	—
Foreign currency translation adjustments	—	(385)	—
Pension and post-retirement plan adjustments, net of tax of \$1,384	—	1,378	—
Unrealized net gain on available-for-sale securities	—	27	—
Income attributable to noncontrolling interests	(306)	137	169
Common dividends	(16,272)	—	—
Preferred dividends (\$0.5625 per share)	(10)	—	—
Balances June 30, 2019	\$ 971,453	\$ (203,406)	\$ 6,093
Balances March 31, 2020	\$ 1,039,609	\$ (233,075)	\$ 6,786
Net income	36,406	—	—
Foreign currency translation adjustments	—	4,669	—
Pension and post-retirement plan adjustments, net of tax of \$1,079	—	3,090	—
Unrealized net gain on available-for-sale securities (Note 17)	—	124	—
Reclassification from accumulated other comprehensive (loss) into net income	—	—	—
Income attributable to noncontrolling interests	(340)	(18)	358
Common dividends	(16,710)	—	—
Preferred dividends (\$0.5625 per share)	(10)	—	—
Balances June 30, 2020	\$ 1,058,955	\$ (225,210)	\$ 7,144
Balances December 31, 2018	\$ 935,577	\$ (218,927)	\$ 5,637
Net income	63,488	—	—
Foreign currency translation adjustments	—	(24)	—
Pension and post-retirement plan adjustments, net of tax of \$666	—	3,401	—
Unrealized net gain on available-for-sale securities (Note 16)	—	563	—
Reclassification from accumulated other comprehensive (loss) into net income (Note 6)	—	15,359	—
Income attributable to noncontrolling interests	(450)	(6)	456
Common dividends	(30,914)	—	—
Preferred dividends (\$0.5625 per share)	(20)	—	—
Cumulative effect of the adoption of ASU 2018-02	3,772	(3,772)	—
Balances June 30, 2019	\$ 971,453	\$ (203,406)	\$ 6,093
Balances December 31, 2019	\$ 1,012,266	\$ (214,003)	\$ 6,773
Net income	80,209	—	—
Foreign currency translation adjustments	—	(18,278)	—
Pension and post-retirement plan adjustments, net of tax of \$2,146	—	6,192	—
Unrealized net gain on available-for-sale securities (Note 16)	—	62	—
Reclassification of currency translation from accumulated other comprehensive (loss) into net income (Note 6)	—	720	—
Income attributable to noncontrolling interests	(468)	97	371
Common dividends	(33,032)	—	—
Preferred dividends (\$0.5625 per share)	(20)	—	—
Balances June 30, 2020	\$ 1,058,955	\$ (225,210)	\$ 7,144

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

MSA SAFETY INCORPORATED
NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS

Unaudited

Note 1—Basis of Presentation

The condensed consolidated financial statements of MSA Safety Incorporated and its subsidiaries ("MSA" or the "Company") are unaudited. These condensed consolidated financial statements include all adjustments, consisting of normal recurring adjustments, considered necessary by management to fairly state the Company's results. Intercompany accounts and transactions have been eliminated. The results reported in these condensed consolidated financial statements are not necessarily indicative of the results that may be expected for the entire year. The December 31, 2019, Condensed Consolidated Balance Sheet data was derived from the audited Consolidated Balance Sheet, but does not include all disclosures required by accounting principles generally accepted in the United States of America (U.S. GAAP). This Form 10-Q report should be read in conjunction with MSA's Form 10-K for the year ended December 31, 2019, which includes all disclosures required by U.S. GAAP.

Note 2—Recently Adopted and Recently Issued Accounting Standards

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses*. This ASU introduces an approach based on expected losses to estimate credit losses on certain types of financial instruments, including loans, held-to-maturity debt securities, loan commitments, financial guarantees and net investments in leases, as well as reinsurance and trade receivables. This ASU was adopted on January 1, 2020, which did not have an impact on the unaudited condensed consolidated financial statements.

In August 2018, the FASB issued ASU 2018-13, *Disclosure Framework - Changes to the Disclosure Requirements for Fair Value Measurement*, which improves fair value disclosure requirements by removing disclosures that are not cost beneficial, clarifying disclosures' specific requirements and adding relevant disclosure requirements. The Company adopted this ASU on January 1, 2020. The adoption of this ASU did not have a material impact on the unaudited condensed consolidated financial statements. The Company expects to include changes to our annual disclosures as a result of the adoption of this ASU.

In August 2018, the FASB issued ASU 2018-14, *Disclosure Framework - Changes to the Disclosure Requirements for Defined Benefit Plans*, which improves defined benefit disclosure requirements by removing disclosures that are not cost beneficial, clarifying disclosures' specific requirements and adding relevant disclosure requirements. This ASU is effective for fiscal years ending after December 15, 2020, and early adoption is permitted. The amendments in this ASU are required to be applied on a retrospective basis to all periods presented. The Company is still evaluating the impact that the adoption of this ASU will have on our consolidated financial statements. The Company does expect changes to our disclosures upon adoption.

Note 3—Inventories

The following table sets forth the components of inventory:

(In thousands)	June 30, 2020	December 31, 2019
Finished products	\$ 92,074	\$ 71,918
Work in process	7,697	4,083
Raw materials and supplies	167,990	151,129
Inventories at current cost	267,761	227,130
Less: LIFO valuation	(42,351)	(42,103)
Total inventories	\$ 225,410	\$ 185,027

Note 4—Restructuring Charges

During the three and six months ended June 30, 2020, we recorded restructuring charges of \$8.9 million and \$10.9 million, respectively. International segment restructuring charges of \$8.5 million during the six months ended June 30, 2020, were primarily related to severance costs for staff reductions and footprint optimization associated with our ongoing initiatives to drive profitable growth. Americas segment restructuring charges of \$2.2 million during the six months ended June 30, 2020, were primarily related to costs associated with our global Fixed Gas & Flame Detection manufacturing footprint optimization.

During the three and six months ended June 30, 2019, we recorded restructuring charges of \$3.5 million and \$9.4 million, respectively. International segment restructuring charges of \$8.9 million during the six months ended June 30, 2019, were primarily related to severance costs for staff reductions associated with our ongoing initiatives to drive profitable growth and a non-cash settlement charge for the closure of our pension plan in the United Kingdom. Corporate segment restructuring charges of \$0.4 million during the six months ended June 30, 2019, were primarily related to the legal and operational realignment of our U.S. and Canadian operations.

Activity and reserve balances for restructuring charges by segment were as follows:

(In millions)	Americas	International	Corporate	Total
Reserve balances at December 31, 2018	\$ 0.5	\$ 4.0	\$ —	\$ 4.5
Restructuring charges	0.5	12.7	0.6	13.8
Currency translation and other adjustments	(0.1)	(0.6)	—	(0.7)
Cash payments / utilization	(0.6)	(10.2)	(0.6)	(11.4)
Reserve balances at December 31, 2019	\$ 0.3	\$ 5.9	\$ —	\$ 6.2
Restructuring charges	2.2	8.5	0.2	10.9
Currency translation and other adjustments	(0.1)	0.1	—	—
Cash payments	(0.3)	(3.2)	(0.2)	(3.7)
Reserve balances at June 30, 2020	<u>\$ 2.1</u>	<u>\$ 11.3</u>	<u>\$ —</u>	<u>\$ 13.4</u>

Note 5—Property, Plant and Equipment

The following table sets forth the components of property, plant and equipment, net:

(In thousands)	June 30, 2020	December 31, 2019
Land	\$ 4,116	\$ 4,194
Buildings	125,393	125,223
Machinery and equipment	403,403	397,287
Construction in progress	31,669	24,759
Total	<u>564,581</u>	<u>551,463</u>
Less: accumulated depreciation	(394,397)	(384,425)
Property, plant and equipment, net	<u>\$ 170,184</u>	<u>\$ 167,038</u>

Note 6—Reclassifications Out of Accumulated Other Comprehensive Loss

Changes in accumulated other comprehensive loss were as follows:

(In thousands)	MSA Safety Incorporated		Noncontrolling Interests	
	Three Months Ended June 30,		Three Months Ended June 30,	
	2020	2019	2020	2019
Pension and other post-retirement benefits ^(a)				
Balance at beginning of period	\$ (121,746)	\$ (117,266)	\$ —	\$ —
Amounts reclassified from accumulated other comprehensive loss into net income:				
Amortization of prior service (credit) cost (Note 14)	(52)	11	—	—
Recognized net actuarial losses (Note 14)	4,221	2,751	—	—
Tax benefit	(1,079)	(1,384)	—	—
Total amount reclassified from accumulated other comprehensive loss, net of tax, into net income	3,090	1,378	—	—
Balance at end of period	\$ (118,656)	\$ (115,888)	\$ —	\$ —
Available-for-sale securities				
Balance at beginning of period	\$ (56)	\$ (36)	\$ —	\$ —
Unrealized gain on available-for-sale securities (Note 16)	124	27	—	—
Balance at end of period	\$ 68	\$ (9)	\$ —	\$ —
Foreign currency translation				
Balance at beginning of period	\$ (111,273)	\$ (87,261)	\$ 308	\$ 639
Foreign currency translation adjustments	4,651	(248)	18	(137)
Balance at end of period	\$ (106,622)	\$ (87,509)	\$ 326	\$ 502

^(a) Reclassifications out of accumulated other comprehensive loss and into net income are included in the computation of net periodic pension and other post-retirement benefit costs (refer to Note 14—Pensions and Other Post-retirement Benefits).

(In thousands)	MSA Safety Incorporated		Noncontrolling Interests	
	Six Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Pension and other post-retirement benefits ^(a)				
Balance at beginning of period	\$ (124,848)	\$ (115,517)	\$ —	\$ —
Amounts reclassified from accumulated other comprehensive loss into net income:				
Amortization of prior service credit (Note 14)	(104)	(94)	—	—
Recognized net actuarial losses (Note 14)	8,442	5,545	—	—
Tax benefit	(2,146)	(2,050)	—	—
Total amount reclassified from accumulated other comprehensive loss, net of tax, into net income	6,192	3,401	—	—
Reclassification to retained earnings due to adoption of ASU 2018-02	—	(3,772)	—	—
Balance at end of period	\$ (118,656)	\$ (115,888)	\$ —	\$ —
Available-for-sale securities				
Balance at beginning of period	\$ 6	\$ (572)	\$ —	\$ —
Unrealized gain on available-for-sale securities (Note 16)	62	563	—	—
Balance at end of period	\$ 68	\$ (9)	\$ —	\$ —
Foreign currency translation				
Balance at beginning of period	\$ (89,161)	\$ (102,838)	\$ 423	\$ 496
Reclassification from accumulated other comprehensive loss into net income	720 ^(b)	15,359 ^(c)	—	—
Foreign currency translation adjustments	(18,181)	(30)	(97)	6
Balance at end of period	\$ (106,622)	\$ (87,509)	\$ 326	\$ 502

^(a) Reclassifications out of accumulated other comprehensive loss and into net income are included in the computation of net periodic pension and other post-retirement benefit costs (refer to Note 14—Pensions and Other Post-retirement Benefits).

^(b) Reclassifications into net income relate primarily to the approval of our plan to close several subsidiaries in our Europe, Middle East & Africa ("EMEA") operating segment and are included in Currency exchange losses, net, within the unaudited Condensed Consolidated Statement of Income.

^(c) Reclassifications into net income relate primarily to the closure of our South Africa subsidiaries and are included in Currency exchange losses, net, within the unaudited Condensed Consolidated Statement of Income.

Note 7—Capital Stock

Preferred Stock - The Company has authorized 100,000 shares of \$50 par value 4.5% cumulative preferred nonvoting stock which is callable at \$52.50. There are 71,340 shares issued and 52,998 shares held in treasury at June 30, 2020. The Treasury shares at cost line on the unaudited Condensed Consolidated Balance Sheet includes \$1.8 million related to preferred stock. There were treasury purchases of 120 preferred stock shares during the six months ended June 30, 2020. There were no treasury purchases of preferred stock during the six months ended June 30, 2019. The Company has also authorized 1,000,000 shares of \$10 par value second cumulative preferred voting stock. No shares have been issued as of June 30, 2020.

Common Stock - The Company has authorized 180,000,000 shares of no par value common stock. There were 62,081,391 shares issued as of December 31, 2019. No new shares were issued during the six months ended June 30, 2020, or 2019. There were 38,883,634 and 38,841,194 shares outstanding at June 30, 2020, and December 31, 2019, respectively.

Treasury Shares - The Company's share repurchase program authorizes up to \$100.0 million to repurchase MSA common stock in the open market and in private transactions. The share repurchase program has no expiration date. The maximum number of shares that may be repurchased is calculated based on the dollars remaining under the program and the respective month-end closing share price. During the six months ended June 30, 2020, 175,000 shares were repurchased under this program and all of the repurchases occurred during the first quarter. During the six months ended June 30, 2019, 33,465 shares were repurchased under the program. There were 23,197,757 and 23,240,197 Treasury Shares at June 30, 2020, and December 31, 2019, respectively.

The Company issues Treasury Shares for all stock-based compensation plans. Shares are issued from Treasury at the average Treasury Share cost on the date of the transaction. There were 63,405 and 293,556 Treasury Shares issued for these purposes during the six months ended June 30, 2020 and 2019, respectively.

Common stock activity is summarized as follows:

(In thousands)	Three Months Ended June 30, 2020		Three Months Ended June 30, 2019	
	Common Stock	Treasury Cost	Common Stock	Treasury Cost
Balance at beginning of period	\$ 232,167	\$ (328,081)	\$ 213,099	\$ (300,919)
Stock compensation expense	830	—	3,340	—
Restricted and performance stock awards	(226)	226	(232)	232
Stock options exercised	677	330	1,372	395
Treasury shares purchased	—	(524)	—	(148)
Stock consideration in acquisition	—	—	921	—
Employee stock purchase program	338	52	301	43
Share repurchase program	—	—	—	(3,347)
Balance at end of period	\$ 233,786	\$ (327,997)	\$ 218,801	\$ (303,744)

(In thousands)	Six Months Ended June 30, 2020		Six Months Ended June 30, 2019	
	Common Stock	Treasury Cost	Common Stock	Treasury Cost
Balance at beginning of period	\$ 229,127	\$ (303,566)	\$ 211,806	\$ (296,390)
Stock compensation expense	4,352	—	6,086	—
Restricted and performance stock awards	(2,464)	2,464	(2,643)	2,643
Stock options exercised	2,433	1,307	2,330	902
Treasury shares purchased	—	(8,141)	—	(7,595)
Stock consideration in acquisition	—	—	921	—
Employee stock purchase program	338	52	301	43
Share repurchase program	—	(20,113)	—	(3,347)
Balance at end of period	\$ 233,786	\$ (327,997)	\$ 218,801	\$ (303,744)

Note 8—Segment Information

On January 1, 2020, we restructured our business from six geographical operating segments into four geographical operating segments that are based on management responsibilities: Northern North America, Latin America, Europe, Middle East & Africa ("EMEA"), and Asia Pacific ("APAC") to better serve customer needs. The operating segments have been aggregated (based on economic similarities, the nature of their products, end-user markets and methods of distribution) into three reportable segments: Americas, International, and Corporate. The operating segment change did not impact reportable segments as all changes were within the International reportable segment.

The Americas segment is comprised of our operations in North American and Latin American geographies. The International segment is comprised of our operations of all geographies outside of the Americas. Certain global expenses are allocated to each segment in a manner consistent with where the benefits from the expenses are derived.

The Company's sales are allocated to each country based primarily on the destination of the end-customer.

Adjusted operating income (loss), adjusted operating margin, adjusted earnings before interest, taxes, depreciation and amortization (EBITDA) and adjusted EBITDA margin are the measures used by the chief operating decision maker to evaluate segment performance and allocate resources. Adjusted operating income (loss) is defined as operating income excluding restructuring charges, currency exchange gains (losses), product liability expense, strategic transaction costs and COVID-19 related costs, consisting of a one-time bonus for essential manufacturing employees and adjusted operating margin is defined as adjusted operating income (loss) divided by segment sales to external customers. Adjusted EBITDA is defined as adjusted operating income (loss) plus depreciation and amortization and adjusted EBITDA margin is defined as adjusted EBITDA divided by segment sales to external customers. Adjusted operating income (loss), adjusted operating margin, adjusted EBITDA and adjusted EBITDA margin are not recognized terms under U.S. GAAP, and therefore, do not purport to be alternatives to operating income or operating margin as a measure of operating performance. Further, the Company's measure of adjusted operating income (loss), adjusted operating margin, adjusted EBITDA and adjusted EBITDA margin may not be comparable to similarly titled measures of other companies. Adjusted operating income (loss) and adjusted EBITDA on a consolidated basis is presented in the following table to reconcile the segment operating performance measure to operating income as presented on the Consolidated Statement of Income.

The accounting principles applied at the operating segment level in determining operating income (loss) are generally the same as those applied at the consolidated financial statement level. Sales and transfers between operating segments are accounted for at market-based transaction prices and are eliminated in consolidation.

Reportable segment information is presented in the following table:

(In thousands, except percentage amounts)	Americas	International	Corporate	Consolidated Totals
Three Months Ended June 30, 2020				
Sales to external customers	\$ 204,231	\$ 110,207	\$ —	\$ 314,438
Operating income				48,294
Restructuring charges (Note 4)				8,865
Currency exchange losses, net (Note 6)				793
Product liability expense (Note 17)				851
Strategic transaction costs (Note 18)				64
Adjusted operating income (loss)	49,003	17,402	(7,538)	58,867
Adjusted operating margin %	24.0 %	15.8 %		
Depreciation and amortization				9,786
Adjusted EBITDA	55,620	20,474	(7,441)	68,653
Adjusted EBITDA %	27.2 %	18.6 %		
Six Months Ended June 30, 2020				
Sales to external customers	\$ 435,484	\$ 220,099	\$ —	\$ 655,583
Operating income				107,076
Restructuring charges (Note 4)				10,872
Currency exchange losses, net (Note 6)				1,063
Product liability expense (Note 17)				2,802
Strategic transaction costs (Note 18)				161
COVID-19 related costs				757
Adjusted operating income (loss)	108,811	30,073	(16,153)	122,731
Adjusted operating margin %	25.0 %	13.7 %		
Depreciation and amortization				19,428
Adjusted EBITDA	121,878	36,239	(15,958)	142,159
Adjusted EBITDA %	28.0 %	16.5 %		

(In thousands, except percentage amounts)	Americas	International	Corporate	Consolidated Totals
Three Months Ended June 30, 2019				
Sales to external customers	\$ 231,389	\$ 118,286	\$ —	\$ 349,675
Operating income				54,478
Restructuring charges (Note 4)				3,522
Currency exchange losses, net (Note 6)				1,290
Product liability expense (Note 17)				3,529
Strategic transaction costs (Note 18)				1,529
Adjusted operating income (loss)	57,689	15,072	(8,413)	64,348
Adjusted operating margin %	24.9 %	12.7 %		
Depreciation and amortization				9,466
Adjusted EBITDA	63,842	18,288	(8,316)	73,814
Adjusted EBITDA %	27.6 %	15.5 %		
Six Months Ended June 30, 2019				
Sales to external customers	\$ 445,076	\$ 230,637	\$ —	\$ 675,713
Operating income				86,638
Restructuring charges (Note 4)				9,353
Currency exchange losses, net (Note 6)				18,251
Product liability expense (Note 17)				6,425
Strategic transaction costs (Note 18)				1,985
Adjusted operating income (loss)	112,492	26,112	(15,952)	122,652
Adjusted operating margin %	25.3 %	11.3 %		
Depreciation and amortization				18,792
Adjusted EBITDA	124,742	32,459	(15,757)	141,444
Adjusted EBITDA %	28.0 %	14.1 %		

Total sales by product group was as follows:

Three Months Ended June 30, 2020 (In thousands, except percentages)	Consolidated		Americas		International	
	Dollars	Percent	Dollars	Percent	Dollars	Percent
Breathing Apparatus	\$ 75,864	24%	\$ 50,269	25%	\$ 25,595	23%
Fixed Gas & Flame Detection	65,385	21%	36,742	18%	28,643	26%
Firefighter Helmets & Protective Apparel	40,337	13%	33,744	16%	6,593	6%
Industrial Head Protection	30,601	10%	20,506	10%	10,095	9%
Portable Gas Detection	28,385	9%	17,201	8%	11,184	10%
Fall Protection	21,660	7%	11,381	6%	10,279	9%
Other ^(a)	52,206	16%	34,388	17%	17,818	17%
Total	\$ 314,438	100%	\$ 204,231	100%	\$ 110,207	100%

Six Months Ended June 30, 2020 (In thousands, except percentages)	Consolidated		Americas		International	
	Dollars	Percent	Dollars	Percent	Dollars	Percent
Breathing Apparatus	\$ 151,708	23%	\$ 102,962	24%	\$ 48,746	22%
Fixed Gas & Flame Detection	135,296	21%	77,989	18%	57,307	26%
Firefighter Helmets & Protective Apparel	82,884	13%	68,857	16%	14,027	7%
Portable Gas Detection	69,437	11%	44,850	10%	24,587	11%
Industrial Head Protection	65,933	10%	48,061	11%	17,872	8%
Fall Protection	49,087	7%	29,076	7%	20,011	9%
Other ^(a)	101,238	15%	63,689	14%	37,549	17%
Total	\$ 655,583	100%	\$ 435,484	100%	\$ 220,099	100%

Three Months Ended June 30, 2019 (In thousands, except percentages)	Consolidated		Americas		International	
	Dollars	Percent	Dollars	Percent	Dollars	Percent
Breathing Apparatus	\$ 74,907	22%	\$ 50,584	22%	\$ 24,323	21%
Fixed Gas & Flame Detection	70,310	20%	39,118	17%	31,192	26%
Firefighter Helmets & Protective Apparel	48,799	14%	39,091	17%	9,708	8%
Portable Gas Detection	42,343	12%	33,844	13%	8,499	7%
Industrial Head Protection	38,921	11%	25,045	12%	13,876	12%
Fall Protection	31,629	9%	18,720	8%	12,909	11%
Other ^(a)	42,766	12%	24,987	11%	17,779	15%
Total	\$ 349,675	100%	\$ 231,389	100%	\$ 118,286	100%

Six Months Ended June 30, 2019 (In thousands, except percentages)	Consolidated		Americas		International	
	Dollars	Percent	Dollars	Percent	Dollars	Percent
Breathing Apparatus	\$ 150,354	22%	\$ 101,489	23%	\$ 48,865	21%
Fixed Gas & Flame Detection	130,709	19%	72,048	16%	58,661	25%
Firefighter Helmets & Protective Apparel	92,376	14%	74,155	17%	18,221	8%
Portable Gas Detection	83,069	12%	55,458	12%	27,611	12%
Industrial Head Protection	74,665	12%	58,258	13%	16,407	7%
Fall Protection	61,756	9%	36,680	8%	25,076	11%
Other ^(a)	82,784	12%	46,988	11%	35,796	16%
Total	\$ 675,713	100%	\$ 445,076	100%	\$ 230,637	100%

^(a) Other products include sales of Air Purifying Respirators.

Note 9—Earnings per Share

Basic earnings per share attributable to MSA Safety Incorporated common shareholders is computed by dividing net income, after the deduction of preferred stock dividends and undistributed earnings allocated to participating securities, by the weighted average number of common shares outstanding during the period. Diluted earnings per share attributable to MSA Safety Incorporated common shareholders assumes the issuance of common stock for all potentially dilutive share equivalents outstanding not classified as participating securities. Participating securities are defined as unvested stock-based compensation awards that contain nonforfeitable rights to dividends.

Amounts attributable to MSA Safety Incorporated common shareholders:

(In thousands, except per share amounts)

	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Net income	\$ 36,066	\$ 39,806	\$ 79,741	\$ 63,038
Preferred stock dividends	(10)	(10)	(20)	(20)
Net income available to common equity	36,056	39,796	79,721	63,018
Dividends and undistributed earnings allocated to participating securities	(34)	(49)	(67)	(71)
Net income available to common shareholders	36,022	39,747	79,654	62,947
Basic weighted-average shares outstanding	38,830	38,663	38,826	38,602
Stock-based compensation awards	365	497	447	522
Diluted weighted-average shares outstanding	39,195	39,160	39,273	39,124
Antidilutive stock options	—	—	—	—
Earnings per share:				
Basic	\$ 0.93	\$ 1.03	\$ 2.05	\$ 1.63
Diluted	\$ 0.92	\$ 1.01	\$ 2.03	\$ 1.61

Note 10—Income Taxes

The Company's effective tax rate for the second quarter of 2020 was 23.9% and differs from the U.S. federal statutory rate of 21% primarily due to state income taxes, increased profitability in less favorable tax jurisdictions and higher foreign entity losses in jurisdictions where we cannot take tax benefits, partially offset by tax benefits on certain share-based payments and benefits related to research and development tax credits. The Company's effective tax rate for the second quarter of 2019 was 24.8%, which differs from the U.S. statutory rate of 21% primarily due to increased profitability in less favorable tax jurisdictions and higher foreign entity losses in jurisdictions where we cannot take tax benefits.

The Company's effective tax rate for the six months ended June 30, 2020, was 23.4% and differs from the U.S. federal statutory rate of 21% primarily due to state income taxes, increased profitability in less favorable tax jurisdictions and higher foreign entity losses in jurisdictions where we cannot take tax benefits, partially offset by tax benefits on certain share-based payments. The Company's effective tax rate for the six months ended June 30, 2019, was 25.9% which differs from the U.S. federal statutory rate of 21% primarily due to increased profitability in less favorable tax jurisdictions, higher foreign entity losses in jurisdictions where we cannot take tax benefits and non-deductible foreign exchange on entity closures, partially offset by certain share-based payments.

At June 30, 2020, the Company had a gross liability for unrecognized tax benefits of \$5.0 million. The Company has recognized tax benefits associated with these liabilities of \$2.1 million at June 30, 2020. The gross liability includes amounts associated with prior period foreign tax exposure.

The Company recognizes interest related to unrecognized tax benefits in interest expense and penalties in operating expenses. The Company's liability for accrued interest related to uncertain tax positions was \$0.9 million at June 30, 2020.

We are subject to regular review and audit by both foreign and domestic tax authorities. While we believe our tax positions will be sustained, the final outcome of tax audits and related litigation may differ materially from the tax amounts recorded in our condensed consolidated financial statements.

Note 11—Stock Plans

The 2016 Management Equity Incentive Plan provides for various forms of stock-based compensation for eligible key employees through May 2026. Management stock-based compensation includes stock options, restricted stock awards, restricted stock units and performance stock units. The 2017 Non-Employee Directors' Equity Incentive Plan provides for grants of stock options and restricted stock to non-employee directors through May 2027. We issue treasury shares for stock option exercises and grants of restricted stock and performance stock. Please refer to Note 7—Capital Stock for further information regarding stock compensation share issuance.

Stock compensation expense is as follows:

(In thousands)	Three Months Ended June 30,		Six Months Ended June 30,	
	2020	2019	2020	2019
Stock compensation expense	\$ 830	\$ 3,340	\$ 4,352	\$ 6,086
Income tax benefit	202	815	1,062	1,485
Stock compensation expense, net of income tax benefit	\$ 628	\$ 2,525	\$ 3,290	\$ 4,601

A summary of stock option activity for the six months ended June 30, 2020, follows:

	Shares	Weighted Average Exercise Price
Outstanding at January 1, 2020	559,656	\$ 45.78
Exercised	(96,101)	38.92
Forfeited	(952)	41.98
Outstanding at June 30, 2020	462,603	47.21
Exercisable at June 30, 2020	458,919	\$ 47.21

Restricted stock awards and restricted stock units are valued at the market value of the stock on the grant date. A summary of restricted stock activity for the six months ended June 30, 2020, follows:

	Shares	Weighted Average Grant Date Fair Value
Unvested at January 1, 2020	172,701	\$ 90.38
Granted	47,355	122.65
Vested	(59,464)	81.30
Forfeited	(3,065)	97.28
Unvested at June 30, 2020	157,527	\$ 103.38

Performance stock units have a market condition modifier and are valued at an estimated fair value using a Monte Carlo model. The final number of shares to be issued for performance stock units granted in the first quarter of 2020 may range from 0% to 200% of the target award based on achieving the specified performance targets over the performance period plus an additional modifier based on total shareholder return (TSR) over the performance period. The following weighted average assumptions were used in estimating the fair value of the performance stock units granted in the first quarter of 2020.

Fair value per unit	\$127.36
Risk-free interest rate	1.16%
Expected dividend yield	1.48%
Expected volatility	24.8%
MSA stock beta	0.988

The risk-free interest rate is based on the U.S. Treasury Constant Maturity rates as of the grant date converted into an implied spot rate yield curve. Expected dividend yield is based on the most recent annualized dividend divided by the one year average closing share price. Expected volatility is based on the ten year historical volatility using daily stock prices. Expected life is based on historical stock option exercise data.

A summary of performance stock unit activity for the six months ended June 30, 2020, follows:

	Shares	Weighted Average Grant Date Fair Value
Unvested at January 1, 2020	238,035	\$ 85.39
Granted	64,791	127.36
Performance adjustments	33,499	72.36
Vested	(132,036)	73.00
Forfeited	(3,698)	120.69
Unvested at June 30, 2020	200,591	\$ 104.28

The performance adjustments above relate primarily to the final number of shares issued for the 2017 performance unit awards which vested in the first quarter of 2020 at 135.7% of the target award based on both cumulative performance against the operating margin and revenue growth targets and MSA's TSR during the three year performance period.

Note 12—Long-Term Debt

(In thousands)	June 30, 2020	December 31, 2019
2010 Senior Notes payable through 2021, 4.00%, net of debt issuance costs	\$ 40,000	\$ 40,000
2016 Senior Notes payable through 2031, 3.40%, net of debt issuance costs	67,987	72,708
Senior revolving credit facility maturing in 2023, net of debt issuance costs	226,513	235,686
Total	334,500	348,394
Amounts due within one year, net of debt issuance costs	20,000	20,000
Long-term debt, net of debt issuance costs	\$ 314,500	\$ 328,394

On September 7, 2018, the Company entered into an amended agreement covering its senior revolving credit facility that extended its term through September 2023 and increased the capacity to \$600.0 million. Under the amended agreement, the Company may elect either a Base rate of interest ("BASE") or an interest rate based on the London Interbank Offered Rate ("LIBOR"). The BASE is a daily fluctuating per annum rate equal to the highest of (i) 0.00%, (ii) the Prime Rate, (ii) the Federal Funds Open Rate plus one half of one percent (0.5%), (iii) the Overnight Bank Funding Rate, plus one half of one percent (0.50%), or (iv) the Daily Libor Rate plus one percent (1.00%). The Company pays a credit spread of 0 to 175 basis points based on the Company's net EBITDA leverage ratio and elected rate (BASE or LIBOR). The Company has a weighted average revolver interest rate of 1.05% as of June 30, 2020. At June 30, 2020, \$370.4 million of the existing \$600.0 million senior revolving credit facility was unused, including letters of credit issued under the facility. The facility also provides an accordion feature that allows the Company to access an additional \$400.0 million of capacity pending approval from the bank group.

On January 22, 2016, the Company entered into an amended multi-currency note purchase and private shelf agreement, pursuant to which the Company issued notes in an aggregate original principal amount of £54.9 million (approximately \$68.1 million at June 30, 2020). The Notes are repayable in annual installments of £6.1 million (approximately \$7.6 million at June 30, 2020), commencing January 22, 2023, with a final payment of any remaining amount outstanding on January 22, 2031. The interest rate on these Notes is fixed at 3.4%. On September 7, 2018, the Company further amended the multi-currency note purchase and private shelf agreement, among other things, to allow the Company to request from time to time during a three-year period ending September 7, 2021, the issuance of up to \$150 million of additional senior notes. No additional notes have been issued under the amended agreement as of June 30, 2020.

On January 4, 2019, the Company entered into an amended and restated master note facility with New York Life. Under the amended facility, the Company may request from time to time during a three-year period ending January 4, 2022, the issuance of up to \$150 million of additional senior promissory notes. As of June 30, 2020, no notes have been issued under the amended facility.

The senior revolving credit facility and the multi-currency note purchase and private shelf agreement require the Company to comply with specified financial covenants, including a requirement to maintain a minimum fixed charges coverage ratio of not less than 1.50 to 1.00 and a consolidated leverage ratio not to exceed 3.50 to 1.00; except during an acquisition period in which case the consolidated net leverage ratio shall not exceed 4.00 to 1.00; in each case calculated on the basis of the trailing four fiscal quarters. In addition, both agreements contain negative covenants limiting the ability of the Company and its subsidiaries to incur additional indebtedness or issue guarantees, create or incur liens, make loans and investments, make acquisitions, transfer or sell assets, enter into transactions with affiliated parties, make changes in its organizational documents that are materially adverse to lenders or modify the nature of MSA's or its subsidiaries' business. However, the covenants contained in the New York Life amended facility do not apply until promissory notes are issued.

The Company was in compliance with all covenants at June 30, 2020.

The Company had outstanding bank guarantees and standby letters of credit with banks as of June 30, 2020, totaling \$9.6 million, of which \$1.9 million relate to the senior revolving credit facility. The letters of credit serve to cover customer requirements in connection with certain sales orders and insurance. The Company is also required to provide cash collateral in connection with certain arrangements. At June 30, 2020, the Company has \$0.4 million of restricted cash in support of these arrangements.

Note 13—Goodwill and Intangible Assets

Changes in goodwill during the six months ended June 30, 2020 are as follows:

(In thousands)	Goodwill	
Balance at January 1, 2020	\$	436,679
Currency translation		(6,008)
Balance at June 30, 2020	\$	430,671

At June 30, 2020, the Company had goodwill of \$293.2 million and \$137.5 million related to the Americas and International reportable segments, respectively.

Changes in intangible assets, net during the six months ended June 30, 2020, are as follows:

(In thousands)	Intangible Assets	
Net balance at January 1, 2020	\$	171,326
Amortization expense		(5,739)
Currency translation		(2,680)
Net balance at June 30, 2020	\$	162,907

At June 30, 2020, the above intangible assets balance includes a trade name related to the Globe acquisition with an indefinite life totaling \$60.0 million.

Note 14—Pensions and Other Post-retirement Benefits

Components of net periodic benefit cost consisted of the following:

(In thousands)	Pension Benefits		Other Benefits	
	2020	2019	2020	2019
Three Months Ended June 30,				
Service cost	\$ 3,011	\$ 2,736	\$ 99	\$ 89
Interest cost	3,726	4,721	179	249
Expected return on plan assets	(8,503)	(9,658)	—	—
Amortization of prior service cost (credit)	46	112	(98)	(101)
Recognized net actuarial losses	3,935	2,534	286	217
Settlements	—	2,363 ^(b)	—	—
Net periodic benefit cost ^(a)	\$ 2,215	\$ 2,808	\$ 466	\$ 454
Six Months Ended June 30,				
Service cost	\$ 6,022	\$ 5,159	\$ 198	\$ 178
Interest cost	7,452	9,426	358	498
Expected return on plan assets	(17,006)	(19,311)	—	—
Amortization of prior service cost (credit)	92	108	(196)	(202)
Recognized net actuarial losses	7,870	5,111	572	434
Settlements	—	2,363 ^(b)	—	—
Net periodic benefit cost ^(a)	\$ 4,430	\$ 2,856	\$ 932	\$ 908

^(a) Components of net periodic benefit cost other than service cost are included in the line item "Other income, net" in the unaudited Condensed Consolidated Statement of Income.

^(b) Related to a non-cash charge associated with the closure of our pension plan in the U.K. and included in "Restructuring charges" on the unaudited Condensed Consolidated Statement of Income.

We made contributions of \$3.8 million and \$3.5 million to our pension plans during the six months ended June 30, 2020 and 2019, respectively. We expect to make total contributions of approximately \$7.6 million to our pension plans in 2020 which are primarily associated with our International segment.

Note 15—Derivative Financial Instruments

As part of our currency exchange rate risk management strategy, we may enter into certain derivative foreign currency forward contracts that do not meet the U.S. GAAP criteria for hedge accounting, but which have the impact of partially offsetting certain foreign currency exposures. We account for these forward contracts at fair value and report the related gains or losses in currency exchange losses, net, in the unaudited Condensed Consolidated Statement of Income. The notional amount of open forward contracts was \$77.8 million and \$74.9 million at June 30, 2020, and December 31, 2019, respectively.

The following table presents the unaudited Condensed Consolidated Balance Sheet location and fair value of assets and liabilities associated with derivative financial instruments:

(In thousands)	June 30, 2020	December 31, 2019
Derivatives not designated as hedging instruments:		
Foreign exchange contracts: Warranty reserve and other current liabilities	\$ 96	\$ 125
Foreign exchange contracts: Prepaid expenses and other current assets	169	687

The following table presents the unaudited Condensed Consolidated Statement of Income location and impact of derivative financial instruments:

(In thousands)	Statement of Income Location	(Gain) Loss Recognized in Income	
		Six Months Ended June 30,	
		2020	2019
Derivatives not designated as hedging instruments:			
Foreign exchange contracts	Currency exchange losses, net	\$ (864)	\$ 2,407

Note 16—Fair Value Measurements

Fair value is defined 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 fair value hierarchy consists of three broad levels, which gives the highest priority to unadjusted quoted prices in active markets for identical assets or liabilities (Level 1) and the lowest priority to unobservable inputs (Level 3). The three levels of the fair value hierarchy are:

- Level 1—Observable inputs that reflect unadjusted quoted prices for identical assets or liabilities in active markets.
- Level 2—Inputs other than quoted prices included within Level 1 that are observable for the asset or liability, either directly or indirectly.
- Level 3—Unobservable inputs for the asset or liability.

The valuation methodologies we used to measure financial assets and liabilities include the derivative financial instruments described in Note 15—Derivative Financial Instruments. We estimate the fair value of the derivative financial instruments, consisting of foreign currency forward contracts, based upon valuation models with inputs that generally can be verified by observable market conditions and do not involve significant management judgment. Accordingly, the fair values of the derivative financial instruments are classified within Level 2 of the fair value hierarchy. With the exception of our investments in marketable securities and fixed rate long-term debt, we believe that the reported carrying amounts of our financial assets and liabilities approximate their fair values.

We value our investments in marketable securities, primarily fixed income, at fair value using quoted market prices for similar securities or pricing models. Accordingly, the fair values of the investments are classified within Level 2 of the fair value hierarchy. The amortized cost basis of our investments was \$59.7 million and \$49.7 million as of June 30, 2020 and December 31, 2019, respectively. The fair value was \$59.9 million and \$49.9 million as of June 30, 2020 and December 31, 2019, respectively, which was reported in "Investments, short-term" in the accompanying unaudited Condensed Consolidated Balance Sheet. The change in fair value is recorded in other comprehensive income, net of tax. The Company does not intend to sell, nor is it more likely than not that we will be required to sell, these securities prior to recovery of their cost, as such, management believes that any unrealized gains or losses are temporary; therefore, no impairment gains or losses relating to these securities have been recognized. All investments in marketable securities have maturities of one year or less and are currently in an unrealized gain position as of June 30, 2020.

The reported carrying amount of our fixed rate long-term debt (including the current portion) was \$108 million and \$113 million at June 30, 2020, and December 31, 2019, respectively. The fair value of this debt was \$124 million and \$129 million at June 30, 2020, and December 31, 2019, respectively. The fair value of this debt was determined using Level 2 inputs by evaluating similarly rated companies with publicly traded bonds where available or current borrowing rates available for financings with similar terms and maturities.

Note 17—Contingencies

Product liability

We face an inherent business risk of exposure to product liability claims arising from the alleged failure of our products to prevent the types of personal injury or death against which they are designed to protect. Product liability claims are categorized as either single incident or cumulative trauma.

Single incident product liability claims. Single incident product liability claims involve incidents of short duration that are typically known when they occur and involve observable injuries, which provide an objective basis for quantifying damages. The Company estimates its liability for single incident product liability claims based on expected settlement costs for asserted single incident product liability claims and an estimate of costs for single incident product liability claims incurred but not reported ("IBNR"). The estimate for IBNR claims is based on experience, sales volumes, and other relevant information.

The reserve for single incident product liability claims, which includes asserted single incident product liability claims and IBNR single incident product liability claims, was \$3.4 million and \$3.1 million at June 30, 2020 and December 31, 2019, respectively. Single incident product liability expense was \$0.3 million during the six months ended June 30, 2020 and \$0.4 million during the six months ended June 30, 2019. Single incident product liability exposures are evaluated on an annual basis, or more frequently if changing circumstances warrant. Adjustments are made to the reserve as appropriate.

Cumulative trauma product liability claims. Cumulative trauma product liability claims involve exposures to harmful substances (e.g., silica, asbestos and coal dust) that occurred years ago and may have developed over long periods of time into diseases such as silicosis, asbestosis, mesothelioma, or coal worker's pneumoconiosis. One of the Company's subsidiaries Mine Safety Appliances Company, LLC ("MSA LLC") was named as a defendant in 1,705 lawsuits comprised of 2,655 claims as of June 30, 2020. These lawsuits mainly involve respiratory protection products allegedly manufactured and sold by MSA LLC or its predecessors. The products at issue were manufactured many years ago and are not currently offered by MSA LLC.

A summary of cumulative trauma product liability lawsuits and asserted cumulative trauma product liability claims activity is as follows:

	Six Months Ended June 30, 2020	Year Ended December 31, 2019
Open lawsuits, beginning of period	1,605	1,481
New lawsuits	174	346
Settled and dismissed lawsuits	(74)	(222)
Open lawsuits, end of period	1,705	1,605
	Six Months Ended June 30, 2020	Year Ended December 31, 2019
Asserted claims, beginning of period	2,456	2,355
New claims	275	486
Settled and dismissed claims	(76)	(385)
Asserted claims, end of period	2,655	2,456

More than half of the open lawsuits at June 30, 2020, have had a de minimis level of activity over the last 5 years. It is possible that these cases could become active again at any time due to changes in circumstances.

Total cumulative trauma product liability reserve was \$166.1 million at June 30, 2020, including \$2.2 million for claims settled but not yet paid and related defense costs, and \$167.5 million at December 31, 2019, including \$3.0 million for claims settled but not yet paid and related defense costs. This reserve includes estimated amounts for asserted claims and IBNR claims. Those estimated amounts reflect asbestos, silica and coal dust claims expected to be resolved through the year 2069 and are not discounted to present value. The Company revised its estimates of MSA LLC's potential liability for cumulative trauma product liability claims for the year ended December 31, 2019 as a result of its annual review process described below. The reserve does not include amounts which will be spent to defend the claims covered by the reserve. Defense costs are recognized in the unaudited Condensed Consolidated Statement of Income as incurred. There was no change in trends or other activity during the quarter that required an interim remeasurement of the cumulative trauma product liability reserve as of June 30, 2020.

At June 30, 2020, \$16.6 million of the total reserve for cumulative trauma product liability claims is recorded in the Insurance and product liability line within other current liabilities in the unaudited Condensed Consolidated Balance Sheet and the remainder, \$149.5 million, is recorded in the Product liability and other noncurrent liabilities line. At December 31, 2019, \$17.4 million of the total reserve for cumulative trauma product liability claims is recorded in the Insurance and product liability line within other current liabilities in the unaudited Condensed Consolidated Balance Sheet and the remainder, \$150.1 million, is recorded in the Product liability and other noncurrent liabilities line.

Total cumulative trauma liability losses were \$3.3 million for the six months ended June 30, 2020, and \$7.1 million for the six months ended June 30, 2019, both primarily related to the defense of cumulative trauma product liability claims. Uninsured cumulative trauma product liability losses, which were included in Product liability expense on the unaudited Condensed Consolidated Statement of Income, were \$2.8 million and \$6.4 million for the six months ended June 30, 2020 and June 30, 2019, respectively, and represent the total cumulative trauma liability losses net of any estimated insurance receivables as discussed below.

To develop a reasonable estimate of MSA LLC's potential exposure to cumulative trauma product liability claims, Management performs an annual review of MSA LLC's cumulative trauma product liability claims, in consultation with an outside valuation consultant and outside legal counsel. The review process takes into account developments in MSA LLC's claims experience over the past year, developments in the tort system generally, and any other relevant information. Quarterly, management and outside legal counsel review whether significant new developments have occurred which could materially impact recorded amounts.

Certain significant assumptions underlying the material components of the reserve for cumulative trauma product liability claims have been made based on MSA LLC's experience related to the following:

- The types and severity, of illnesses alleged by claimants to give rise to their claims;
- The venues in which claims are asserted;
- The number of claims asserted against MSA LLC and the counsel asserting those claims; and
- The percentage of claims resolved through settlement and the values of settlements paid to claimants.

Additional assumptions include the following:

- MSA LLC will continue to evaluate and handle cumulative trauma product liability claims in accordance with its existing defense strategy;
- The number and effect of co-defendant bankruptcies will not materially change in the future;
- No material changes in medical science occur with respect to cumulative trauma product liability claims; and
- No material changes in law occur with respect to cumulative trauma product liability claims including no material state or federal tort reform actions.

Cumulative trauma product liability litigation is inherently unpredictable and MSA LLC's expense with respect to cumulative trauma product liability claims could vary significantly in future periods. With respect to asserted claims, this is because it is unclear at the time of filing whether a claim will be actively litigated. Even when a case is actively litigated, it is often difficult to determine if the lawsuit will be dismissed without payment or settled, because of sufficiency of product identification, statute of limitations challenges, or other defenses. As a result, it is typically unclear until late into a lawsuit whether any particular claim will result in a loss and, if so, to what extent. Actual loss amounts for settled claims are highly variable and turn on a case-by-case analysis of the relevant facts.

With respect to asserted or IBNR cumulative trauma product liability claims, MSA LLC's expense in future periods may vary from the reserve currently established for several reasons. In particular, MSA LLC's actual claims experience may differ in one or more respects from the significant assumptions listed above that were used by in establishing the reserve. Other factors that make MSA LLC's asserted and IBNR claims difficult to reasonably estimate include low volumes in the number of claims asserted and resolved (both in general and with respect to particular plaintiffs' counsel, as claims experience can vary significantly among different counsel), inconsistency of claims composition, uncertainty as to if and over what time periods claims might be asserted in the future, and other factors. Numerous uncertainties also exist with respect to factors not specific to MSA LLC, including potential legislative or judicial changes at the federal level or in key states concerning claims adjudication, future bankruptcy proceedings involving key co-defendants, payments from trusts established to compensate claimants, and/or changes in medical science relating to the diagnosis and treatment of claims.

Because cumulative trauma product liability litigation is subject to the significant modeling assumptions and inherent uncertainties described above, and unfavorable rulings or developments could occur, there can be no certainty that MSA LLC may not ultimately incur charges in excess of presently recorded liabilities. The reserve for cumulative trauma product liability claims may be adjusted from time to time based on changes to the factors and assumptions described above. If future estimates of cumulative trauma product liability claims are materially different than the accrued liability, we will record an appropriate adjustment to the unaudited Condensed Consolidated Statement of Income. These adjustments could materially impact our consolidated financial statements in future periods.

Insurance Receivable and Notes Receivable, Insurance Companies

Many years ago, MSA LLC purchased insurance policies from various insurance carriers that, subject to common contract exclusions, provided coverage for cumulative trauma product liability losses (the "Occurrence-Based Policies"). While we continue to pursue reimbursement under certain remaining Occurrence-Based Policies, the vast majority of these policies have been exhausted, settled or converted into either (1) negotiated Coverage-in-Place Agreements, or (2) negotiated settlement agreements, with scheduled payment streams. As a result, MSA LLC is largely self-insured for cumulative trauma product liability claims, and additional amounts recorded as insurance receivables or notes receivables will be limited.

When adjustments are made to amounts recorded in the cumulative trauma product liability reserve, we calculate amounts due to be reimbursed pursuant to the terms of the negotiated Coverage-In-Place Agreements, including cumulative trauma product liability losses and related defense costs, and we record the reimbursable amounts as insurance receivables.

Insurance receivables at June 30, 2020, totaled \$58.7 million, of which, \$7.6 million is reported in Prepaid expenses and other current assets in the unaudited Condensed Consolidated Balance Sheet and \$51.1 million is reported in Insurance receivable and other noncurrent assets. Insurance receivables at December 31, 2019, totaled \$63.8 million, of which \$7.6 million was reported in Prepaid expenses and other current assets in the unaudited Condensed Consolidated Balance Sheet and \$56.2 million was reported in Insurance receivable and other noncurrent assets. The vast majority of the \$58.7 million insurance receivable balance at June 30, 2020 is attributable to reimbursement believed to be due under the terms of signed Coverage-In-Place Agreements and a portion of the amount represents the estimated recovery of IBNR amounts not yet incurred.

A summary of insurance receivables balance and activity related to cumulative trauma product liability losses is as follows:

(In millions)	Six Months Ended June 30, 2020	Year Ended December 31, 2019
Balance beginning of period	\$ 63.8	\$ 71.7
Additions	0.6	9.1
Collections and other adjustments	(5.7)	(17.0)
Balance end of period	\$ 58.7	\$ 63.8

In other cases, we have recorded formal notes receivables due from scheduled payment streams according to negotiated settlement agreements.

Notes receivable from insurance companies at June 30, 2020, totaled \$56.7 million, of which \$3.7 million is reported in Notes receivable, insurance companies, current on the unaudited Condensed Consolidated Balance Sheet and \$53.0 million is reported in Notes receivable, insurance companies, noncurrent. Notes receivable from insurance companies at December 31, 2019, totaled \$56.0 million, of which \$3.7 million was reported in Notes receivable, insurance companies, current on the unaudited Condensed Consolidated Balance Sheet and \$52.3 million was reported in Notes receivable, insurance companies, noncurrent.

A summary of notes receivables from insurance companies balance is as follows:

(In millions)	Six Months Ended June 30, 2020	Year Ended December 31, 2019
Balance beginning of period	\$ 56.0	\$ 59.6
Additions	0.7	1.5
Collections	—	(5.1)
Balance end of period	\$ 56.7	\$ 56.0

The collectibility of MSA LLC's insurance receivables and notes receivables is regularly evaluated and we believe that the amounts recorded are probable of collection. The determination that the recorded insurance receivables are probable of collection is based on the terms of the settlement agreements reached with the insurers, our history of collection, and the advice of MSA LLC's outside legal counsel. Various factors could affect the timing and amount of recovery of the insurance and notes receivables, including assumptions regarding various aspects of the composition and characteristics of future claims (which are relevant to calculating reimbursement under the terms of certain Coverage-In-Place Agreements) and the extent to which the issuing insurers may become insolvent in the future.

Product Warranty

The Company provides warranties on certain product sales. Product warranty reserves are established in the same period that revenue from the sale of the related products is recognized, or in the period that a specific issue arises as to the functionality of the Company's product. The determination of such reserves requires the Company to make estimates of product return rates and expected costs to repair or to replace the products under warranty.

The amounts of the reserves are based on established terms and the Company's best estimate of the amounts necessary to settle future and existing claims on products sold as of the balance sheet date. If actual return rates and/or repair and replacement costs differ significantly from estimates, adjustments to recognize additional cost of sales may be required in future periods.

The following table reconciles the changes in the Company's accrued warranty reserve:

(In thousands)	Six Months Ended June 30, 2020	Year Ended December 31, 2019
Beginning warranty reserve	\$ 12,715	\$ 14,214
Warranty payments	(5,404)	(12,664)
Warranty claims	4,828	12,033
Provision for product warranties and other adjustments	(311)	(868)
Ending warranty reserve	\$ 11,828	\$ 12,715

Warranty expense was \$4.5 million and \$5.9 million for the six months ended June 30, 2020 and 2019, respectively, and is included in "Costs of products sold" on the unaudited Condensed Consolidated Statement of Income.

Note 18—Acquisitions

Acquisition of Sierra Monitor Corporation

On May 20, 2019, we acquired 100% of the common stock in Sierra Monitor Corporation ("SMC") in an all-cash transaction valued at \$33.2 million, net of cash acquired. Additionally, we converted outstanding stock options and restricted stock units into MSA stock options and restricted stock units which resulted in additional goodwill of approximately \$0.9 million based on the fair value of the awards identified as transaction consideration.

Based in Milpitas, California, in the heart of Silicon Valley, SMC is a leading provider of fixed gas and flame detection instruments and Industrial Internet of Things solutions that connect and help protect high-value infrastructure assets. The acquisition enables MSA to accelerate its strategy to enhance worker safety and accountability through the use of cloud technology and wireless connectivity. This acquisition enhances a key focus of the Company's recently established Safety io subsidiary, launched in 2018 primarily to leverage the capabilities of its portable gas detection portfolio as it relates to cloud connectivity. The transaction was funded through borrowings on our unsecured senior revolving credit facility. The acquisition qualifies as a business combination and was accounted for using the acquisition method of accounting.

We finalized the purchase price allocation as of December 31, 2019. The following table summarizes the fair values of the SMC assets acquired and liabilities assumed at the date of acquisition:

(In millions)	May 20, 2019
Current assets (including cash of \$2.1 million)	\$ 10.5
Property, plant and equipment and other noncurrent assets	1.3
Customer relationships	9.6
Acquired technology	1.4
Goodwill	19.9
Total assets acquired	42.7
Total liabilities assumed	6.5
Net assets acquired	\$ 36.2

Assets acquired and liabilities assumed in connection with the acquisition have been recorded at their fair values. Fair values were determined by management, based in part on an independent valuation performed by a third-party valuation specialist. The valuation methods used to determine the fair value of intangible assets included the relief from royalty method for technology related intangible assets; the excess earnings approach for customer relationships using customer inputs and contributory charges; and the cost method for assembled workforce which is included in goodwill. A number of significant assumptions and estimates were involved in the application of these valuation methods, including sales volumes and prices, royalty rates, costs to produce, tax rates, capital spending, discount rates, and working capital changes. Cash flow forecasts were generally based on SMC pre-acquisition forecasts coupled with estimated MSA sales synergies. Identifiable intangible assets with finite lives are subject to amortization over their estimated useful lives. The customer relationships acquired in the SMC transaction will be amortized over a period of 10 years and the technology will be amortized over 5 years. Estimated future amortization expense related to the identifiable intangible assets is approximately \$0.6 million for the remainder of 2020, \$1.2 million in each of the next three years, \$1.1 million in 2024 and \$4.2 million thereafter. The step up to fair value of acquired inventory as part of the purchase price allocation totaled \$1.6 million which was fully recognized as amortization expense during the year ended December 31, 2019.

Goodwill is calculated as the excess of the purchase price over the fair value of net assets acquired and represents the future economic benefits arising from other assets acquired that could not be individually identified and separately recognized. Among the factors that contributed to a purchase price in excess of the fair value of the net tangible and intangible assets acquired were the acquisition of an assembled workforce, the expected synergies and other benefits that we believe will result from combining the operations of SMC with our operations. Goodwill of \$19.9 million related to the SMC acquisition has been recorded in the Americas reportable segment and is non-deductible for tax purposes.

Our results for the six months ended June 30, 2020, include \$0.2 million in strategic transaction costs compared to \$2.0 million for the for the six months ended June 30, 2019. These costs are reported in selling, general and administrative expenses.

The operating results of the SMC acquisition have been included in our consolidated financial statements from the acquisition date as part of the Americas reportable segment. Our results for the six months ended June 30, 2020, include SMC sales and net income of \$11.1 million and \$1.4 million, respectively. Excluding purchase accounting amortization for intangible assets of \$0.6 million, adjusted earnings for SMC for the six months ended June 30, 2020, was \$2.0 million.

The following unaudited pro forma information presents our combined results as if the SMC acquisition had occurred on January 1, 2019. The unaudited pro forma financial information was prepared to give effect to events that are (1) directly attributable to the acquisition; (2) factually supportable; and (3) expected to have a continuing impact on the combined company's results. There were no material transactions between MSA and SMC during the period presented that are required to be eliminated. Intercompany transactions between SMC companies during the periods presented have been eliminated in the unaudited pro forma combined financial information. The unaudited pro forma financial information does not reflect any cost savings, operating synergies or revenue enhancements that the combined companies may achieve as a result of the acquisitions or the costs to integrate the operations or the costs necessary to achieve cost savings, operating synergies or revenue enhancements.

(In millions, except per share amounts)	Three months ended June 30, 2019	Six months ended June 30, 2019
Net sales	\$ 352.4	\$ 684.0
Net income	38.7	62.0
Basic earnings per share	1.00	1.61
Diluted earnings per share	0.99	1.58

The unaudited pro forma combined financial information is presented for information purposes only and is not intended to represent or be indicative of the combined results of operations or financial position that we would have reported had the acquisitions been completed as of the date and for the periods presented, and should not be taken as representative of our consolidated results of operations or financial condition following the acquisitions. In addition, the unaudited pro forma combined financial information is not intended to project the future financial position or results of operations of the combined company.

The unaudited pro forma financial information was prepared using the acquisition method of accounting under existing U.S. GAAP. MSA has been treated as the acquirer.

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

The following discussion and analysis should be read in conjunction with the historical financial statements and other financial information included elsewhere in this quarterly report on Form 10-Q. This discussion may contain forward-looking statements that involve risks and uncertainties. The forward-looking statements are not historical facts, but rather are based on current expectations, estimates, assumptions and projections about our industry, business and future financial results. Our actual results could differ materially from the results contemplated by these forward-looking statements due to a number of factors, including those discussed in the sections of our annual report entitled "Forward-Looking Statements" and "Risk Factors," and those discussed in our Form 10-Q quarterly reports filed after such annual report (such as in Part II, Item 1A, "Risk Factors.")

BUSINESS OVERVIEW

MSA is a global leader in the development, manufacture and supply of safety products that protect people and facility infrastructures. Recognized for their market leading innovation, many MSA products integrate a combination of electronics, mechanical systems and advanced materials to protect users against hazardous or life-threatening situations. The Company's comprehensive product line, which is governed by rigorous safety standards across highly regulated industries, is used by workers around the world in a broad range of markets, including fire service, oil, gas and petrochemical industry, construction, industrial manufacturing applications, utilities, mining and the military. MSA's core products include breathing apparatus, fixed gas and flame detection systems, portable gas detection instruments, industrial head protection products, firefighter helmets and protective apparel, and fall protection devices. We are committed to providing our customers with service unmatched in the safety industry and, in the process, enhancing our ability to provide a growing line of safety solutions for customers in key global markets.

MSA provides safety equipment to a broad range of customers who must continue to work in times of global pandemic as is now the case with COVID-19. Our customers include first responders, who are tasked with keeping citizens safe, and include industrial and utility workers tasked with maintaining critical infrastructure. For this reason, in order to successfully fulfill our mission as The Safety Company, MSA is an essential business and has continued operating its manufacturing facilities during these times, to the extent practicable, while protecting the health and safety of our workforce, and complying with all applicable laws. The Company has established a special advisory committee to evaluate ongoing concerns, risks and challenges with respect to COVID-19 across its operations and corporate headquarters in January 2020. The Company's pandemic response plan includes four key priorities: protecting the health and safety of MSA associates, enabling business continuity, expanding manufacturing capacity of MSA's existing air-purifying respirator portfolio, and managing its operating expenses and capital structure.

During the second quarter the Company developed a thoughtful, phased approach to begin reconnecting segments of our workforce that had converted to remote working conditions due to COVID-19. This process includes reengaging elements of our salesforce in in-person customer interactions on a limited basis, with additional functions scheduled to begin returning to the office, once deemed appropriate under the circumstances for each geography. A phased approach to reconnect employees while adjusting the characteristics of their physical working environments, providing training and executing enhanced safety and cleaning protocols, will promote workplace safety. The process and timing to reconnect our workforce will continue to evolve due to the changing nature of COVID-19, and the Company expects to modify plans as necessary to respond to such changes.

We tailor our product offerings and distribution strategy to satisfy distinct customer preferences that vary across geographic regions. On January 1, 2020, to best serve these customer preferences, we restructured our business from six geographical operating segments into four: Northern North America, Latin America, Europe, Middle East & Africa ("EMEA"), and Asia Pacific ("APAC"). These four operating segments are further aggregated into three reportable geographic segments: Americas, International and Corporate. This change did not impact reportable segments as all changes were within the International segment. In 2019, 65% and 35% of our net sales were made by our Americas and International segments, respectively.

Americas. Our largest manufacturing and research and development facilities are located in the United States (U.S.). We serve our markets across the Americas with manufacturing facilities in the U.S., Mexico and Brazil. Operations in the other countries within the Americas segment focus primarily on sales and distribution in their respective home country markets.

International. Our International segment includes companies in Europe, the Middle East and the Asia Pacific region. In our largest International subsidiaries (in Germany, France, United Kingdom (U.K.), Ireland and China), we develop, manufacture and sell a wide variety of products. In China, the products manufactured are sold primarily in China as well as in regional markets. Operations in other International segment countries focus primarily on sales and distribution in their respective home country markets. Although some of these companies may perform limited production, most of their sales are of products manufactured in our plants in Germany, France, the U.S., U.K., Ireland and China or are purchased from third-party vendors.

Corporate. The Corporate segment primarily consists of general and administrative expenses incurred in our corporate headquarters, costs associated with corporate development initiatives, legal expense, interest expense, foreign exchange gains or losses and other centrally-managed costs. Corporate general and administrative costs comprise the majority of the expense in the Corporate segment.

PRINCIPAL PRODUCTS

The following is a brief description of each of our principal product categories:

MSA's corporate strategy includes a focus on driving sales of core products where we have leading market positions and a distinct competitive advantage. Core products, as mentioned above, include breathing apparatus, fixed gas and flame detection systems, portable gas detection instruments, industrial head protection products, firefighter helmets and protective apparel, and fall protection devices. Core products comprised approximately 85% and 88% of sales for the six months ended June 30, 2020 and 2019. MSA also maintains a portfolio of non-core products. Non-core products reinforce and extend the core offerings, drawing upon our customer relationships, distribution channels, geographical presence and technical experience. These products are complementary to the core offerings and often reflect more episodic or contract-driven growth patterns. Key non-core products include air-purifying respirators ("APR"), eye and face protection, ballistic helmets and gas masks.

MSA does not produce disposable respirators of any type; however, Mine Safety Appliances Company, LLC ("MSA LLC"), one of the Company's subsidiaries, does produce advanced elastomeric APR, including half-mask respirators, full-facepiece respirators and powered air purifying respirators, each with replaceable filters providing a minimum of N-95 filtration capability. These products have historically been used in many industrial and first responder applications. APR products represented 9% of our consolidated sales in the first half of 2020 with approximately 75% of this business being in our Americas segment. In the first quarter, Emergency Use Authorizations ("EUA") were issued by the FDA to expand the types of respiratory protection available to the medical community in response to COVID-19. Those include an EUA that temporarily permits the use of NIOSH-approved respirators in healthcare settings, including elastomeric APR that are part of MSA's existing portfolio. MSA LLC is committed to increasing production of masks within the existing portfolio to support our customer base and other response efforts.

MSA maintains a diversified portfolio of safety products that protect workers and facility infrastructure across a broad array of end markets. While the company sells its products through distribution, which can limit end-user visibility, the company provides estimated ranges of end market exposure to facilitate understanding of its growth drivers. The company estimates that approximately 35%-40% of its overall revenue is derived from the fire service market and 25%-30% of its revenue is derived from the energy market. The remaining 30%-40% is split between construction, utilities, general industrial applications, military and mining.

A detailed listing of our significant product offerings in the aforementioned product groups above is included in MSA's Annual Report on Form 10-K for the year ended December 31, 2019.

RESULTS OF OPERATIONS

Three Months Ended June 30, 2020, Compared to Three Months Ended June 30, 2019

Net Sales. Net sales for the three months ended June 30, 2020, were \$314.4 million, a decrease of \$35.3 million, or 10.1%, driven by lower sales across most of the core product groups compared to \$349.7 million for the three months ended June 30, 2019. Please refer to the Net Sales table for a reconciliation of the quarter over quarter sales change.

Net Sales (In millions)	Three Months Ended June 30,		Dollar Decrease	Percent Decrease
	2020	2019		
Consolidated	\$314.4	\$349.7	\$(35.3)	(10.1)%
Americas	204.2	231.4	(27.2)	(11.8)%
International	110.2	118.3	(8.1)	(6.8)%

Net Sales (Percent Change)	Three Months Ended June 30, 2020 versus June 30, 2019		
	Americas	International	Consolidated
GAAP reported sales change	(11.8)%	(6.8)%	(10.1)%
Currency translation effects	2.3%	2.5%	2.3%
Constant currency sales change	(9.5)%	(4.3)%	(7.8)%

Note: Constant currency sales change is a non-GAAP financial measure provided by the Company to give a better understanding of the Company's underlying business performance. Constant currency sales change is calculated by deducting the percentage impact from currency translation effects from the overall percentage change in net sales.

Net sales for the Americas segment were \$204.2 million in the second quarter of 2020, a decrease of \$27.2 million, or 11.8%, compared to \$231.4 million in the second quarter of 2019. During the quarter, constant currency sales in the Americas segment decreased 9.5% compared to the prior year period, driven by weakness across most of our portfolio due to the fallout from the COVID-19 pandemic. Employment based industrial PPE products such as head protection, fall protection and portable gas detection experienced challenges based on high unemployment rates and closed worksites, down 33%. The decline was partially offset by increased sales of air purifying respirators ("APR"). The Company's subsidiary, MSA LLC, continues to ramp up production of APR in its Jacksonville, NC plant and expects to work down its backlog in this area over the next several quarters.

Net sales for the International segment were \$110.2 million in the second quarter of 2020, a decrease of \$8.1 million, or 6.8%, compared to \$118.3 million for the second quarter of 2019. Constant currency sales in the International segment decreased 4.3% during the quarter as sales in the EMEA region were down 6.6% driven by general business weakness due to the disruption to the business stemming from the COVID-19 pandemic. This decrease was partially offset by an increase in sales of head protection and breathing apparatus products across a number of geographies, including China, where sales increased by 9.5%. Incoming orders in China were up 16% in the quarter reflecting improved business conditions.

Our incoming orders have been choppy throughout the second quarter and remain that way into the third quarter. We started the quarter strongly in April, followed by a weak May. We then saw a rebound in the order book in June with a slow down again in July with the virus resurgence and related economic challenges. There is a great deal of uncertainty in the economy and the Company's key end markets which makes it difficult to provide an outlook for the second half of the year. These conditions could impact our future results and growth expectations.

Our backlog continues to be healthy, and is consistent with the first quarter, but we remain disciplined in managing our cost structure and executing on long term margin improvement projects. We have been proactive managing through a challenging environment, and we are committed to continuing that approach. We are well positioned to manage through and emerge from this downturn as a stronger organization.

Refer to Note 8—Segment Information to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q, for information regarding sales by product group.

Gross profit. Gross profit for the second quarter of 2020 was \$141.6 million, a decrease of \$19.5 million or 12.1%, compared to \$161.1 million for the second quarter of 2019. The ratio of gross profit to net sales was 45.0% in the second quarter of 2020 compared to 46.1% in the same quarter last year. The lower gross profit ratio during the current quarter is primarily attributable to higher costs related to COVID-19, driven by lower throughput in our factories, higher freight costs and implementing COVID-19 safety protocols across our worksites, coupled with a less favorable mix, partially offset by strategic pricing improvements particularly in our International segment.

Selling, general and administrative expenses. Selling, general and administrative ("SG&A") expenses were \$69.0 million during the second quarter of 2020, a decrease of 15.0 million or 17.8%, compared to \$84.0 million in the second quarter of 2019. Overall, selling, general and administrative expenses were 22.0% of net sales during the second quarter of 2020, compared to 24.0% of net sales during the same period in 2019. The decrease was the result of returns from previously executed restructuring programs and discretionary cost controls implemented in March 2020, in response to the COVID-19 pandemic and slowdown in certain end markets. These actions provided approximately \$6 million of cost savings in the quarter. Additionally, a decrease in variable compensation expense related to bonus and performance-based stock awards provided approximately \$5 million of cost savings.

Please refer to the Selling, general and administrative expenses table for a reconciliation of the period over period expense change.

Selling, general, and administrative expenses (Percent Change)	Three Months Ended June 30, 2020 versus June 30, 2019 Consolidated
GAAP reported change	(17.8)%
Currency translation effects	1.9%
Constant currency change	(15.9)%
Less: Acquisitions and related strategic transaction costs	1.9%
Organic constant currency change	(14.0)%

Note: Organic constant currency change is a non-GAAP financial measure provided by the Company to give a better understanding of the Company's underlying business performance. Organic constant currency change in selling, general, and administrative expenses is calculated by deducting the percentage impact from acquisitions and related strategic transaction costs as well as the currency translation effects from the overall percentage change in selling, general, and administrative expense. Management believes excluding acquisitions and currency translation effects provides investors with a greater level of clarity into spending levels on a year-over-year basis.

Research and development expense. Research and development expense was \$13.8 million during the second quarter of 2020, a decrease of \$0.5 million, compared to \$14.3 million during the second quarter of 2019. Research and development expense was 4.4% of net sales in the second quarter of 2020 compared to 4.1% in the same period of 2019. During the second quarter of 2020, we capitalized \$2 million of software development costs.

Restructuring charges. Restructuring charges during the second quarter of 2020, were \$8.9 million primarily related to footprint rationalization projects including the Company's Fixed Gas & Flame Detection ("FGFD") manufacturing footprint optimization and the acceleration of cost reduction programs associated with our ongoing initiatives to drive profitable growth in our International segment. This compared to restructuring charges of \$3.5 million during the second quarter of 2019, primarily related to a non-cash settlement charge associated with the closure of our pension plan in the U.K. as well as footprint rationalization and other restructuring programs associated with our ongoing initiatives to drive profitable growth in our International segment. We remain focused on executing programs that will optimize our cost structure.

Currency exchange. Currency exchange losses were \$0.8 million in the second quarter of 2020 compared to \$1.3 million in the second quarter of 2019. Currency exchange losses in both periods were related to foreign currency exposure on unsettled inter-company balances.

Refer to Note 15—Derivative Financial Instruments to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q, for information regarding our currency exchange rate risk management strategy.

Product liability expense. Product liability expense for the three months ended June 30, 2020 was \$0.9 million compared to \$3.5 million in the same period last year. Product liability expense for both periods related primarily to defense costs incurred for cumulative trauma product liability claims.

GAAP operating income. Consolidated operating income for the second quarter of 2020 was \$48.3 million compared to \$54.5 million in the same period last year. The decrease in operating results was driven by lower sales volumes and lower gross profit for the reasons noted above and increased restructuring charges partially offset by improved SG&A expense leverage.

Adjusted operating income. Americas adjusted operating income for the second quarter of 2020 was \$49.0 million, a decrease of \$8.7 million, or 15%, compared to \$57.7 million in the prior year quarter. The decrease was related to the lower level of sales and lower gross profit for reasons noted above, which were partially offset by improved SG&A leverage. Sales for the quarter declined 12% as compared to the prior year while SG&A expenses declined 18%.

International adjusted operating income for the second quarter of 2020 was \$17.4 million, an increase of \$2.3 million, or 15%, compared to \$15.1 million in the prior year quarter. The increase in adjusted operating income is primarily attributable to selling, general and administrative costs being down over 10% as we realize returns from restructuring programs executed over the past 12 to 18 months and strategic pricing improvements which more than offset the decrease in sales volumes.

Corporate segment adjusted operating loss for the second quarter of 2020 was \$7.5 million, a decrease of \$0.9 million, or 10%, compared to an adjusted operating loss of \$8.4 million in the second quarter of 2019 due to lower professional service and other expenses due to cost control initiatives.

The following tables represent a reconciliation from GAAP operating income to adjusted operating income (loss) and adjusted EBITDA. Adjusted operating margin % is calculated as adjusted operating income (loss) divided by net sales and adjusted EBITDA margin % is calculated as adjusted EBITDA divided by net sales.

Adjusted operating income (In thousands)	Three Months Ended June 30, 2020			
	Americas	International	Corporate	Consolidated
Net sales	\$ 204,231	\$ 110,207	\$ —	\$ 314,438
GAAP operating income				48,294
Restructuring charges (Note 4)				8,865
Currency exchange losses, net (Note 6)				793
Product liability expense (Note 17)				851
Strategic transaction costs (Note 18)				64
Adjusted operating income (loss)	49,003	17,402	(7,538)	58,867
Adjusted operating margin %	24.0 %	15.8 %		
Depreciation and amortization				9,786
Adjusted EBITDA	55,620	20,474	(7,441)	68,653
Adjusted EBITDA %	27.2 %	18.6 %		

Adjusted operating income (In thousands)	Three Months Ended June 30, 2019			
	Americas	International	Corporate	Consolidated
Net sales	\$ 231,389	\$ 118,286	\$ —	\$ 349,675
GAAP operating income				54,478
Restructuring charges (Note 4)				3,522
Currency exchange losses, net (Note 6)				1,290
Product liability expense (Note 17)				3,529
Strategic transaction costs (Note 18)				1,529
Adjusted operating income (loss)	57,689	15,072	(8,413)	64,348
Adjusted operating margin %	24.9 %	12.7 %		
Depreciation and amortization				9,466
Adjusted EBITDA	63,842	18,288	(8,316)	73,814
Adjusted EBITDA %	27.6 %	15.5 %		

Note: Adjusted operating income (loss) and adjusted EBITDA are a non-GAAP financial measures used by the chief operating decision maker to evaluate segment performance and allocate resources. Adjusted operating income (loss) is reconciled above to the nearest GAAP financial measure, Operating income (loss), and excludes restructuring, currency exchange, product liability expense, and strategic transaction costs. Adjusted EBITDA is reconciled above to the nearest GAAP financial measure, Operating income (loss) and excludes depreciation and amortization expense.

Total other expense, net. Total other expense, net, for the second quarter of 2020 was \$0.5 million, compared to \$1.1 million for the same period in 2019, primarily due to lower interest expense, partially offset by lower pension income driven by lower discount rates and lower expected rate of return.

Income taxes. The reported effective tax rate for the second quarter of 2020 was 23.9% compared to 24.8% for the second quarter of 2019. This decrease from the prior year is attributable to lower US tax on foreign operations and tax benefits on certain share-based payments, partially offset by an increase in state income taxes.

We are subject to regular review and audit by both foreign and domestic tax authorities. While we believe our tax positions will be sustained, the final outcome of tax audits and related litigation may differ materially from the tax amounts recorded in our consolidated financial statements.

Net income attributable to MSA Safety Incorporated. Net income was \$36.1 million for the second quarter of 2020, or \$0.92 per diluted share compared to income of \$39.8 million, or \$1.01 per diluted share, for the same period last year.

Six Months Ended June 30, 2020 Compared to Six Months Ended June 30, 2019

Net Sales. Net sales for the six months ended June 30, 2020, were \$655.6 million, a decrease of \$20.1 million, or 3.0%, compared to \$675.7 million for the six months ended June 30, 2019. Please refer to the Net Sales table for a reconciliation of the period over period sales change.

Net Sales (In millions)	Six Months Ended June 30,		Dollar Decrease	Percent Decrease
	2020	2019		
Consolidated	\$655.6	\$675.7	\$(20.1)	(3.0)%
Americas	435.5	445.1	(9.6)	(2.2)%
International	220.1	230.6	(10.5)	(4.6)%

Net Sales (Percent Change)	Six Months Ended June 30, 2020 versus June 30, 2019		
	Americas	International	Consolidated
GAAP reported sales change	(2.2)%	(4.6)%	(3.0)%
Currency translation effects	1.9%	2.8%	2.2%
Constant currency sales change	(0.3)%	(1.8)%	(0.8)%

Note: Constant currency sales change is a non-GAAP financial measure provided by the Company to give a better understanding of the Company's underlying business performance. Constant currency sales change is calculated by deducting the percentage impact from currency translation effects from the overall percentage change in net sales.

Net sales for the Americas segment were \$435.5 million during the six months ended June 30, 2020, a decrease of \$9.6 million, or 2.2%, compared to \$445.1 million during the same period last year. During the six months ended June 30, 2020, constant currency sales in the Americas segment decreased 0.3% compared to the prior year period, driven by weakness in most of our end markets due to the second quarter shutdowns tied to the COVID-19 pandemic, which was partially offset by notable increases in APR.

Net sales for the International segment were \$220.1 million during the six months ended June 30, 2020, a decrease of \$10.5 million, or 4.6%, compared to \$230.6 million during the same period last year. Constant currency sales in the International segment decreased 1.8% during the period. Weaker fall protection and portable gas detection product sales in the EMEA region were only partially offset by higher breathing apparatus and industrial head protection sales. APAC sales declined across our core product groups driven by the shutdowns tied to the COVID-19 pandemic earlier in the year.

Refer to Note 8—Segment Information to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q, for information regarding sales by product group.

Gross profit. Gross profit for the six months ended June 30, 2020, was \$299.0 million, a decrease of \$12.1 million or 3.9%, compared to \$311.1 million during the same period last year. The ratio of gross profit to net sales was 45.6% in the six months ended June 30, 2020, compared to 46.0% during the same period last year. The lower gross profit ratio during the six month period is primarily attributable to higher costs related to COVID-19, driven by lower throughput in our factories, higher freight costs and implementing COVID-19 safety protocols across our worksites, coupled with a less favorable mix, partially offset by strategic pricing improvements, particularly in our International segment.

Selling, general and administrative expenses. SG&A expenses were \$149.3 million during the six months ended June 30, 2020, a decrease of \$13.1 million or 8.1%, compared to \$162.4 million during the same period last year. Overall, selling, general and administrative expenses were 22.8% of net sales during the six months ended June 30, 2020, compared to 24.0% of net sales during the same period in 2019. The decrease was the result of returns from previously executed restructuring programs and discretionary cost controls implemented in March 2020, in response to the COVID-19 pandemic and slowdown in certain end markets. These actions provided approximately \$7 million of cost savings in the six month period. Additionally, a decrease in variable compensation expense related to bonus and performance-based stock awards provided approximately \$5 million of cost savings.

Please refer to the Selling, general and administrative expenses table for a reconciliation of the period over period expense change.

Selling, general, and administrative expenses (Percent Change)	Six Months Ended June 30, 2020 versus June 30, 2019 Consolidated
GAAP reported change	(8.1)%
Currency translation effects	1.9%
Constant currency change	(6.2)%
Less: Acquisitions and related strategic transaction costs	0.1%
Organic constant currency change	(6.1)%

Note: Organic constant currency change is a non-GAAP financial measure provided by the Company to give a better understanding of the Company's underlying business performance. Organic constant currency change in selling, general, and administrative expenses is calculated by deducting the percentage impact from acquisitions and related strategic transaction costs as well as the currency translation effects from the overall percentage change in selling, general, and administrative expense. Management believes excluding acquisitions and currency translation effects provides investors with a greater level of clarity into spending levels on a year-over-year basis.

Research and development expense. Research and development expense was \$27.9 million during the six months ended June 30, 2020 compared to \$28.0 million during the same period last year. Research and development expense was 4.3% of net sales in the six months ended June 30, 2020, compared to 4.1% in the same period of 2019. We launched the Altair io 360 Gas Detector, an area monitor that operates with the simplicity of a smart-home device during the first quarter. During the six months ended June 30, 2020, we capitalized \$4.0 million of software development costs.

Restructuring charges. Restructuring charges during the six months ended June 30, 2020, were \$10.9 million, primarily related to footprint rationalization projects including the Company's FGFD manufacturing footprint optimization and the acceleration of cost reduction programs associated with our ongoing initiatives to drive profitable growth in our International segment. This compared to restructuring charges of \$9.4 million during the same period in 2019, primarily related to a non-cash settlement charge associated with the closure of our pension plan in the U.K. as well as footprint rationalization and other restructuring programs associated with our ongoing initiatives to drive profitable growth in our International segment. We remain focused on executing programs that will optimize our cost structure.

Currency exchange. Currency exchange losses were \$1.1 million in the six months ended June 30, 2020, compared to \$18.3 million in the same period of 2019. The decrease in currency exchange losses from prior year was primarily due to the recognition of non-cash cumulative translation losses of approximately \$15.4 million during the first quarter of 2019 as a result of the approval of our plan to close our South Africa subsidiaries. This charge is related to the historical translation of the elements of the financial statements for the business from the functional currency to the U.S. Dollar. The translation impact has been historically recorded as currency translation adjustment ("CTA"), a separate component of accumulated other comprehensive loss within the equity section of the unaudited Condensed Consolidated Balance Sheet.

Refer to Note 15—Derivative Financial Instruments to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q, for information regarding our currency exchange rate risk management strategy.

Product liability expense. Product liability expense for the six months ended June 30, 2020, was \$2.8 million compared to \$6.4 million in the same period last year. Product liability expense for both periods related primarily to defense costs incurred for cumulative trauma product liability claims.

GAAP operating income. Consolidated operating income for the six months ended June 30, 2020, was \$107.1 million compared to \$86.6 million in the same period last year. The increase in operating results was primarily driven by lower currency exchange losses and improved SG&A leverage. On a consolidated basis, SG&A expenses declined by 8% while sales only declined 3%.

Adjusted operating income. Americas adjusted operating income for the six months ended June 30, 2020, was \$108.8 million, a decrease of \$3.7 million, or 3.3%, compared to \$112.5 million in the prior year. The decrease was related to the lower level of sales partially offset by improved SG&A leverage. Sales for the six month period declined by 2% as compared to prior year while SG&A expenses declined 5%.

International adjusted operating income for the six months ended June 30, 2020, was \$30.1 million, an increase of \$4.0 million, or 15.2%, compared to \$26.1 million in the prior year. The increase in adjusted operating income is primarily attributable to selling, general and administrative costs being down 10%, as we realize returns from restructuring programs executed over the past 12 to 18 months, and strategic pricing improvements which more than offset the 5% decrease in sales.

Corporate segment adjusted operating loss for the six months ended June 30, 2020, was \$16.2 million, an increase of \$0.2 million, or 1.3%, compared to an adjusted operating loss of \$16.0 million in the same period of 2019 due primarily to increased costs associated with the implementing COVID-19 safety protocols.

The following tables represent a reconciliation from GAAP operating income to adjusted operating income (loss) and adjusted EBITDA. Adjusted operating margin % is calculated as adjusted operating income (loss) divided by net sales and adjusted EBITDA margin % is calculated as adjusted EBITDA divided by net sales.

Adjusted operating income (In thousands)	Six Months Ended June 30, 2020			
	Americas	International	Corporate	Consolidated
Net sales	\$ 435,484	\$ 220,099	\$ —	\$ 655,583
GAAP operating income				107,076
Restructuring charges (Note 4)				10,872
Currency exchange losses, net (Note 6)				1,063
Product liability expense (Note 17)				2,802
Strategic transaction costs (Note 18)				161
COVID-19 related costs				757
Adjusted operating income (loss)	108,811	30,073	(16,153)	122,731
Adjusted operating margin %	25.0 %	13.7 %		
Depreciation and amortization				19,428
Adjusted EBITDA	121,878	36,239	(15,958)	142,159
Adjusted EBITDA %	28.0 %	16.5 %		

Adjusted operating income (In thousands)	Six Months Ended June 30, 2019			
	Americas	International	Corporate	Consolidated
Net sales	\$ 445,076	\$ 230,637	\$ —	\$ 675,713
GAAP operating income				86,638
Restructuring charges (Note 4)				9,353
Currency exchange losses, net (Note 6)				18,251
Product liability expense (Note 17)				6,425
Strategic transaction costs (Note 18)				1,985
Adjusted operating income (loss)	112,492	26,112	(15,952)	122,652
Adjusted operating margin %	25.3 %	11.3 %		
Depreciation and amortization				18,792
Adjusted EBITDA	124,742	32,459	(15,757)	141,444
Adjusted EBITDA %	28.0 %	14.1 %		

Note: Adjusted operating income (loss) and adjusted EBITDA are a non-GAAP financial measures used by the chief operating decision maker to evaluate segment performance and allocate resources. Adjusted operating income (loss) is reconciled above to the nearest GAAP financial measure, Operating income (loss), and excludes restructuring, currency exchange, product liability expense, strategic transaction costs and COVID-19 related costs, consisting of a one-time bonus for essential manufacturing employees. Adjusted EBITDA is reconciled above to the nearest GAAP financial measure, Operating income (loss) and excludes depreciation and amortization expense.

Total other expense, net. Total other expense, net, for the six months ended June 30, 2020, was \$2.3 million, compared to \$0.9 million for the same period in 2019, primarily due to lower pension income driven by lower discount rates and lower expected rate of return partially offset by lower interest expense.

Income taxes. The reported effective tax rate for the six months ended June 30, 2020, was 23.4% compared to 25.9% for the same period in 2019. This decrease from the prior year is attributable to a large non-deductible loss in 2019 related to foreign exchange on entity closures and a decrease in benefits related to certain share-based payments, partially offset by an increase in state income taxes. The adjusted effective tax rate, which excludes the tax benefit associated with ASU 2016-09, *Improvements to Employee Share-Based Payment Accounting*, is expected to be in the range of 24% – 25% for the full year ending December 31, 2020.

We are subject to regular review and audit by both foreign and domestic tax authorities. While we believe our tax positions will be sustained, the final outcome of tax audits and related litigation may differ materially from the tax amounts recorded in our consolidated financial statements.

Net income attributable to MSA Safety Incorporated. Net income was \$79.7 million for the six months ended June 30, 2020, or \$2.03 per diluted share compared to income of \$63.0 million, or \$1.61 per diluted share, for the same period in 2019.

Non-GAAP Financial Information

We may provide information regarding financial measures such as organic constant currency changes, financial measures excluding the impact of acquisitions and related strategic transaction costs, COVID-19 related costs, consisting of a one-time bonus for essential manufacturing employees and adjusted operating income, adjusted operating margin percentage, adjusted EBITDA and adjusted EBITDA margin percentage, which are not recognized terms under U.S. GAAP and do not purport to be alternatives to net sales, selling, general and administrative expense, operating income or net income as a measure of operating performance. We believe that the use of these non-GAAP financial measures provide investors with additional useful information and provide a more complete understanding of the underlying results. Because not all companies use identical calculations, these presentations may not be comparable to similarly titled measures from other companies. For more information about these non-GAAP measures and a reconciliation to the nearest U.S. GAAP measure, please refer to the reconciliations referenced above in Management's Discussion & Analysis section and in Note 8—Segment Information to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q.

We may also provide financial information on a constant currency basis, which is a non-GAAP financial measure. These references to a constant currency basis do not include operational impacts that could result from fluctuations in foreign currency rates, which are outside of management's control. To provide information on a constant currency basis, the applicable financial results are adjusted by translating current and prior period results in local currency to a fixed foreign exchange rate. This approach is used for countries where the functional currency is the local country currency. This information is provided so that certain financial results can be viewed without the impact of fluctuations in foreign currency rates, thereby facilitating period-to-period comparisons of business performance. Constant currency information is not recognized under U.S. GAAP and it is not intended as an alternative to U.S. GAAP measures.

LIQUIDITY AND CAPITAL RESOURCES

Our primary source of liquidity is operating cash flows, supplemented by borrowings. Our principal liquidity requirements are for working capital, capital expenditures, principal and interest payments on debt, dividend payments and acquisitions. At June 30, 2020, approximately 32% of our long-term debt is at fixed interest rates with repayment schedules through 2031. The remainder of our long-term debt is at variable rates on an unsecured revolving credit facility that is due in 2023. At June 30, 2020, approximately 78% of our borrowings are denominated in U.S. dollars, which limits our exposure to currency exchange rate fluctuations.

At June 30, 2020, the Company had cash, cash equivalents and restricted cash totaling \$136.6 million, including \$109.2 million held by our foreign subsidiaries, and access to sufficient capital, providing ample liquidity and flexibility to continue to maintain our balanced capital allocation strategy. We believe MSA's healthy balance sheet and access to significant capital at June 30, 2020, positions us well to navigate through the COVID-19 pandemic and challenging business conditions.

Cash, cash equivalents and restricted cash decreased \$16.0 million during the six months ended June 30, 2020, compared to decreasing \$28.6 million during the same period in 2019. We continue to employ a balanced capital allocation strategy that prioritizes growth investments, funding our dividend and servicing debt obligations.

Operating activities. Operating activities provided cash of \$83.0 million during the six months ended June 30, 2020, compared to providing \$37.5 million during the same period in 2019. The improved operating cash flow during the period was related to a lower use of cash for working capital as improvements related to accounts receivable and accounts payable were only partially offset by increased inventory levels to support our backlog levels. Also contributing to the increase in operating cash flows during the period were lower product liability payments. Our collections from insurance companies exceeded payments for product liability claims by \$1.1 million, in the six months ended June 30, 2020, compared to product liability payments of \$22.9 million, net of collections on insurance receivables, in the same period of 2019. Historically, cumulative trauma liability payments were funded with the Company's operating cash flow, pending resolution of disputed insurance coverage. For more than a decade, we have funded product liability settlements from operating cash flow. The vast majority of the insurance receivable and notes receivable - insurance companies balances at June 30, 2020, is attributable to reimbursement believed to be due under the terms of signed agreements with insurers and are not currently subject to litigation. While the timing of cash flows for product liability and insurance receivable can and do vary from quarter to quarter, we have been successful in establishing cash flow streams that have allowed us to fund these liabilities without a material impact on our capital allocation priorities.

On March 25, 2020, the U.S. Senate passed the Coronavirus Aid, Relief, and Economic Security Act, (the "CARES Act"). The CARES Act includes a number of tax provisions relevant to business. As permitted under the CARES Act, MSA deferred estimated payments of U.S. income taxes of approximately \$14 million to July 15, 2020. As is also permitted under the CARES Act, MSA will defer the remittance of the employer portion of the social security tax. The social security tax provision requires that the deferred employment tax be paid over the following two years, with half of the amount required to be paid by December 31, 2021 and the other half by December 31, 2022. We expect to defer approximately \$6 million of payments related to the employer's portion of social security tax in 2020.

Investing activities. Investing activities used cash of \$29.2 million during the six months ended June 30, 2020, compared to using \$63.9 million during the same period in 2019. Capital expenditures and the purchase of short-term investments, net of proceeds from maturities drove cash outflows from investing activities during the six months ended June 30, 2020, while the acquisition of Sierra Monitor Corporation, purchase of short-term investments, net of proceeds from maturities and capital expenditures drove cash outflows from investing activities during the same period in 2019. During 2020, we incurred capital expenditures of \$19.8 million, including \$4.0 million associated with software development and other growth programs, compared to capital expenditures of \$13.5 million, including \$1.9 million associated with software development and other growth programs, in the same period in 2019. MSA LLC, one of the Company's subsidiaries, is continuing to ramp up the capacity for its APR production in the U.S. in response to demand created by the global pandemic. MSA LLC has increased its available workforce for APR production and expects to invest between \$11 million to \$13 million of capital expenditures to modernize and improve our APR production capacity in the U.S. Approximately \$5 million has been spent on this project through June 30, 2020. The Company expects to invest between \$45 million to \$50 million in total capital expenditures for the full year ending December 31, 2020.

Financing activities. Financing activities used cash of \$66.2 million during the six months ended June 30, 2020, compared to using \$1.3 million during the same period in 2019. During the six months ended June 30, 2020, we had net payments on long-term debt of \$9.0 million as compared to net proceeds of \$37.0 million during the same period in 2019. We paid cash dividends of \$33.1 million during the six months ended June 30, 2020, compared to \$30.9 million in the same period in 2019. We also used cash of \$28.3 million during the six months ended June 30, 2020 to repurchase shares, including \$20.1 million related to purchases under our 2015 stock repurchase program, compared to using \$11.0 million during the same period in 2019.

CUMULATIVE TRANSLATION ADJUSTMENTS

The position of the U.S. dollar relative to international currencies at June 30, 2020, resulted in a translation loss of \$18.2 million being recorded to the cumulative translation adjustments shareholders' equity account during the six months ended June 30, 2020, compared to no net translation adjustments during the same period in 2019.

Brexit has caused, and may continue to create, volatility in global stock markets and regional and global economic uncertainty particularly in the U.K. financial and banking markets. Weakening of economic conditions or economic uncertainties tend to harm our business, and if such conditions worsen in the U.K. or in the rest of Europe, it may have an adverse effect on our consolidated operations and sales. The Company continues to monitor the economic situation related to Brexit and current analysis indicates that exposure in our supply chain related to additional duties and sourcing costs is not material. We have approximately \$45 million of annual sales denominated in the British pound which are subject to exchange rate risk associated with any volatility in the British pound. We have long-term debt of \$73.3 million at June 30, 2020, that is denominated in British pounds. Because the debt is denominated in local currency, the value of the debt and local cash flows are aligned with respect to movements in the exchange rate between the British pound and U.S. dollar.

COMMITMENTS AND CONTINGENCIES

We made contributions of \$3.8 million to our pension plans during the six months ended June 30, 2020. We expect to make total contributions of approximately \$7.6 million to our pension plans in 2020 which are primarily associated with our International segment.

The Company had outstanding bank guarantees and standby letters of credit with banks as of June 30, 2020, totaling \$9.6 million, of which \$1.9 million related to the senior revolving credit facility. These letters of credit serve to cover customer requirements in connection with certain sales orders and insurance companies. The Company is also required to provide cash collateral in connection with certain arrangements. At June 30, 2020, the Company has \$0.4 million of restricted cash in support of these arrangements.

We have purchase commitments for materials, supplies, services, and property, plant and equipment as part of our ordinary conduct of business.

Please refer to Note 17—Contingencies to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q for further discussion on the Company's single incident and cumulative trauma product liabilities.

CRITICAL ACCOUNTING POLICIES AND ESTIMATES

We prepare our consolidated financial statements in accordance with accounting principles generally accepted in the United States of America (U.S. GAAP). The preparation of these consolidated financial statements requires us to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues and expenses, and the related disclosures. We evaluate these estimates and judgments on an on-going basis based on historical experience and various assumptions that we believe to be reasonable under the circumstances. However, different amounts could be reported if we had used different assumptions and in light of different facts and circumstances. Actual amounts could differ from the estimates and judgments reflected in our condensed consolidated financial statements.

The more critical judgments and estimates used in the preparation of our consolidated financial statements are discussed in Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations in our Annual Report on Form 10-K for the year ended December 31, 2019.

RECENTLY ADOPTED AND RECENTLY ISSUED ACCOUNTING STANDARDS

Please refer to Note 2— Recently Adopted and Recently Issued Accounting Standards to the unaudited condensed consolidated financial statements in Part I Item 1 of this Form 10-Q.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

Market risk represents the risk of adverse changes in the value of a financial instrument caused by changes in currency exchange rates, interest rates and equity prices. We are exposed to market risks related to currency exchange rates and interest rates.

Currency exchange rate sensitivity. We are subject to the effects of fluctuations in currency exchange rates on various transactions and on the translation of the reported financial position and operating results of our non-U.S. companies from local currencies to U.S. dollars. A hypothetical 10% strengthening or weakening of the U.S. dollar would decrease or increase our reported sales and net income by approximately \$13.4 million or 4% and \$1.1 million or 3%, respectively, for the three months ended June 30, 2020.

When appropriate, we may attempt to limit our transactional exposure to changes in currency exchange rates through forward contracts or other actions intended to reduce existing exposures by creating offsetting currency exposures. At June 30, 2020, we had open foreign currency forward contracts with a U.S. dollar notional value of \$77.8 million. A hypothetical 10% strengthening or weakening of the U.S. dollar would result in a \$7.8 million increase or decrease in the fair value of these contracts at June 30, 2020.

Interest rates. We are exposed to changes in interest rates primarily as a result of borrowing and investing activities used to maintain liquidity and fund business operations.

At June 30, 2020, we had \$108.1 million of fixed rate debt which matures at various dates through 2031. The incremental increase in the fair value of fixed rate long-term debt resulting from a hypothetical 10% decrease in interest rates would be approximately \$8.3 million. However, our sensitivity to interest rate declines and the corresponding increase in the fair value of our debt portfolio would unfavorably affect earnings and cash flows only to the extent that we elected to repurchase or retire all or a portion of our fixed rate debt portfolio at prices above carrying values.

At June 30, 2020, we had \$227.7 million of variable rate borrowings under our revolving credit facility. A 100 basis point increase or decrease in interest rates could impact our future earnings under our current capital structure.

Item 4. Controls and Procedures

- (a) *Evaluation of disclosure controls and procedures.* Based on their evaluation as of the end of the period covered by this Form 10-Q, the Company's principal executive officer and principal financial officer have concluded that the Company's disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934 (the "Exchange Act")) are effective to ensure that information required to be disclosed by the Company in reports that it files or submits under the Exchange Act is (i) recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and (ii) accumulated and communicated to our management, including the principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.
- (b) *Changes in internal control.* There were no changes in the Company's internal control over financial reporting that occurred during the most recent fiscal quarter that have materially affected, or are reasonably likely to materially affect, the Company's internal control over financial reporting.

PART II. OTHER INFORMATION

Item 1A. Risk Factors

Claims of injuries from our products, product defects or recalls of our products could have a material adverse effect on our business, operating results, financial condition and liquidity.

MSA and its subsidiaries face an inherent business risk of exposure to product liability claims arising from the alleged failure of our products to prevent the types of personal injury or death against which they are designed to protect. In the event the parties using our products are injured or any of our products prove to be defective, we could be subject to claims with respect to such injuries. In addition, we may be required to or may voluntarily recall or redesign certain products that could potentially be harmful to end users. Any claim or product recall that results in significant expense or negative publicity against us could have a material adverse effect on our business, operating results, financial condition and liquidity, including any successful claim brought against us in excess or outside of available insurance coverage.

Our subsidiary, Mine Safety Appliances Company, LLC, may experience losses from cumulative trauma product liability claims. The inability to collect insurance receivables and the transition to becoming largely self-insured for cumulative trauma product liability claims could have a material adverse effect on our business, operating results, financial condition and liquidity.

Our subsidiary, Mine Safety Appliances Company, LLC (“MSA LLC”) was named as a defendant in 1,705 cumulative trauma lawsuits comprised of 2,655 claims at June 30, 2020. Cumulative trauma product liability claims involve exposures to harmful substances (e.g., silica, asbestos and coal dust) that occurred years ago and may have developed over long periods of time into diseases such as silicosis, asbestosis, mesothelioma or coal worker’s pneumoconiosis. The products at issue were manufactured many years ago and are not currently offered by MSA LLC. A reserve has been established with respect to estimated amounts for cumulative trauma product liability claims currently asserted but not yet resolved and incurred but not reported (“IBNR”) cumulative trauma product liability claims. Because our cumulative trauma product liability risk is subject to inherent uncertainties, including unfavorable trial rulings or developments, an increase in newly filed claims, or more aggressive settlement demands, and since MSA LLC is largely self-insured, there can be no certainty that MSA LLC may not ultimately incur losses in excess of presently recorded liabilities. These losses could have a material adverse effect on our business, operating results, financial condition and liquidity.

We will adjust the reserve from time to time based on whether the actual numbers, types and settlement values of claims asserted differ from current projections and estimates or there are significant changes in the facts underlying the assumptions used in establishing the reserve. Each of these factors may increase or decrease significantly within an individual period depending on, among other things, the timing of claims filings or settlements, or litigation outcomes during a particular period that are especially favorable or unfavorable to MSA LLC. We accordingly consider MSA LLC’s claims experience over multiple periods and/or whether there are changes in MSA LLC’s claims experience and trends that are likely to continue for a significant time into the future in determining whether to make an adjustment to the reserve, rather than evaluating such factors solely in the short term. Any future adjustments to the reserve may be material and could materially impact future periods in which the reserve is adjusted.

In the normal course of business, MSA LLC makes payments to settle these types of cumulative trauma product liability claims and for related defense costs, and records receivables for the amounts believed to be recoverable under insurance. MSA LLC has recorded insurance receivables totaling \$58.7 million and notes receivables of \$56.7 million at June 30, 2020. Since MSA LLC is now largely self-insured for cumulative trauma claims, additional amounts recorded as insurance receivables will be limited and based on calculating the amounts to be reimbursed pursuant to negotiated Coverage-in-Place Agreements. Various factors could affect the timing and amount of recovery of the insurance receivables, including assumptions regarding claims composition (which are relevant to calculating reimbursement under the terms of certain Coverage-In-Place Agreements) and the extent to which the issuing insurers may become insolvent in the future.

Pandemics or disease outbreaks, such as COVID-19, may cause unfavorable economic or market conditions which could impact demand patterns and/or disrupt global supply chains and manufacturing operations. Collectively, these outcomes could materially and adversely affect our business, results of operations and financial condition.

Pandemics or disease outbreaks such as the novel coronavirus (COVID-19) could result in a widespread health crisis that could adversely affect the economies of developed and emerging markets, potentially resulting in an economic downturn that could affect customers' demand for our products in certain industrial-based end-markets. The spread of pandemics or disease outbreaks may also disrupt the company's manufacturing operations, supply chain, or logistics necessary to import, export and deliver products to our customers. During a pandemic or crisis, applicable laws and response directives could, in some circumstances, adversely affect our ability to operate our plants, or to deliver our products in a timely manner. Some laws and directives may also hinder our ability to move certain products across borders. Economic conditions can also influence order patterns. These factors could negatively impact our consolidated results of operations and cash flow.

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

(c) Issuer Purchases of Equity Securities

Period	Total Number of Shares Purchased	Average Price Paid Per Share	Total Number of Shares Purchased As Part of Publicly Announced Plans or Programs	Maximum Number of Shares That May Yet Be Purchased Under the Plans or Programs
April 2020	—	\$ —	—	514,214
May 2020	1,823	117.27	—	484,738
June 2020	2,742	110.58	—	514,453

The share repurchase program authorizes up to \$100.0 million in repurchases of MSA common stock in the open market and in private transactions. The share purchase program has no expiration date. The maximum shares that may be purchased is calculated based on the dollars remaining under the program and the respective month-end closing share price.

Shares purchased during the quarter relate to stock compensation transactions.

We do not have any other share repurchase programs.

Item 6. Exhibits

(a) Exhibits

31.1 [Certification of Chief Executive Officer pursuant to Rule 13a-14\(a\)](#)

31.2 [Certification of Chief Financial Officer pursuant to Rule 13a-14\(a\)](#)

32 [Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. \(S\)1350](#)

101.INS XBRL Instance Document

101.SCH XBRL Taxonomy Extension Schema Document

101.CAL XBRL Taxonomy Extension Calculation Linkbase Document

101.DEF XBRL Taxonomy Extension Definition Linkbase Document

101.LAB XBRL Taxonomy Extension Label Linkbase Document

101.PRE XBRL Taxonomy Extension Presentation Linkbase Document

SIGNATURE

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.

MSA SAFETY INCORPORATED

July 30, 2020

/s/ Kenneth D. Krause

Kenneth D. Krause

Sr. Vice President, Chief Financial Officer and Treasurer
Duly Authorized Officer and Principal Financial Officer

/s/ Jonathan D. Buck

Jonathan D. Buck

Chief Accounting Officer

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO RULE 13a-14(a)

I, Nishan J. Vartanian, certify that:

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

July 30, 2020

/s/ Nishan J. Vartanian

Nishan J. Vartanian

President and Chief Executive Officer

CERTIFICATION OF CHIEF FINANCIAL OFFICER PURSUANT TO RULE 13a-14(a)

I, Kenneth D. Krause certify that:

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

July 30, 2020

/s/ Kenneth D. Krause

Kenneth D. Krause

Sr. Vice President, Chief Financial Officer and Treasurer

CERTIFICATION

Pursuant to 18 U.S.C. (S) 1350, the undersigned officers of MSA Safety Incorporated (the “Company”), hereby certify, to the best of their knowledge, that the Company’s Quarterly Report on Form 10-Q for the quarter ended June 30, 2020 (the “Report”) fully complies with the requirements of Section 13 (a) or 15 (d), as applicable, of the Securities Exchange Act of 1934 and that the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

July 30, 2020

/s/ Nishan J. Vartanian

Nishan J. Vartanian

President and Chief Executive Officer

/s/ Kenneth D. Krause

Kenneth D. Krause

Sr. Vice President, Chief Financial Officer and Treasurer