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

FORM 10-Q

(Mark One)

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

For The Quarterly Period Ended September 30, 2019

OR

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

For the Transition Period from ______________ to ______________

Commission File Number: 1-4639

CTS CORPORATION

(Exact name of registrant as specified in its charter)

IN	**35-0225010**
(State or other jurisdiction of incorporation or organization)	**(IRS Employer Identification Number)**
4925 Indiana Avenue	
Lisle IL	**60532**
(Address of principal executive offices)	**(Zip Code)**

Registrant's telephone number, including area code: (630) 577-8800

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

Title of Each Class	Trading Symbol(s)	Name of Each Exchange on Which Registered
Common stock, without par value	CTS	New York Stock Exchange

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

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

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

Large accelerated filer ☒ Accelerated filer ☐ Non-accelerated filer ☐ Smaller reporting 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 ☒

Indicate the number of shares outstanding of each of the issuer's classes of common stock, as of October 21, 2019: 32,601,889.

CTS CORPORATION AND SUBSIDIARIES

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PART I - FINANCIAL INFORMATION

Item 1. Financial Statements

CTS CORPORATION AND SUBSIDIARIES

CONDENSED CONSOLIDATED STATEMENTS OF EARNINGS - UNAUDITED

(In thousands, except per share amounts)

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Net sales	$ 115,651	$ 118,859	$ 353,959	$ 350,410
Cost of goods sold	78,594	76,777	235,084	228,082
Gross Margin	37,057	42,082	118,875	122,328
Selling, general and administrative expenses	17,774	18,450	52,371	55,441
Research and development expenses	6,806	6,517	19,854	19,500
Restructuring charges	2,342	997	5,337	3,364
Loss (gain) on sale of assets	11	—	(111)	2
Operating earnings	10,124	16,118	41,424	44,021
Other income (expense):				
Interest expense	(812)	(489)	(1,745)	(1,601)
Interest income	524	413	1,396	1,367
Other expense, net	(2,636)	(1,687)	(3,646)	(2,557)
Total other expense, net	(2,924)	(1,763)	(3,995)	(2,791)
Earnings before income taxes	7,200	14,355	37,429	41,230
Income tax expense	4,478	4,144	11,345	12,262
Net earnings	$ 2,722	$ 10,211	$ 26,084	$ 28,968
Earnings per share:				
Basic	$ 0.08	$ 0.31	$ 0.80	$ 0.88
Diluted	$ 0.08	$ 0.30	$ 0.79	$ 0.86
Basic weighted – average common shares outstanding:	32,642	33,087	32,748	33,038
Effect of dilutive securities	425	562	417	542
Diluted weighted – average common shares outstanding:	33,067	33,649	33,165	33,580
Cash dividends declared per share	$ 0.04	$ 0.04	$ 0.12	$ 0.12

See notes to unaudited condensed consolidated financial statements.

CTS CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME - UNAUDITED
(In thousands of dollars)

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Net earnings	$ 2,722	$ 10,211	$ 26,084	$ 28,968
Other comprehensive income:				
Changes in fair market value of derivatives, net of tax	(740)	624	(956)	1,498
Changes in unrealized pension cost, net of tax	1,017	1,157	3,065	3,513
Cumulative translation adjustment, net of tax	(92)	1	(88)	(131)
Other comprehensive income	$ 185	$ 1,782	$ 2,021	$ 4,880
Comprehensive income	$ 2,907	$ 11,993	$ 28,105	$ 33,848

See notes to unaudited condensed consolidated financial statements.

CTS CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED BALANCE SHEETS
(In thousands of dollars)

	(Unaudited) September 30, 2019	December 31, 2018
ASSETS		
Current Assets		
Cash and cash equivalents	$ 101,199	$ 100,933
Accounts receivable, net	80,789	79,518
Inventories, net	45,425	43,486
Other current assets	17,616	15,422
Total current assets	245,029	239,359
Property, plant and equipment, net	102,636	99,401
Operating lease assets, net	24,520	—
Other Assets		
Prepaid pension asset	57,447	54,100
Goodwill	108,142	71,057
Other intangible assets, net	86,506	60,180
Deferred income taxes	20,990	22,201
Other	2,731	2,043
Total other assets	275,816	209,581
Total Assets	$ 648,001	$ 548,341
LIABILITIES AND SHAREHOLDERS' EQUITY		
Current Liabilities		
Accounts payable	$ 48,434	$ 51,975
Operating lease obligations	2,677	—
Accrued payroll and benefits	11,218	14,671
Accrued liabilities	38,222	37,347
Total current liabilities	100,551	103,993
Long-term debt	112,700	50,000
Long-term operating lease obligations	24,879	—
Long-term pension and other post-retirement obligations	6,294	6,510
Deferred income taxes	3,745	3,990
Other long-term obligations	4,638	5,919
Total Liabilities	252,807	170,412
Commitments and Contingencies (Note 10)		
Shareholders' Equity		
Common stock	307,801	306,697
Additional contributed capital	42,849	42,820
Retained earnings	501,003	478,847
Accumulated other comprehensive loss	(95,718)	(97,739)
Total shareholders' equity before treasury stock	755,935	730,625
Treasury stock	(360,741)	(352,696)
Total shareholders' equity	395,194	377,929
Total Liabilities and Shareholders' Equity	$ 648,001	$ 548,341

See notes to unaudited condensed consolidated financial statements.

CTS CORPORATION AND SUBSIDIARIES
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS - UNAUDITED
(In thousands of dollars)

	Nine Months Ended September 30, 2019	Nine Months Ended September 30, 2018
CASH FLOWS FROM OPERATING ACTIVITIES:		
Net earnings	$ 26,084	$ 28,968
Adjustments to reconcile net earnings to net cash provided by operating activities:		
Depreciation and amortization	18,038	16,349
Pension and other post-retirement plan expense	752	318
Stock-based compensation	3,950	4,104
Restructuring impairment charges	1,100	—
Deferred income taxes	466	2,794
(Gain) loss on sales of fixed assets	(111)	2
Loss (gain) on foreign currency hedges, net of cash	79	(56)
Changes in assets and liabilities, net of acquisition:		
Accounts receivable	385	(9,228)
Inventories	1,925	(6,045)
Operating lease assets	(2,454)	—
Other assets	(3,153)	(417)
Accounts payable	(3,534)	4,761
Accrued payroll and benefits	(3,921)	1,224
Accrued liabilities	(4,806)	1,674
Income taxes payable	2,540	(1,510)
Operating lease liabilities	2,764	—
Other liabilities	844	(145)
Pension and other post-retirement plans	(213)	(233)
Net cash provided by operating activities	40,735	42,560
CASH FLOWS FROM INVESTING ACTIVITIES:		
Capital expenditures	(15,299)	(20,800)
Proceeds from sale of assets	137	1
Payments for acquisitions, net of cash acquired	(73,588)	—
Net cash used in investing activities	(88,750)	(20,799)
CASH FLOWS FROM FINANCING ACTIVITIES:		
Payments of long-term debt	(995,500)	(910,100)
Proceeds from borrowings of long-term debt	1,058,200	883,800
Purchase of treasury stock	(8,045)	—
Dividends paid	(3,934)	(3,962)
Taxes paid on behalf of equity award participants	(2,653)	(1,433)
Net cash provided by (used) in financing activities	48,068	(31,695)
Effect of exchange rate changes on cash and cash equivalents	213	116
Net increase (decrease) in cash and cash equivalents	266	(9,818)
Cash and cash equivalents at beginning of period	100,933	113,572
Cash and cash equivalents at end of period	$ 101,199	$ 103,754
Supplemental cash flow information:		
Cash paid for interest	$ 1,208	$ 1,302
Cash paid for income taxes, net	$ 7,622	$ 8,517
Non-cash financing and investing activities:		
Capital expenditures incurred but not paid	$ 3,711	$ 3,944

See notes to unaudited condensed consolidated financial statements.

CTS CORPORATION AND SUBSIDIARIES
Condensed Consolidated Statements of Shareholders' Equity - Unaudited
(in thousands of dollars)

The following summarizes the changes in total equity for the three and nine months ended September 30, 2018:

	Common Stock	Additional Contributed Capital	Retained Earnings	Accumulated Other Comprehensive Earnings/(Loss)	Treasury Stock	Total
Balances at December 31, 2017	$ 304,777	$ 41,084	$ 420,160	$ (78,960)	$ (343,256)	$ 343,805
Net earnings	—	—	11,548	—	—	11,548
Changes in fair market value of derivatives, net of tax	—	—	—	807	—	807
Changes in unrealized pension cost, net of tax	—	—	—	1,107	—	1,107
Cumulative translation adjustment, net of tax	—	—	—	243	—	243
Cash dividends of $0.04 per share	—	—	(1,320)	—	—	(1,320)
Issued shares on vesting of restricted stock units	945	(2,368)	—	—	—	(1,423)
Stock compensation	—	965	—	—	—	965
Balances at March 31, 2018	$ 305,722	$ 39,681	$ 430,388	$ (76,803)	$ (343,256)	$ 355,732
Net earnings	—	—	7,209	—	—	7,209
Changes in fair market value of derivatives, net of tax	—	—	—	67	—	67
Changes in unrealized pension cost, net of tax	—	—	—	1,249	—	1,249
Cumulative translation adjustment, net of tax	—	—	—	(375)	—	(375)
Cash dividends of $0.04 per share	—	—	(1,323)	—	—	(1,323)
Issued shares on vesting of restricted stock units	848	(853)	—	—	—	(5)
Stock compensation	—	1,206	—	—	—	1,206
Balances at June 30, 2018	$ 306,570	$ 40,034	$ 436,274	$ (75,862)	$ (343,256)	$ 363,760
Net earnings	—	—	10,211	—	—	10,211
Changes in fair market value of derivatives, net of tax	—	—	—	624	—	624
Changes in unrealized pension cost, net of tax	—	—	—	1,157	—	1,157
Cumulative translation adjustment, net of tax	—	—	—	1	—	1
Cash dividends of $0.04 per share	—	—	(1,325)	—	—	(1,325)
Issued shares on vesting of restricted stock units	4	(8)	—	—	—	(4)
Stock compensation	—	1,781	—	—	—	1,781
Balances at September 30, 2018	$ 306,574	$ 41,807	$ 445,160	$ (74,080)	$ (343,256)	$ 376,205

See notes to unaudited condensed consolidated financial statements.

CTS CORPORATION AND SUBSIDIARIES
Condensed Consolidated Statements of Shareholders' Equity - Unaudited (continued)
(in thousands of dollars)

The following summarizes the changes in total equity for the three and nine months ended September 30, 2019:

	Common Stock	Additional Contributed Capital	Retained Earnings	Accumulated Other Comprehensive Earnings/(Loss)	Treasury Stock	Total
Balances at December 31, 2018	$ 306,697	$ 42,820	$ 478,847	$ (97,739)	$ (352,696)	$ 377,929
Net earnings	—	—	11,419	—	—	11,419
Changes in fair market value of derivatives, net of tax	—	—	—	78	—	78
Changes in unrealized pension cost, net of tax	—	—	—	1,022	—	1,022
Cumulative translation adjustment, net of tax	—	—	—	91	—	91
Cash dividends of $0.04 per share	—	—	(1,315)	—	—	(1,315)
Acquired 31,500 shares for treasury stock	—	—	—	—	(849)	(849)
Issued shares on vesting of restricted stock units	967	(3,603)	—	—	—	(2,636)
Stock compensation	—	1,154	—	—	—	1,154
Balances at March 31, 2019	$ 307,664	$ 40,371	$ 488,951	$ (96,548)	$ (353,545)	$ 386,893
Net earnings	—	—	11,943	—	—	11,943
Changes in fair market value of derivatives, net of tax	—	—	—	(294)	—	(294)
Changes in unrealized pension cost, net of tax	—	—	—	1,026	—	1,026
Cumulative translation adjustment, net of tax	—	—	—	(87)	—	(87)
Cash dividends of $0.04 per share	—	—	(1,309)	—	—	(1,309)
Acquired 148,466 shares for treasury stock	—	—	—	—	(4,153)	(4,153)
Issued shares on vesting of restricted stock units	111	(111)	—	—	—	—
Stock compensation	—	1,526	—	—	—	1,526
Balances at June 30, 2019	$ 307,775	$ 41,786	$ 499,585	$ (95,903)	$ (357,698)	$ 395,545
Net earnings	—	—	2,722	—	—	2,722
Changes in fair market value of derivatives, net of tax	—	—	—	(740)	—	(740)
Changes in unrealized pension cost. net of tax	—	—	—	1,017	—	1,017
Cumulative translation adjustment, net of tax	—	—	—	(92)	—	(92)
Cash dividends of $0.04 per share	—	—	(1,304)	—	—	(1,304)
Acquired 106,760 shares of treasury stock	—	—	—	—	(3,043)	(3,043)
Issued shares on vesting of restricted stock units	26	(41)	—	—	—	(15)
Stock compensation	—	1,104	—	—	—	1,104
Balances at September 30, 2019	$ 307,801	$ 42,849	$ 501,003	$ (95,718)	$ (360,741)	$ 395,194

See notes to unaudited condensed consolidated financial statements.

NOTES TO CONDENSED CONSOLIDATED FINANCIAL STATEMENTS - UNAUDITED
(in thousands except for share and per share data)
September 30, 2019

NOTE 1—Basis of Presentation

The accompanying condensed consolidated financial statements have been prepared by CTS Corporation (“CTS” "we", "our", "us" or the "Company”), without audit, pursuant to the rules and regulations of the Securities and Exchange Commission. Certain information and footnote disclosures normally included in financial statements prepared in accordance with generally accepted accounting principles have been omitted pursuant to such rules and regulations. The unaudited condensed consolidated financial statements should be read in conjunction with the financial statements, notes thereto, and other information included in the Company’s Annual Report on Form 10-K for the year ended December 31, 2018.

The accompanying unaudited condensed consolidated financial statements reflect, in the opinion of management, all adjustments (consisting of normal recurring items) necessary for a fair statement, in all material respects, of the financial position and results of operations for the periods presented. The preparation of financial statements in conformity with generally accepted accounting principles requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities, the disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reported period. Actual results could differ materially from those estimates. The results of operations for the interim periods are not necessarily indicative of the results for the entire year.

Changes in Accounting Principles

Beginning in January 2019, CTS adopted the provisions of Accounting Standards Update ("ASU") 2016-02, "Leases *(Topic 842)*" under the optional transition method, which requires, if necessary, a cumulative effect adjustment to the opening balance of retained earnings. The lease liability is based on the present value of minimum lease payments discounted using our secured incremental borrowing rate at the date of adoption. Existing deferred rent liabilities, resulting from our historical practice of using the straight line method for recognizing lease expense, were reclassified upon adoption to reduce the measurement of the lease assets. We elected the package of practical expedients permitted under the transition guidance, which among other things, allows us to carry forward the historical accounting relating to lease identification and classification for existing leases at adoption. Our leases are classified as operating leases and expense is recorded in a manner similar to historical accounting guidance. We have also elected the practical expedient to not separate lease and non-lease components for the majority of our leases and the election to keep leases with an initial term of 12 months or less off of the balance sheet. Upon adoption we recorded a lease liability of $24,792 and a right of use asset of $22,066. No adjustment to the opening balance of retained earnings was required.

Subsequent Events

We have evaluated subsequent events and transactions for potential recognition or disclosure in the financial statements through the date the condensed consolidated financial statements are issued.

NOTE 2 – Revenue Recognition

The core principle of Topic 606 is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services. The guidance provides a five-step process to achieve that core principle:

- Identify the contract(s) with a customer
- Identify the performance obligations
- Determine the transaction price
- Allocate the transaction price
- Recognize revenue when the performance obligations are met

We recognize revenue when the performance obligations specified in our contracts have been satisfied, after considering the impact of variable consideration and other factors that may affect the transaction price. Our contracts normally contain a single performance obligation that is fulfilled on the date of delivery based on shipping terms stipulated in the contract. We usually expect payment within 30 to 90 days from the shipping date, depending on our terms with the customer. None of our contracts as of September 30, 2019, contained a significant financing component. Differences between the amount of revenue recognized and the amount invoiced, collected from, or paid to our customers are recognized as contract assets or liabilities. Contract assets will be reviewed for impairment when events or circumstances indicate that they may not be recoverable.

To the extent the transaction price includes variable consideration, we estimate the amount of variable consideration that should be included in the transaction price utilizing the most likely amount method based on an analysis of historical experience and current facts and circumstances, which requires significant judgment. Variable consideration is included in the transaction price if, in our judgment, it is probable that a significant future reversal of cumulative revenue under the contract will not occur.

Contract Assets and Liabilities

Contract assets and liabilities included in our Condensed Consolidated Balance Sheets are as follows:

	As of	
	September 30, 2019	**December 31, 2018**
Contract Assets		
Prepaid rebates included in Other current assets	$ 65	$ 65
Prepaid rebates included in Other assets	1,498	999
Total Contract Assets	$ 1,563	$ 1,064
Contract Liabilities		
Customer discounts and price concessions included in Accrued liabilities	$ (1,892)	$ (1,656)
Customer rights of return and other liabilities included in Accrued liabilities	(857)	(325)
Total Contract Liabilities	$ (2,749)	$ (1,981)

During the three and nine months ended September 30, 2019, we recognized revenues of $125 and $231, respectively, for amounts that were included in contract liabilities at the beginning of the period.

Disaggregated Revenue

The following table presents revenues disaggregated by the major markets we serve:

	Three Months Ended		Nine Months Ended	
	September 30, 2019	**September 30, 2018**	**September 30, 2019**	**September 30, 2018**
Aero & Defense	$ 9,025	$ 5,692	$ 23,536	$ 16,819
Industrial	19,750	22,675	57,406	65,804
Medical	10,537	10,259	29,176	29,293
Telecom & IT	4,780	5,049	13,098	15,099
Transportation	71,559	75,184	230,743	223,395
Total	$ 115,651	$ 118,859	$ 353,959	$ 350,410

NOTE 3 – Accounts Receivable

The components of accounts receivable are as follows:

	As of	
	September 30, 2019	**December 31, 2018**
Accounts receivable, gross	$ 80,984	$ 79,902
Less: Allowance for doubtful accounts	(195)	(384)
Accounts receivable, net	$ 80,789	$ 79,518

NOTE 4 – Inventories

Inventories consist of the following:

	As of	
	September 30, 2019	December 31, 2018
Finished goods	$ 9,686	$ 10,995
Work-in-process	15,091	12,129
Raw materials	25,790	25,746
Less: Inventory reserves	(5,142)	(5,384)
Inventories, net	$ 45,425	$ 43,486

NOTE 5 – Property, Plant and Equipment

Property, plant and equipment is comprised of the following:

	As of	
	September 30, 2019	December 31, 2018
Land	$ 1,131	$ 1,136
Buildings and improvements	73,715	70,522
Machinery and equipment	232,955	231,619
Less: Accumulated depreciation	(205,165)	(203,876)
Property, plant and equipment, net	$ 102,636	$ 99,401

Depreciation expense for the nine months ended September 30, 2019	$ 12,657
Depreciation expense for the nine months ended September 30, 2018	$ 11,227

NOTE 6 – Retirement Plans

Pension Plans

Net pension expense for our domestic and foreign plans included in other income (expense) in the condensed consolidated statement of earnings is as follows:

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Net pension expense	$ 250	$ 77	$ 749	$ 234

The components of net pension expense for our domestic and foreign plans include the following:

	Domestic Pension Plans		Foreign Pension Plans	
	Three Months Ended		Three Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Service cost	$ —	$ —	$ 9	$ 11
Interest cost	1,931	1,781	8	10
Expected return on plan assets(1)	(3,046)	(3,225)	(4)	(6)
Amortization of loss	1,311	1,466	41	40
Total expense, net	$ 196	$ 22	$ 54	$ 55

(1) Expected return on plan assets is net of expected investment expenses and certain administrative expenses.

	Domestic Pension Plans		Foreign Pension Plans	
	Nine Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Service cost	$ —	$ —	$ 27	$ 33
Interest cost	5,793	5,343	23	32
Expected return on plan assets[1]	(9,140)	(9,675)	(13)	(19)
Amortization of loss	3,934	4,398	125	122
Total expense, net	$ 587	$ 66	$ 162	$ 168

(1) Expected return on plan assets is net of expected investment expenses and certain administrative expenses.

Other Post-retirement Benefit Plan

Net post-retirement expense for our other post-retirement plan includes the following components:

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Service cost	$ —	$ —	$ 1	$ 1
Interest cost	42	39	127	117
Amortization of gain	(42)	(11)	(125)	(34)
Total expense, net	$ —	$ 28	$ 3	$ 84

NOTE 7 – Goodwill and Other Intangible Assets

Intangible assets consist of the following components:

	As of September 30, 2019		
	Gross Carrying Amount	Accumulated Amortization	Net Amount
Customer lists/relationships	$ 94,223	$ (39,888)	$ 54,335
Technology and other intangibles	46,260	(16,289)	29,971
In process research and development	2,200	—	2,200
Other intangible assets, net	$ 142,683	$ (56,177)	$ 86,506
Amortization expense for the three months ended September 30, 2019		$ 1,999	
Amortization expense for the nine months ended September 30, 2019		$ 5,381	

	As of December 31, 2018		
	Gross Carrying Amount	Accumulated Amortization	Net Amount
Customer lists/relationships	$ 64,323	$ (37,088)	$ 27,235
Technology and other intangibles	44,460	(13,715)	30,745
In process research and development	2,200	—	2,200
Other intangible assets, net	$ 110,983	$ (50,803)	$ 60,180
Amortization expense for the three months ended September 30, 2018		$ 1,698	
Amortization expense for the nine months ended September 30, 2018		$ 5,122	

Remaining amortization expense for other intangible assets as of September 30, 2019 is as follows:

	Amortization expense
2019	$ 2,152
2020	8,479
2021	8,322
2022	8,085
2023	6,079
Thereafter	53,389
Total amortization expense	$ 86,506

Changes in the net carrying value amount of goodwill were as follows:

	Total
December 31, 2018	$ 71,057
Increase from acquisition	37,085
September 30, 2019	$ 108,142

NOTE 8 – Costs Associated with Exit and Restructuring Activities

Costs associated with exit and restructuring activities are recorded in the Condensed Consolidated Statement of Earnings as a separate component of Operating earnings.

Total restructuring charges is as follows:

	Three Months Ended	
	September 30, 2019	September 30, 2018
Restructuring charges	$ 2,342	$ 997

	Nine Months Ended	
	September 30, 2019	September 30, 2018
Restructuring charges	$ 5,337	$ 3,364

2016 Plan

In June 2016, we announced plans to restructure operations by phasing out production at our Elkhart facility and transitioning it into a research and development center supporting our global operations ("June 2016 Plan"). Additional organizational changes were also implemented in various other locations. During the third quarter of 2017, we revised the June 2016 Plan. The amendment added an additional $1,100 in planned costs related to the relocation of our corporate headquarters in Lisle, IL and our plant in Bolingbrook, IL, both of which have now been consolidated into a single facility. The total restructuring liability under the June 2016 Plan was $333 at September 30, 2019, and $668 at December 31, 2018. Additional costs related to production line movements, equipment charges, and other costs will be expensed as incurred.

The following table displays the planned restructuring charges associated with the June 2016 Plan as well as a summary of the actual costs incurred through September 30, 2019:

June 2016 Plan	Planned Costs	Actual costs incurred through September 30, 2019
Workforce reduction	$ 3,075	$ 3,310
Building and equipment relocation	9,025	10,262
Other charges[(1)]	1,300	2,088
Total restructuring charges	$ 13,400	$ 15,660

(1) Other charges includes the effects of currency translation, non-cash asset write-downs and other charges.

2014 Plan

In April 2014, we announced plans to restructure our operations and consolidate our Canadian operations into other existing facilities as part of our overall plan to simplify our business model and rationalize our global footprint ("April 2014 Plan"). These restructuring actions were completed in 2015. The remaining restructuring liability related to the April 2014 Plan was $693 at September 30, 2019, and $918 at December 31, 2018.

Other Restructuring Activities

Beginning in Q3 2019, we incurred restructuring charges of $1,671 for exit and disposal activities at three facilities, of which $800 was related to a lease termination charge resulting from our acquisition of Quality Thermistor, Inc. (see Note 19) and $871 was related to workforce and building relocation costs at two foreign facilities. The total remaining restructuring liability associated with these actions was $752 at September 30, 2019.

The following table displays the restructuring liability activity for all plans for the nine months ended September 30, 2019:

Restructuring liability at January 1, 2019	$ 1,586
Restructuring charges	5,337
Cost paid	(3,534)
Other activity[(1)]	(1,611)
Restructuring liability at September 30, 2019	$ 1,778

(1) Other activity includes the effects of currency translation, non-cash asset write-downs and other charges that do not flow through restructuring expense.

NOTE 9 – Accrued Liabilities

The components of accrued liabilities are as follows:

	As of	
	September 30, 2019	December 31, 2018
Accrued product related costs	$ 4,594	$ 4,377
Accrued income taxes	9,365	6,914
Accrued property and other taxes	1,880	1,976
Accrued professional fees	1,589	3,350
Contract liabilities	2,749	1,981
Dividends payable	1,304	1,310
Remediation reserves	9,945	11,274
Other accrued liabilities	6,796	6,165
Total accrued liabilities	$ 38,222	$ 37,347

NOTE 10 – Commitments and Contingencies

Certain processes in the manufacture of our current and past products create by-products classified as hazardous waste. We have been notified by the U.S. Environmental Protection Agency, state environmental agencies, and in some cases, groups of potentially responsible parties, that we may be potentially liable for environmental contamination at several sites currently and formerly owned or operated by us. Two of those sites, Asheville, North Carolina and Mountain View, California, are designated National Priorities List sites under the U.S. Environmental Protection Agency's Superfund program. We accrue a liability for probable remediation activities, claims and proceedings against us with respect to environmental matters if the amount can be reasonably estimated, and provide disclosures including the nature of a loss whenever it is probable or reasonably possible that a potentially material loss may have occurred but cannot be estimated. We record contingent loss accruals on an undiscounted basis.

In the opinion of management, based upon presently available information relating to such matters, adequate provision for probable and estimable losses have been recorded. Due to the inherent nature of environmental obligations, we cannot provide assurance that our ultimate environmental liability will not materially exceed the amount of our accrued losses.

A roll-forward of remediation reserves included in accrued liabilities on the balance sheet is comprised of the following:

	As of	
	September 30, 2019	December 31, 2018
Balance at beginning of period	$ 11,274	$ 17,067
Remediation expense	323	1,182
Net remediation payments	(1,645)	(6,967)
Other activity[(1)]	(7)	(8)
Balance at end of the period	$ 9,945	$ 11,274

[(1)] Other activity includes currency translation adjustments not recorded through remediation expense.

Unrelated to the environmental claims described above, certain other claims are pending against us with respect to matters arising in the ordinary conduct of our business. Although the ultimate outcome of any potential litigation resulting from these claims cannot be predicted with certainty, and some may be disposed of unfavorably to us, we believe that adequate provision for probable and estimable costs have been established based upon all presently available information.

Except as noted herein, we do not believe we have any pending loss contingencies that are probable or reasonably possible of having a material impact on our consolidated financial position, results of operations, or cash flows. Our accrued liabilities and disclosures will be adjusted accordingly if additional information becomes available in the future.

NOTE 11 - Debt

Long-term debt is comprised of the following:

	As of	
	September 30, 2019	December 31, 2018
Total credit facility	$ 300,000	$ 300,000
Balance outstanding	112,700	50,000
Standby letters of credit	1,800	1,940
Amount available	$ 185,500	$ 248,060
Weighted-average interest rate	3.41%	3.10%
Commitment fee percentage per annum	0.20%	0.20%

On February 12, 2019, we entered into an amended and restated five-year Credit Agreement with a group of banks (the "Credit Agreement") to extend the term of the facility. The Credit Agreement provides for a revolving credit facility of $300,000, which may be increased by $150,000 at the request of the Company, subject to the administrative agent's approval. This new unsecured credit facility replaces the prior $300,000 unsecured credit facility, which would have expired August 10, 2020. Borrowings of $50,000 under the prior credit agreement were refinanced into the Credit Agreement. The prior agreement was terminated as of February 12, 2019.

The Revolving Credit Facility includes a swing line sublimit of $15,000 and a letter of credit sublimit of $10,000. Borrowings under the Revolving Credit Facility bear interest at the base rate defined in the Credit Agreement. We also pay a quarterly commitment fee on the unused portion of the Revolving Credit Facility. The commitment fee ranges from 0.20% to 0.30% based on the our total leverage ratio.

The Revolving Credit Facility requires, among other things, that we comply with a maximum total leverage ratio and a minimum fixed charge coverage ratio. Failure to comply with these covenants could reduce the borrowing availability under the Revolving Credit Facility. We were in compliance with all debt covenants at September 30, 2019. The Revolving Credit Facility requires that we deliver quarterly financial statements, annual financial statements, auditor certifications, and compliance certificates within a specified number of days after the end of a quarter and year. Additionally, the Revolving Credit Facility contains restrictions limiting our ability to: dispose of assets; incur certain additional debt; repay other debt or amend subordinated debt instruments; create liens on assets; make investments, loans or advances; make acquisitions or engage in mergers or consolidations; engage in certain transactions with our subsidiaries and affiliates; and make stock repurchases and dividend payments. Interest rates on the Revolving Credit Facility fluctuate based upon the LIBOR and the Company's quarterly total leverage ratio.

We have debt issuance costs related to our long-term debt that are being amortized using the straight-line method over the life of the debt. Amortization expense was approximately $42 and $46 for the three months ended September 30, 2019 and 2018, respectively, and approximately $121 and $139 for the nine months ended September 30, 2019 and 2018, respectively. These costs are included in interest expense in our Condensed Consolidated Statement of Earnings.

Note 12 - Derivative Financial Instruments

Our earnings and cash flows are subject to fluctuations due to changes in foreign currency exchange rates and interest rates. We selectively use derivative financial instruments including foreign currency forward contracts and interest rate swaps to manage our exposure to these risks.

The use of derivative financial instruments exposes the Company to credit risk, which relates to the risk of nonperformance by a counterparty to the derivative contracts. We manage our credit risk by entering into derivative contracts with only highly rated financial institutions and by using netting agreements.

The effective portion of derivative gains and losses are recorded in accumulated other comprehensive (loss) income until the hedged transaction affects earnings upon settlement, at which time they are reclassified to cost of goods sold or net sales. If it is probable that an anticipated hedged transaction will not occur by the end of the originally specified time period, we reclassify the gains or losses related to that hedge from accumulated other comprehensive (loss) income to other income (expense).

We assess hedge effectiveness qualitatively by verifying that the critical terms of the hedging instrument and the forecasted transaction continue to match, and that there have been no adverse developments that have increased the risk that the counterparty will default. No recognition of ineffectiveness was recorded in our Condensed Consolidated Statement of Earnings for the three and nine months ended September 30, 2019.

Foreign Currency Hedges

We use forward contracts to mitigate currency risk related to a portion of our forecasted foreign currency revenues and costs. The currency forward contracts are designed as cash flow hedges and are recorded in the Condensed Consolidated Balance Sheets at fair value.

We continue to monitor the Company's overall currency exposure and may elect to add cash flow hedges in the future. At September 30, 2019, we had a net unrealized gain of $452 in accumulated other comprehensive (loss) income, of which $432 is expected to be reclassified to income within the next 12 months. At September 30, 2018 we had a net unrealized gain of $867 in accumulated other comprehensive (loss) income. The notional amount of foreign currency forward contracts outstanding was $11,738 at September 30, 2019.

Interest Rate Swaps

We use interest rate swaps to convert a portion of our revolving credit facility's outstanding balance from a variable rate of interest to a fixed rate. As of September 30, 2019, we have agreements to fix interest rates on $50,000 of long-term debt through February 2024. The difference to be paid or received under the terms of the swap agreements will be recognized as an adjustment to interest expense when settled.

These swaps are treated as cash flow hedges and consequently, the changes in fair value are recorded in other comprehensive (loss) income. The estimated net amount of the existing gains that are reported in accumulated other comprehensive (loss) income that are expected to be reclassified into earnings within the next twelve months is approximately $127.

The location and fair values of derivative instruments designated as hedging instruments in the Condensed Consolidated Balance Sheets as of September 30, 2019, are shown in the following table:

	As of	
	September 30, 2019	December 31, 2018
Interest rate swaps reported in Other current assets	$ 127	$ 576
Interest rate swaps reported in Other assets	—	369
Interest rate swaps reported in Other long-term obligations	(498)	—
Foreign currency hedges reported in Other current assets	$ 395	$ 393

The Company has elected to net its foreign currency derivative assets and liabilities in the balance sheet in accordance with ASC 210-20 (*Balance Sheet, Offsetting*). On a gross basis, there were foreign currency derivative assets of $463 and foreign currency derivative liabilities of $68 at September 30, 2019.

The effect of derivative instruments on the Condensed Consolidated Statements of Earnings is as follows:

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Foreign Exchange Contracts:				
Amounts reclassified from AOCI to earnings:				
Net sales	$ —	$ 152	$ —	$ 115
Cost of goods sold	286	(52)	562	88
Selling, general and administrative expense	23	3	62	(2)
Total amounts reclassified from AOCI to earnings	309	103	624	201
Loss recognized in other expense for hedge ineffectiveness	—	—	—	(1)
Total derivative gain on foreign exchange contracts recognized in earnings	$ 309	$ 103	$ 624	$ 200
Interest Rate Swaps:				
Benefit recorded in Interest expense	$ 117	$ 114	$ 430	$ 284
Total gain	$ 426	$ 217	$ 1,054	$ 484

NOTE 13 – Accumulated Other Comprehensive (Loss) Income

Shareholders' equity includes certain items classified as accumulated other comprehensive (loss) income ("AOCI") in the Condensed Consolidated Balance Sheets, including:

Unrealized gains (losses) on hedges relate to interest rate swaps to convert a portion of our revolving credit facility's outstanding balance from a variable rate of interest into a fixed rate and foreign currency forward contracts used to hedge our exposure to changes in exchange rates affecting certain revenues and costs denominated in foreign currencies. These hedges are designated as cash flow hedges, and we have deferred income statement recognition of gains and losses until the hedged transactions occur, at which time amounts are reclassified into earnings. Further information related to our derivative financial instruments is included in Note 12 - Derivative Financial Instruments and Note 16 – Fair Value Measurements.

Unrealized gains (losses) on pension obligations are deferred from income statement recognition until the gains or losses are realized. Amounts reclassified to income from AOCI are included in net periodic pension income (expense). Further information related to our pension obligations is included in Note 6 – Retirement Plans.

Cumulative translation adjustments relate to our non-U.S. subsidiary companies that have designated a functional currency other than the U.S. dollar. We are required to translate the subsidiary functional currency financial statements to dollars using a combination of historical, period-end, and average foreign exchange rates. This combination of rates creates the foreign currency translation adjustment component of other comprehensive income.

Changes in exchange rates between the functional currency and the currency in which a transaction is denominated are foreign exchange transaction gains or losses. Transaction losses for the three months and nine months ended September 30, 2019 were $2,473 and $2,828, respectively and transaction losses for the three and nine months ended September 30, 2018 were $1,740 and $2,658, respectively, which have been included in other income (expense) in the Condensed Consolidated Statement of Earnings.

The components of accumulated other comprehensive (loss) income for the three months ended September 30, 2019, are as follows:

	As of June 30, 2019	Gain (Loss) Recognized in OCI	(Gain) Loss Reclassified from AOCI to Income	As of September 30, 2019
Changes in fair market value of hedges:				
Gross	$ 1,036	$ (529)	$ (426)	$ 81
Income tax (expense) benefit	(234)	119	96	(19)
Net	802	(410)	(330)	62
Changes in unrealized pension cost:				
Gross	(129,810)	—	1,313	(128,497)
Income tax benefit (expense)	35,297	—	(296)	35,001
Net	(94,513)	—	1,017	(93,496)
Cumulative translation adjustment:				
Gross	(2,287)	(89)	—	(2,376)
Income tax benefit (expense)	95	(3)	—	92
Net	(2,192)	(92)	—	(2,284)
Total accumulated other comprehensive (loss) income	$ (95,903)	$ (502)	$ 687	$ (95,718)

The components of accumulated other comprehensive (loss) income for the three months ended September 30, 2018, are as follows:

	As of June 30, 2018	Gain (Loss) Recognized in OCI	(Gain) Loss Reclassified from AOCI to Income	As of September 30, 2018
Changes in fair market value of hedges:				
Gross	$ 1,418	$ 1,023	$ (217)	$ 2,224
Income tax (expense) benefit	(360)	(231)	49	(542)
Net	1,058	792	(168)	1,682
Changes in unrealized pension cost:				
Gross	(127,055)	—	1,491	(125,564)
Income tax benefit (expense)	52,152	—	(334)	51,818
Net	(74,903)	—	1,157	(73,746)
Cumulative translation adjustment:				
Gross	(2,115)	1	—	(2,114)
Income tax benefit	98	—	—	98
Net	(2,017)	1	—	(2,016)
Total accumulated other comprehensive (loss) income	$ (75,862)	$ 793	$ 989	$ (74,080)

The components of accumulated other comprehensive (loss) income for the nine months ended September 30, 2019 are as follows:

	As of December 31, 2018	Gain (Loss) Recognized in OCI	(Gain) Loss Reclassified from AOCI to Income	As of September 30, 2019
Changes in fair market value of hedges:				
Gross	$ 1,316	$ (181)	$ (1,054)	$ 81
Income tax (expense) benefit	(298)	41	238	(19)
Net	1,018	(140)	(816)	62
Changes in unrealized pension cost:				
Gross	(132,454)	—	3,957	(128,497)
Income tax benefit (expense)	35,893	—	(892)	35,001
Net	(96,561)	—	3,065	(93,496)
Cumulative translation adjustment:				
Gross	(2,291)	(85)	—	(2,376)
Income tax benefit (expense)	95	(3)	—	92
Net	(2,196)	(88)	—	(2,284)
Total accumulated other comprehensive (loss) income	$ (97,739)	$ (228)	$ 2,249	$ (95,718)

The components of accumulated other comprehensive (loss) income for the nine months ended September 30, 2018 are as follows:

	As of December 31, 2017	Gain (Loss) Recognized in OCI	(Gain) Loss Reclassified from AOCI to Income	As of September 30, 2018
Changes in fair market value of hedges:				
Gross	$ 289	$ 2,420	$ (485)	$ 2,224
Income tax (expense) benefit	(105)	(547)	110	(542)
Net	184	1,873	(375)	1,682
Changes in unrealized pension cost:				
Gross	(130,096)	—	4,532	(125,564)
Income tax benefit (expense)	52,837	—	(1,019)	51,818
Net	(77,259)	—	3,513	(73,746)
Cumulative translation adjustment:				
Gross	(1,985)	(129)	—	(2,114)
Income tax benefit (expense)	100	(2)	—	98
Net	(1,885)	(131)	—	(2,016)
Total accumulated other comprehensive (loss) income	$ (78,960)	$ 1,742	$ 3,138	$ (74,080)

NOTE 14 – Shareholders' Equity

Share count and par value data related to shareholders' equity are as follows:

	As of	
	September 30, 2019	December 31, 2018
Preferred Stock		
Par value per share	No par value	No par value
Shares authorized	25,000,000	25,000,000
Shares outstanding	—	—
Common Stock		
Par value per share	No par value	No par value
Shares authorized	75,000,000	75,000,000
Shares issued	56,924,737	56,786,849
Shares outstanding	32,601,889	32,750,727
Treasury stock		
Shares held	24,322,848	24,036,122

On February 7, 2019, the Board of Directors authorized a new stock repurchase program with a maximum dollar limit of $25,000 in stock repurchases, which replaced the previous program. During the nine months ended September 30, 2019, 286,726 shares of common stock were repurchased for approximately $8,045, of which $567 was repurchased under the previous program and $7,478 was repurchased under the most recent board-authorized share repurchase plan. Approximately $17,522 is available for future purchases.

A roll-forward of common shares outstanding is as follows:

	Nine Months Ended	
	September 30, 2019	September 30, 2018
Balance at the beginning of the year	32,750,727	32,938,466
Repurchases	(286,726)	—
Restricted share issuances	137,888	148,815
Balance at the end of the period	32,601,889	33,087,281

Certain potentially dilutive restricted stock units are excluded from diluted earning per share because they are anti-dilutive. The number of awards that were anti-dilutive for the nine month periods ended September 30, 2019 and September 30, 2018 were 20,273 and 1,538, respectively. There were no outstanding anti-dilutive awards impacting the three month periods ended September 30, 2019 and September 30, 2018.

NOTE 15 - Stock-Based Compensation

At September 30, 2019, we had five active stock-based compensation plans: the Nonemployee Directors' Stock Retirement Plan ("Directors' Plan"), the 2004 Omnibus Long-Term Incentive Plan ("2004 Plan"), the 2009 Omnibus Equity and Performance Incentive Plan ("2009 Plan"), the 2014 Performance & Incentive Plan ("2014 Plan"), and the 2018 Equity and Incentive Compensation Plan ("2018 Plan"). Future grants can only be made under the 2018 Plan.

The following table summarizes the compensation expense included in selling, general and administrative expenses in the Condensed Consolidated Statements of Earnings related to stock-based compensation plans:

	Three Months Ended				Nine Months Ended			
	September 30, 2019		September 30, 2018		September 30, 2019		September 30, 2018	
Service-based RSUs	$	618	$	523	$	1,712	$	1,541
Performance-based RSUs		486		1,258		2,072		2,411
Cash-settled RSUs		53		137		166		152
Total	$	1,157	$	1,918	$	3,950	$	4,104
Income tax benefit		262		433		893		927
Net	$	895	$	1,485	$	3,057	$	3,177

The following table summarizes the unrecognized compensation expense related to non-vested RSUs by type and the weighted-average period in which the expense is to be recognized:

	Unrecognized Compensation Expense at September 30, 2019		Weighted-Average Period
Service-based RSUs	$	1,607	1.4
Performance-based RSUs		3,159	1.72
Total	$	4,766	1.61

We recognize expense on a straight-line basis over the requisite service period for each separately vesting portion of the award as if the award was, in substance, multiple awards.

The following table summarizes the status of these plans as of September 30, 2019:

	2018 Plan	2014 Plan	2009 Plan	2004 Plan	Directors' Plan
Awards originally available	2,500,000	1,500,000	3,400,000	6,500,000	N/A
Performance-based options outstanding	—	250,000	—	—	—
Maximum potential RSU and cash settled awards outstanding	245,456	418,199	92,600	35,952	5,522
Maximum potential awards outstanding	245,456	668,199	92,600	35,952	5,522
RSUs and cash settled awards vested and released	—	—	—	—	—
Awards available for grant	2,254,544	—	—	—	—

Performance-Based Stock Options

During 2015 and 2016, the Compensation Committee of the Board of Directors of the Company (the “Committee”) granted a total of 350,000 performance-based stock option awards (“Performance-Based Option Awards”) for certain employees under the 2014 Plan, of which 250,000 remain outstanding after considering forfeitures. The Performance-Based Option Awards have an exercise price of $18.37, a term of five years, and generally will become exercisable (provided the optionee remains employed by the Company or an affiliate) upon our attainment of at least $600,000 in revenues during any of our trailing four quarterly periods (as determined by the Committee) during the term. We have not recognized any expense on these Performance-Based Option Awards for the nine-month periods ended September 30, 2019 and 2018, since the revenue target was not deemed likely to be attained based on our current forecast.

Service-Based Restricted Stock Units

The following table summarizes the service-based RSU activity as of and for the nine months ended September 30, 2019:

	Units	Weighted Average Grant Date Fair Value
Outstanding at January 1, 2019	355,590	$ 17.91
Granted	74,591	28.78
Vested and released	(67,526)	19.97
Forfeited	(15,899)	27.00
Outstanding at September 30, 2019	346,756	$ 19.43
Releasable at September 30, 2019	206,474	$ 13.79

Performance and Market-Based Restricted Stock Units

The following table summarizes the performance and market-based RSU activity as of and for the nine months ended September 30, 2019:

	Units	Weighted Average Grant Date Fair Value
Outstanding at January 1, 2019	267,792	$ 21.44
Granted	82,103	30.98
Attained by performance	60,779	13.54
Released	(160,889)	14.34
Forfeited	(26,156)	23.81
Outstanding at September 30, 2019	223,629	$ 27.70
Releasable at September 30, 2019	—	$ —

The following table summarizes each grant of performance awards outstanding at September 30, 2019.

Description	Grant Date	Vesting Year	Vesting Dependency	Target Units Outstanding	Maximum Number of Units to be Granted
2017 - 2019 Performance RSUs	February 9, 2017	2019	35% RTSR, 35% sales growth, 30% operating cash flow	71,188	142,376
2017 - 2019 Performance RSUs	February 9, 2017	2018 - 2020	Operating Income	13,556	13,556
2018 - 2020 Performance RSUs	February 8, 2018	2020	35% RTSR, 35% sales growth, 30% operating cash flow	34,478	68,956
2018 - 2020 Performance RSUs	February 16, 2018	2020	35% RTSR, 35% sales growth, 30% operating cash flow	31,820	63,640
2019 - 2021 Performance RSUs	February 7, 2019	2021	35% RTSR, 35% sales growth, 30% operating cash flow	65,642	131,285
2019 Supplemental Performance RSUs	February 7, 2019	2021	Succession Planning Targets	6,945	13,890

Cash-Settled Restricted Stock Units

Cash-Settled RSUs entitle the holder to receive the cash equivalent of one share of common stock for each unit when the unit vests. These RSUs are issued to key employees residing in foreign locations as direct compensation. Generally, these RSUs vest over a three-year period. Cash-Settled RSUs are classified as liabilities and are remeasured at each reporting date until settled. At September 30, 2019 and December 31, 2018 we had 17,271 and 17,248 cash-settled RSUs outstanding, respectively. At September 30, 2019 and December 31, 2018, liabilities of $263 and $300, respectively, were included in Accrued liabilities on our Condensed Consolidated Balance Sheets.

NOTE 16 — Fair Value Measurements

We use interest rate swaps to convert a portion of our Revolving Credit Facility's outstanding balance from a variable rate of interest into a fixed rate and foreign currency forward contracts to hedge the effect of foreign currency changes on certain revenues and costs denominated in foreign currencies. These derivative financial instruments are measured at fair value on a recurring basis.

The table below summarizes our financial assets (liabilities) that are measured at fair value on a recurring basis at September 30, 2019:

	Asset (Liability) Carrying Value at September 30, 2019	Quoted Prices in Active Markets for Identical Instruments (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Interest rate swaps	$ (372)	$ —	$ (372)	$ —
Foreign currency hedges	$ 395	$ —	$ 395	$ —

The table below summarizes the financial assets that are measured at fair value on a recurring basis as of December 31, 2018:

	Asset Carrying Value at December 31, 2018	Quoted Prices in Active Markets for Identical Instruments (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
Interest rate swaps	$ 945	$ —	$ 945	$ —
Foreign currency hedges	$ 393	$ —	$ 393	$ —

The fair value of our interest rate swaps and foreign currency hedges were measured using standard valuation models using market-based observable inputs over the contractual terms, including forward yield curves, among others. There is a readily determinable market for these derivative instruments, but that market is not active and therefore they are classified within Level 2 of the fair value hierarchy.

The table below provides a reconciliation of the recurring financial assets (liabilities) for our derivative instruments:

	Interest Rate Swaps	Foreign Currency Hedges
Balance at January 1, 2018	$ 971	$ (742)
Cash settlements paid (received)	421	(402)
Total gains (losses) for the period:		
Included in earnings	(421)	484
Included in other comprehensive income	(26)	1,053
Balance at December 31, 2018	$ 945	$ 393
Cash settlements received	(430)	(703)
Total gains (losses) for the period:		
Included in earnings	430	624
Included in other comprehensive income	(1,317)	81
Balance at September 30, 2019	$ (372)	$ 395

Our long-term debt consists of the Revolving Credit Facility which is recorded at its carrying value. There is a readily determinable market for our long-term debt and it is classified within Level 2 of the fair value hierarchy as the market is not deemed to be active. The fair value of long-term debt approximates carrying value and was determined by valuing a similar hypothetical coupon bond and attributing that value to our long-term debt under the Revolving Credit Facility.

NOTE 17 — Income Taxes

The effective tax rates for the three and nine-month periods ended September 30, 2019 and 2018 are as follows:

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Effective tax rate	62.2%	28.9%	30.3%	29.7%

Our effective income tax rate was 62.2% and 28.9% in the third quarters of 2019 and 2018, respectively. This increase is primarily attributed to the net impact of changes in reserves relating to uncertain tax positions. The tax rate in the third quarter of 2019 was higher than the U.S. statutory federal tax rate primarily due to an increase to reserves for uncertain tax positions associated with the Company's operations in China and foreign earnings that are taxed at higher rates. The tax rate in the third quarter of 2018 was higher than the U.S. statutory federal tax rate primarily due to foreign withholding taxes including the impact of a one-time distribution from Taiwan and foreign earnings that are taxed at higher rates.

Our effective income tax rate was 30.3% and 29.7% for the nine months ended September 30, 2019 and 2018, respectively. The tax rate in the first nine months of 2019 was higher than the U.S. statutory federal tax rate primarily due to an increase to reserves for uncertain tax positions associated with the Company's operations in China and foreign earnings that are taxed at higher rates. The tax rate in the first nine months of 2018 was higher than the U.S. statutory federal tax rate primarily due to foreign withholding taxes including the impact of a one-time distribution from Taiwan and foreign earnings that are taxed at higher rates.

NOTE 18 — Leases

We lease certain land, buildings and equipment under non-cancellable operating leases used in our operations. Operating lease assets represent our right to use an underlying asset for the lease term. Operating lease liabilities represent the present value of lease payments over the lease term, discounted using an estimate of our secured incremental borrowing rate because none of our leases contain a rate implicit in the lease arrangement.

The operating lease assets and liabilities are adjusted to include the impact of any lease incentives and non-lease components. We have elected not to separate lease and non-lease components, which include taxes and common area maintenance in some of our leases. Variable lease payments that depend on an index or a rate are included in lease payments using the prevailing index or rate in effect at lease commencement.

Options to extend or terminate a lease are included in the lease term when it is reasonably likely that we will exercise that option. We have elected not to record leases with an initial term of 12 months or less on the balance sheet and instead recognize those lease payments on a straight-line basis over the lease term.

We determine if an arrangement is a lease or contains a lease at its inception, which normally does not require significant estimates or judgments. Our lease agreements do not contain any material residual value guarantees or material restrictive covenants and we currently have no material sublease agreements.

Total lease expense for the three and nine months ended September 30, 2019 is as follows:

	Three Months Ended September 30, 2019	Nine Months Ended September 30, 2019
Operating lease cost	$ 1,128	$ 3,197
Short-term lease cost	43	292
Total lease cost	$ 1,171	$ 3,489

Remaining maturity of our existing lease liabilities as of September 30, 2019 is as follows:

	Operating Leases[(1)]
2019	$ 1,117
2020	4,420
2021	4,310
2022	4,116
2023	3,701
Thereafter	20,442
Total	$ 38,106
Less: interest	(10,550)
Present value of lease liabilities	$ 27,556

(1) Operating lease payments include $5,266 of payments related to options to extend lease terms that are reasonably expected to be exercised.

Balance Sheet Classification:	
Operating lease obligations	$ 2,677
Long-term operating lease obligations	24,879
Total lease liabilities	$ 27,556
Weighted-average remaining lease terms (years)	9.27
Weighted-average discount rate	6.81%
Supplemental cash flow information related to leases:	
Cash paid for amounts included in the measurement of lease liabilities	$ 2,887
Leased assets obtained in exchange for new operating lease liabilities	$ 2,961

NOTE 19 – Business Acquisitions

On July 31, 2019, we acquired 100% of the outstanding shares of Quality Thermistor, Inc. (QTI) for $75 million plus a contingent earn out of up to $5 million based on sales performance objectives. The purchase price includes adjustments for debt assumed and changes in working capital. QTI, doing business as QTI Sensing Solutions, is a leading designer and manufacturer of high-quality temperature sensors serving original equipment manufacturers with mission-critical applications in the industrial, aerospace, defense and medical markets. This acquisition provides us with a new core temperature sensing technology that expands our sensing product portfolio, while increasing our presence in the industrial and medical markets.

The purchase price of $75,755 has been allocated to the fair values of assets and liabilities acquired as of July 31, 2019. The allocation of purchase price is preliminary pending the completion of the appraisals of property, plant, and equipment, the valuation of intangible assets, and finalization of management's estimates. The final purchase price allocation may result in a materially different allocation than that recorded as of September 30, 2019.

The following table summarizes the consideration paid and the preliminary fair values of the assets acquired and the liabilities assumed at the date of acquisition:

		Consideration Paid
Cash paid, net of cash acquired of $567	$	73,588
Contingent consideration		2,167
Purchase price	$	75,755

		Preliminary Fair Values at July 31, 2019
Current assets	$	7,212
Property, plant and equipment		2,502
Other assets		29
Goodwill		37,085
Intangible assets		31,700
Fair value of assets acquired		78,528
Less fair value of liabilities acquired		(2,773)
Purchase price	$	75,755

Goodwill represents value the Company expects to be created by combining the operations of the acquired business with the Company's operations, including the expansion of customer relationships within our existing business, access to new customers, and potential cost savings and synergies. Goodwill related to the acquisition is expected to be deductible for tax purposes.

Contingent consideration is payable in cash upon the achievement of a revenue performance target for the year ending December 31, 2019. The Company recorded $2,167 as the acquisition date fair value of the contingent consideration based on an estimate of the probability of achieving the performance target using the most recent revenue forecast. This amount is reflected as an addition to purchase price and will be finalized once the full year 2019 results are known.

The following table summarizes the preliminary carrying amounts and weighted average lives of the acquired intangible assets:

		Carrying Value	Weighted Average Amortization Period
Customer lists/relationships	$	29,900	15.0
Technology and other intangibles		1,800	5.0
Total	$	31,700	

Results of operations for QTI are included in our consolidated condensed financial statements beginning on July 31, 2019. The amount of net sales and net loss from QTI since the acquisition date that have been included in the condensed consolidated statements of earnings are as follows:

	For the period July 31, 2019 through September 30, 2019
Net sales	$ 3,670
Net loss	$ (1,086)

NOTE 20 — Recent Accounting Pronouncements

ASU 2018-14 *"Compensation - Retirement Benefits - Defined Benefit Plans - General"*

In August 2018, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2018-14, *"Compensation - Retirement Benefits - Defined Benefit Plans - General."* This ASU modifies the disclosure requirements for defined benefit and other postretirement plans. This ASU eliminates certain disclosures associated with accumulated other comprehensive income, plan assets, related parties, and the effects of interest rate basis point changes on assumed health care costs; while other disclosures have been added to address significant gains and losses related to changes in benefit obligations. This ASU also clarifies disclosure requirements for projected benefit and accumulated benefit obligations. The amendments in this ASU are effective for fiscal years ending after December 15, 2020 and for interim periods therein with early adoption permitted. Adoption on a retrospective basis for all periods presented is required. This ASU will impact our financial statement disclosures but will not have an impact on our consolidated financial position, results of operations, or cash flows.

ASU 2018-13 *"Fair Value Measurement (Topic 820): Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement"*

In August 2018, the FASB issued ASU No. 2018-13 *"Fair Value Measurement (Topic 820): Disclosure Framework-Changes to the Disclosure Requirements for Fair Value Measurement"*. This ASU modified the disclosures related to recurring and nonrecurring fair value measurements. Disclosures related to the transfer of assets between Level 1 and Level 2 hierarchies have been eliminated and various additional disclosures related to Level 3 fair value measurements have been added, modified or removed. This ASU is effective for annual periods beginning after December 15, 2019, and interim periods within those fiscal years. Early adoption is permitted upon issuance of the standard for disclosures modified or removed with a delay of adoption of the additional disclosures until their effective date. This ASU is not expected to have an impact on our financial statements.

ASU 2016-16 *"Income Taxes (Topic 740) Intra-Entity Transfers of Assets Other Than Inventory"*

In October 2016, the FASB issued ASU No. 2016-16, *"Intra-Entity Transfers of Assets Other Than Inventory"*. This ASU is meant to improve the accounting for the income tax effect of intra-entity transfers of assets other than inventory. Currently, U.S. GAAP prohibits the recognition of current and deferred income taxes for intra-entity asset transfers until the asset is sold to a third party. This ASU will now require companies to recognize the income tax effect of an intra-entity asset transfer (other than inventory) when the transaction occurs. This ASU is effective for public companies, for fiscal years beginning after December 15, 2019 and interim periods within those annual reporting periods. Early adoption is permitted and is to be applied on a modified retrospective basis through a cumulative-effect adjustment to retained earnings as of the beginning of the period of adoption. This guidance is not expected to have a material impact on our financial statements.

ASU 2016-13 *"Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments"*

In June 2016, the FASB issued ASU 2016-13, *Financial Instruments - Credit Losses (Topic 326): Measurement of Credit Losses on Financial Instruments,* which amends the current accounting guidance and requires the measurement of all expected losses based on historical experience, current conditions and reasonable and supportable forecasts. For trade receivables, loans, and other financial instruments, we will be required to use a forward-looking expected loss model rather than the incurred loss model for recognizing credit losses which reflects losses that are probable. The standard will become effective for interim and annual periods beginning after December 15, 2019, with early adoption permitted. Application of the amendments is through a cumulative-effect adjustment to retained earnings as of the effective date. We plan to adopt this standard on the effective date and are currently evaluating the impact of this new standard on our financial statements.

Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations ("MD&A")

(in thousands, except percentages and per share amounts)

The following discussion should be read in conjunction with our unaudited Condensed Consolidated Financial Statements and notes included under Item 1, as well as our Consolidated Financial Statements and notes and related Management's Discussion and Analysis of Financial Condition and Results of Operations included in our Annual Report on Form 10-K for the year ended December 31, 2018.

Overview

CTS Corporation ("CTS", "we", "our" or "us") is a leading designer and manufacturer of products that Sense, Connect and Move. We manufacture sensors, actuators, and electronic components in North America, Europe, and Asia, and provide engineered products to customers in the aerospace/defense, industrial, medical, telecommunications/IT, and transportation markets.

Results of Operations: Third Quarter 2019 versus Third Quarter 2018

The following table highlights changes in significant components of the Unaudited Condensed Consolidated Statements of Earnings for the quarters ended September 30, 2019, and September 30, 2018:

	Three Months Ended				
	September 30, 2019	September 30, 2018	Percent Change	Percent of Net Sales – 2019	Percent of Net Sales – 2018
Net sales	$ 115,651	$ 118,859	(2.7)%	100.0%	100.0%
Cost of goods sold	78,594	76,777	2.4	68.0	64.6
Gross margin	37,057	42,082	(11.9)	32.0	35.4
Selling, general and administrative expenses	17,774	18,450	(3.7)	15.4	15.5
Research and development expenses	6,806	6,517	4.4	5.9	5.5
Restructuring charges	2,342	997	134.9	2.0	0.8
Loss on sale of assets	11	—	(100.0)	—	—
Total operating expenses	26,933	25,964	3.7	23.3	21.8
Operating earnings	10,124	16,118	(37.2)	8.8	13.6
Total other expense, net	(2,924)	(1,763)	65.9	(2.5)	(1.5)
Earnings before income taxes	7,200	14,355	(49.8)	6.2	12.1
Income tax expense	4,478	4,144	8.1	3.9	3.5
Net earnings	$ 2,722	$ 10,211	(73.3)%	2.4%	8.6%
Earnings per share:					
Diluted net earnings per share	$ 0.08	$ 0.30			

Sales were $115,651 in the third quarter of 2019, a decrease of $3,208 or 2.7% from the third quarter of 2018. Sales to transportation markets decreased $3,625 or 4.8%. Sales to other markets increased $417 or 1.0% due to the addition of sales from the QTI acquisition. The QTI acquisition, which was completed in July 2019, added $3,670 in sales for the quarter. Changes in foreign exchange rates decreased sales by $922 year-over-year due to the U.S. Dollar appreciating compared to the Chinese Renminbi and Euro and relating mostly to sales of products to the transportation end market.

Gross margin as a percent of sales was 32.0% in the third quarter of 2019 compared to 35.4% in the third quarter of 2018. The decrease in gross margin was driven primarily by a one-time purchase accounting step-up in the value of finished goods inventory acquired with our QTI acquisition, execution challenges in our ceramic foundry operation, a product replacement charge for a transportation product, and material cost and wage increases. These were partially offset by savings related to the manufacturing transition from Elkhart, Indiana and other cost improvements.

Selling, general and administrative ("SG&A") expenses were $17,774 or 15.4% of sales in the third quarter of 2019 versus $18,450 or 15.5% of sales in the third quarter of 2018. The 2019 SG&A costs include amortization of intangibles and other operating costs associated with the QTI acquisition, which were offset by other expense reductions.

Research and development expenses were $6,806 or 5.9% of sales in the third quarter of 2019 compared to $6,517 or 5.5% of sales in the comparable quarter of 2018.

Restructuring charges were $2,342 or 2.0% of sales in the third quarter of 2019. The charges were mainly for building and equipment relocation, severance, and asset impairment charges related to the restructuring of certain operations as part of the 2016 Restructuring Plan, as well as a lease termination fee related to a property lease we acquired in the QTI acquisition. Restructuring charges were $997 or 0.8% of sales in the third quarter of 2018.

Operating earnings were $10,124 or 8.8% of sales in the third quarter of 2019 compared to operating earnings of $16,118 or 13.6% of sales in the third quarter of 2018.

Other income and expense items are summarized in the following table:

	Three Months Ended	
	September 30, 2019	**September 30, 2018**
Interest expense	$ (812)	$ (489)
Interest income	524	413
Other expense, net	(2,636)	(1,687)
Total other expense, net	$ (2,924)	$ (1,763)

Interest expense increased mainly as a result of an increase in debt related to the QTI acquisition. Other expense in the third quarter of 2019 was principally driven by foreign currency translation losses, mainly due to the appreciation of the U.S. Dollar compared to the Chinese Renminbi during the quarter, as well as pension expense.

	Three Months Ended	
	September 30, 2019	**September 30, 2018**
Effective tax rate	62.2%	28.9%

Our effective income tax rate was 62.2% and 28.9% in the third quarters of 2019 and 2018, respectively. The increase in the effective tax rate for the three months ended September 30, 2019, compared with the same period in 2018 is primarily attributed to the net impact of changes in reserves relating to uncertain tax positions.

Results of Operations: Nine Months Ended September 30, 2019 versus Nine Months Ended September 30, 2018

	Nine Months Ended		Percent	Percent of	Percent of
	September 30, 2019	September 30, 2018	Change	Net Sales 2019	Net Sales 2018
Net sales	$ 353,959	$ 350,410	1.0 %	100.0%	100.0%
Cost of goods sold	235,084	228,082	3.1	66.4	65.1
Gross margin	118,875	122,328	(2.8)	33.6	34.9
Selling, general and administrative expenses	52,371	55,441	(5.5)	14.8	15.7
Research and development expenses	19,854	19,500	1.8	5.6	5.6
Restructuring charges	5,337	3,364	58.7	1.5	1.0
Gain on sale of assets	(111)	2	(100.0)	—	—
Total operating expenses	77,451	78,307	(1.1)	21.9	22.3
Operating earnings	41,424	44,021	(5.9)	11.7	12.6
Total other (expense) income, net	(3,995)	(2,791)	43.1	(1.1)	(0.8)
Earnings before income taxes	37,429	41,230	(9.2)	10.6	11.8
Income tax expense	11,345	12,262	(7.5)	3.2	3.5
Net earnings	$ 26,084	$ 28,968	(10.0)%	7.4%	8.3%
Earnings per share:					
Diluted net earnings per share	$ 0.79	$ 0.86			

Sales were $353,959 in the nine months ended September 30, 2019, an increase of $3,549 or 1.0% from the nine months ended September 30, 2018. Sales to transportation markets increased $7,348 or 3.3%. Sales to other markets declined $3,799 or 3.0%. The QTI acquisition, which was completed in July 2019, added $3,670 in sales for the nine months ended September 30, 2019. Changes in foreign exchange rates decreased sales by $4,554 year-over-year due to the U.S. Dollar appreciating compared to the Chinese Renminbi and Euro and relating mostly to sales of products to the transportation end market.

Gross margin as a percent of sales was 33.6% in the nine months ended September 30, 2019 compared to 34.9% for the nine months ended September 30, 2018. The decrease in gross margin was driven primarily by a one-time purchase accounting step-up in the value of finished goods inventory acquired with our QTI acquisition, execution challenges in our ceramic foundry operation, a product replacement charge for a transportation product, and material cost and wage increases. These were partially offset by savings related to the manufacturing transition from Elkhart, Indiana and other cost improvements.

Selling, general and administrative ("SG&A") expenses were $52,371 or 14.8% of sales in the nine months ended September 30, 2019 versus $55,441 or 15.7% of sales in the nine months ended September 30, 2018. The 2018 SG&A costs included a $950 environmental charge and $1,069 for professional fees related to tax projects. The remaining reduction in SG&A expenses was related to other expense reductions and timing of certain expenses.

Research and development expenses were $19,854 or 5.6% of sales in the nine months ended September 30, 2019 compared to $19,500 or 5.6% of sales in the nine months ended September 30, 2018.

Restructuring charges were $5,337 or 1.5% of sales in the nine months ended September 30, 2019. The charges were mainly for building and equipment relocation, severance, and asset impairment charges related to the restructuring of certain operations as part of the 2016 Restructuring Plan, as well as a lease termination fee related to a property lease we acquired in the QTI acquisition. Restructuring charges were $3,364 or 1.0% of sales in the nine months ended September 30, 2018.

Operating earnings were $41,424 or 11.7% of sales in the nine months ended September 30, 2019 compared to operating earnings of $44,021 or 12.6% of sales in the nine months ended September 30, 2018.

Other income and expense items are summarized in the following table:

	Nine Months Ended	
	September 30, 2019	September 30, 2018
Interest expense	$ (1,745)	$ (1,601)
Interest income	1,396	1,367
Other expense, net	(3,646)	(2,557)
Total other expense, net	$ (3,995)	$ (2,791)

Other expense in the nine months ended September 30, 2019 was principally driven by foreign currency translation losses, mainly due to the appreciation of the U.S. Dollar compared to the Chinese Renminbi during the first nine months of the year, as well as pension expense.

	Nine Months Ended	
	September 30, 2019	September 30, 2018
Effective tax rate	30.3%	29.7%

Our effective income tax rate was 30.3% and 29.7% in the nine months ended September 30, 2019 and 2018, respectively.

Liquidity and Capital Resources

Cash and cash equivalents were $101,199 at September 30, 2019, and $100,933 at December 31, 2018, of which $99,690 and $96,762, respectively, were held outside the United States. The increase in cash and cash equivalents of $266 was primarily driven by cash generated from operating activities of $40,735 and net proceeds from an increase in borrowings of long-term debt of $62,700, which were partially offset by the payment for the QTI acquisition of $73,588, capital expenditures of $15,299, treasury stock purchases of $8,045, dividends paid of $3,934, and taxes paid on behalf of equity award participants of $2,653. Total long-term debt was $112,700 as of September 30, 2019 and $50,000 as of December 31, 2018. Total debt as a percentage of total capitalization, defined as long-term debt as a percentage of total debt and shareholders' equity, was 22.2% at September 30, 2019, compared to 11.7% at December 31, 2018.

Working capital increased by $9,112 during the nine months ended September 30, 2019, primarily due to the increase in accounts receivable, inventory and other assets as well as the decrease of accounts payable and accrued payroll and benefits, which were partially offset by an increase in operating lease obligations.

Cash Flows from Operating Activities

Net cash provided by operating activities was $40,735 during the first nine months of 2019. Components of net cash provided by operating activities included net earnings of $26,084, depreciation and amortization expense of $18,038, other net non-cash items of $6,236, and a net cash outflow from changes in assets and liabilities of $9,623.

Cash Flows from Investing Activities

Net cash used in investing activities for the first nine months of 2019 was $88,750, driven by the payment for the QTI acquisition of $73,588 and capital expenditures of $15,299.

Cash Flows from Financing Activities

Net cash provided by financing activities for the first nine months of 2019 was $48,068. The net cash inflow was the result of net proceeds from an increase in borrowings of long-term debt of $62,700, which was partially offset by treasury stock purchases of $8,045, dividends paid of $3,934, and taxes paid on behalf of equity award participants in the amount of $2,653.

Capital Resources

Long-term debt is comprised of the following:

	As of			
	September 30, 2019		December 31, 2018	
Total credit facility	$	300,000	$	300,000
Balance outstanding		112,700		50,000
Standby letters of credit		1,800		1,940
Amount available	$	185,500	$	248,060
Weighted-average interest rate		3.41%		3.10%
Commitment fee percentage per annum		0.20%		0.20%

On February 12, 2019, we entered into an amended and restated five-year Credit Agreement with a group of banks (the "Credit Agreement") to extend the term of the facility. The Credit Agreement provides for a revolving credit facility of $300,000, which may be increased by $150,000 at the request of the Company, subject to the administrative agent's approval. This new unsecured credit facility replaces the prior $300,000 unsecured credit facility, which would have expired August 10, 2020. Borrowings of $50,000 under the prior credit agreement were refinanced into the Credit Agreement. The prior agreement was terminated as of February 12, 2019.

The Revolving Credit Facility requires, among other things, that CTS comply with a maximum total leverage ratio and a minimum fixed charge coverage ratio. Failure to comply with these covenants could reduce the borrowing availability under the Revolving Credit Facility. We were in compliance with all debt covenants at September 30, 2019.

We have entered into interest rate swap agreements to fix interest rates on $50,000 of long-term debt through February 2024. The difference to be paid or received under the terms of the swap agreements is recognized as an adjustment to interest expense when settled.

We have historically funded our capital and operating needs primarily through cash flows from operating activities, supported by available credit under our Revolving Credit Facility. We believe that cash flows from operating activities and available borrowings under our Revolving Credit Facility will be adequate to fund our working capital needs, capital expenditures, and debt service requirements for at least the next twelve months. However, we may choose to pursue additional equity and debt financing to provide additional liquidity or to fund acquisitions.

Critical Accounting Policies and Estimates

Management prepared the consolidated financial statements of CTS under accounting principles generally accepted in the United States of America. These principles require the use of estimates, judgments, and assumptions. We believe that the estimates, judgments, and assumptions we used are reasonable, based upon the information available.

Our estimates and assumptions affect the reported amounts in our financial statements. The following accounting policies comprise those that we believe are the most critical in understanding and evaluating our reported financial results.

Revenue Recognition

We recognize revenue upon the transfer of promised goods to our customers in an amount that reflects the consideration to which we expect to be entitled by applying the following five-step process specified in Accounting Standard Codification ("ASC") Topic 606:

- Identify the contract(s) with a customer
- Identify the performance obligations
- Determine the transaction price
- Allocate the transaction price
- Recognize revenue when the performance obligations are met

Our contracts normally contain a single performance obligation that is fulfilled on the date of delivery based on shipping terms stipulated in the contract. We recognize revenue when (or as) the performance obligation has been satisfied after considering the impact of variable consideration and other factors that may affect the transaction price. Differences between the amount of revenue recognized and the amount invoiced, collected from, or paid to our customers are recognized as contract assets or liabilities. Contract assets will be reviewed for impairment when events or circumstances indicate that they may not be recoverable.

Product Warranties

Provisions for estimated warranty expenses primarily related to our automotive products are made at the time products are sold. These estimates are established using a quoted industry rate. We adjust our warranty reserve for any known or anticipated warranty claims as new information becomes available. We evaluate our warranty obligations at least quarterly and adjust our accruals if it is probable that future costs will be different than our current reserve. Over the last three years, product warranty reserves have ranged from 0.5% to 2.4% of total sales. We believe our reserve level is appropriate considering all facts and circumstances surrounding any outstanding quality claims and our historical experience selling our products to our customers.

Accounts Receivable

We have standardized credit granting and review policies and procedures for all customer accounts, including:

- Credit reviews of all new customer accounts,
- Ongoing credit evaluations of current customers,
- Credit limits and payment terms based on available credit information,
- Adjustments to credit limits based upon payment history and the customer's current credit worthiness,
- An active collection effort by regional credit functions, reporting directly to the corporate financial officers, and;
- Limited credit insurance on the majority of our international receivables.

We reserve for estimated credit losses based on historical experience and specific customer collection issues. Over the last three years, accounts receivable reserves have been approximately 0.1% to 0.7% of total accounts receivable. We believe our reserve level is appropriate considering the quality of the portfolio. While credit losses have historically been within expectations and the reserves established, we cannot guarantee that our credit loss experience will continue to be consistent with historical experience.

Inventories

We value our inventories at the lower of the actual cost to purchase or manufacture using the first-in, first-out ("FIFO") method, or net realizable value. We review inventory quantities on hand and record a provision for excess and obsolete inventory based on forecasts of product demand and production requirements.

Over the last three years, our reserves for excess and obsolete inventories have ranged from 10.2% to 18.4% of gross inventory. We believe our reserve level is appropriate considering the quantities and quality of the inventories.

Retirement Plans

Actuarial assumptions are used in determining pension income and expense and our pension benefit obligation. We utilize actuaries from consulting companies in each applicable country to develop our discount rates that match high-quality bonds currently available and expected to be available during the period to maturity of the pension benefit in order to provide the necessary future cash flows to pay the accumulated benefits when due. After considering the recommendations of our actuaries, we have assumed a discount rate, expected rate of return on plan assets and a rate of compensation increase in determining our annual pension income and expense and the projected benefit obligation. During the fourth quarter of each year, we review our actuarial assumptions in light of current economic factors to determine if the assumptions need to be adjusted. Changes in the actuarial assumptions could have a material effect on our results of operations.

Valuation of Goodwill

Goodwill of a reporting unit is tested for impairment annually, or more frequently if an event occurs or circumstances change that would more-likely-than-not reduce the fair value of a reporting unit below its carrying amount. Examples of such events or circumstances include, but are not limited to, the following:

- Significant decline in market capitalization relative to net book value,
- Significant adverse change in legal factors or in the business climate,
- Adverse action or assessment by a regulator,
- Unanticipated competition,

- More-likely-than-not expectation that a reporting unit or a significant portion of a reporting unit will be sold or otherwise disposed of,
- Testing for recoverability of a significant asset group within a reporting unit, and
- Allocation of a portion of goodwill to a business to be disposed.

If we believe that one or more of the above indicators of impairment have occurred, we perform an impairment test. We have the option to perform a qualitative assessment (commonly referred to as "step zero" test) to determine whether further quantitative analysis for impairment of goodwill and indefinite-lived intangible assets is necessary. The qualitative assessment includes a review of macroeconomic conditions, industry and market considerations, internal cost factors, and our own overall financial and share price performance, among other factors. If, after assessing the totality of events or circumstances we determine that it is not more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, we do not need to perform a quantitative analysis.

If a quantitative assessment is required, we estimate the fair value of each reporting unit using a combination of discounted cash flow analysis and market-based valuation methodologies. Determining fair value using a quantitative approach requires significant judgment, including judgments about projected revenues, operating expenses, working capital investment, capital expenditures, and cash flows over a multi-year period. The discount rate applied to our forecasts of future cash flows is based on our estimated weighted average cost of capital. In assessing the reasonableness of our determined fair values, we evaluate our results against our market capitalization. Changes in these estimates and assumptions could materially affect the determination of fair value and impact the goodwill impairment assessment.

Our latest assessment was performed using a qualitative approach as of October 1, 2018, and we determined that it was likely that the fair values of our reporting units were more than their carrying amounts, and therefore no impairment charges were recorded. We will monitor future results and will perform a test if indicators trigger an impairment review.

Impairment of Other Intangible and Long-Lived Assets

We evaluate the impairment of identifiable intangibles and other long-lived assets whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Factors considered that may trigger an impairment review consist of, but are not limited to, the following:

- Significant decline in market capitalization relative to net book value,
- Significant underperformance relative to expected historical or projected future operating results,
- Significant changes in the manner of use of the acquired assets or the strategy for the overall business,
- Significant negative industry or economic trends.

If we believe that one or more indicators of impairment have occurred, we perform a recoverability test by comparing the carrying amount of an asset or asset group to the sum of the undiscounted cash flows expected to result from the use and the eventual disposition of the asset or asset group. If such assets are considered to be impaired, the impairment to be recognized is measured by the amount by which the carrying amount of the assets exceeds the fair value. During the nine months ended September 30, 2019 quarter we recognized impairment charges of $1,100 for fixed assets relating to our restructuring activities. No other indicators of impairment were identified during the quarter ended September 30, 2019.

Income Taxes

Our income tax expense, deferred tax assets and liabilities, and liabilities for unrecognized tax benefits reflect management's best estimate of current and future taxes to be paid. We are subject to income taxes in the United States and numerous foreign jurisdictions. Significant judgments and estimates are required in the determination of consolidated income tax expense.

Deferred income taxes arise from temporary differences between the tax basis of assets and liabilities and their reported amounts in the financial statements, which will result in taxable or deductible amounts in the future. In evaluating our ability to recover our deferred tax assets in the jurisdiction from which they arise, we consider all available positive and negative evidence, including scheduled reversals of deferred tax liabilities, projected future taxable income, tax-planning strategies, and results of recent operations. The assumptions about future taxable income require the use of significant judgment and are consistent with the plans and estimates we are using to manage our underlying businesses.

The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax laws and regulations in a multitude of jurisdictions across our global operations. ASC No. 740 states that a tax benefit from an uncertain tax position may be recognized when it is more-likely-than-not that the position will be sustained upon examination, including resolution of any related appeals or litigation processes, on the basis of its technical merits. We record unrecognized tax benefits as liabilities in accordance with ASC 740 and adjust these liabilities when our judgment changes as a result of the evaluation of new information not previously available. Because of the complexity of some of these uncertainties, the ultimate resolution may result in a payment that is materially different from our current estimate of the unrecognized tax benefit liabilities. These differences will be reflected as increases or decreases to income tax expense in the period in which new information is available.

Our practice is to recognize interest and penalties related to income tax matters as part of income tax expense.

Generally, outside of Canada and the United Kingdom, it has been our historical practice to permanently reinvest the earnings of our non-U.S. subsidiaries in those operations. However, the 2017 Tax Cut and Jobs Act made significant changes to the taxation of undistributed foreign earnings, requiring that all previously untaxed earnings and profits of our controlled foreign corporation be subjected to a one-time mandatory deemed repatriation tax. This transition tax substantially eliminated the basis difference that existed prior to the Tax Act. However, there are limited other taxes that continue to apply such as foreign withholding and certain state taxes. We completed an evaluation of our indefinite reinvestment assertion as a result of the Tax Cut and Jobs Act during the fourth quarter of 2018 and decided not to reinvest the current year earnings of our primary operations, except for in the Czech Republic, Denmark, India, Mexico and Taiwan. We intend to continue to indefinitely reinvest the earnings in these non-U.S. subsidiaries.

Significant Customers

Our net sales to customers representing at least 10% of total net sales is as follows:

	Three Months Ended		Nine Months Ended	
	September 30, 2019	September 30, 2018	September 30, 2019	September 30, 2018
Cummins Inc.	14.9%	16.0%	17.2%	14.7%
Toyota Motor Corporation	11.3%	9.9%	11.2%	10.6%
Honda Motor Co.	9.5%	10.8%	9.9%	10.4%

Forward-Looking Statements

This document contains statements that are, or may be deemed to be, forward-looking statements within the meaning of the Private Securities Litigation Reform Act of 1995. These forward-looking statements include, but are not limited to, any financial or other guidance, statements that reflect our current expectations concerning future results and events, and any other statements that are not based solely on historical fact. Forward-looking statements are based on management’s expectations, certain assumptions and currently available information. Readers are cautioned not to place undue reliance on these forward-looking statements, which speak only as of the date hereof and are based on various assumptions as to future events, the occurrence of which necessarily are subject to uncertainties. These forward-looking statements are made subject to certain risks, uncertainties and other factors, which could cause our actual results, performance or achievements to differ materially from those presented in the forward-looking statements. Examples of factors that may affect future operating results and financial condition include, but are not limited to: changes in the economy generally and in respect to the business in which CTS operates; unanticipated issues in integrating acquisitions; the results of actions to reposition our business; rapid technological change; general market conditions in the automotive, communications, and computer industries, as well as conditions in the industrial, defense and aerospace, and medical markets; reliance on key customers; unanticipated natural disasters or other events; the ability to protect our intellectual property; pricing pressures and demand for our products; unanticipated developments that could occur with respect to contingencies such as litigation and environmental matters as well as any product liability claims; and risks associated with our international operations, including trade and tariff barriers, exchange rates and political and geopolitical risks. Many of these and other risks and uncertainties are discussed in further detail in Item 1A. of CTS' Annual Report on Form 10-K for the fiscal year ended December 31, 2018. We undertake no obligation to publicly update our forward-looking statements to reflect new information or events or circumstances that arise after the date hereof, including market or industry changes.

Item 3. Quantitative and Qualitative Disclosures About Market Risk

There have been no material changes in our market risk since December 31, 2018.

Item 4. Controls and Procedures

Evaluation of Disclosure Controls and Procedures

Pursuant to Rule 13a-15(e) of the Securities and Exchange Act of 1934, management, under the direction of our Chief Executive Officer and Chief Financial Officer, evaluated our disclosure controls and procedures. Based on such evaluation, our Chief Executive Officer and Chief Financial Officer concluded that our disclosure controls and procedures were effective as of September 30, 2019.

Changes in Internal Control Over Financial Reporting

The acquisition of Quality Thermistor, Inc. ("QTI") on July 31, 2019, represents a material change in internal control over financial reporting since management's last assessment of our internal control over financial reporting which was completed as of December 31, 2018. The QTI business utilizes separate information and accounting systems and processes. We intend to exclude the operations of QTI from the scope of our Sarbanes-Oxley Section 404 report on internal controls over financial reporting for the year ended December 31, 2019.

There were no other significant changes in the Company's internal control over financial reporting 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. The process for evaluating controls and procedures is continuous and encompasses constant improvement of the design and effectiveness of established controls and procedures and the remediation of any deficiencies which may be identified during this process.

PART II - OTHER INFORMATION

Item 1. Legal Proceedings

From time to time we are involved in litigation with respect to matters arising from the ordinary conduct of our business, and currently certain claims are pending against us. In the opinion of management, based upon presently available information, either adequate provision for anticipated costs have been accrued or the ultimate anticipated costs will not materially affect our consolidated financial position, results of operations, or cash flows.

Item 1A. Risk Factors

There have been no significant changes to our risk factors since December 31, 2018.

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

On February 7, 2019 the Board of Directors authorized a new stock repurchase program with a maximum dollar limit of $25 million. This program authorizes us to make repurchases of our common stock from time to time on the open market, but does not obligate us to make repurchases, and has no expiration date.

In thousands, except shares and price paid per share	Total Number of Shares Purchased	Average Price Paid per Share	Total Number of Shares Purchased as Part of Publicly Announced Programs	Maximum Dollar Value of Shares That May Yet By Purchased Under Publicly Announced Plans or Programs
July 1, 2019 through July 31, 2019	48,360	$ 27.94	48,360	$ 19,214
August 1, 2019 through August 31, 2019	47,300	$ 28.96	47,300	$ 17,844
September 1, 2019 through September 30, 2019	11,100	$ 28.96	11,100	$ 17,522
Total	**106,760**		**106,760**	

Item 6. Exhibits

(31)(a)	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
(31)(b)	Certification pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.
(32)(a)	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
(32)(b)	Certification pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.
101.1	The following information from CTS Corporation's Quarterly Report on Form 10-Q for the quarter ended September 30, 2019 formatted in Inline XBRL: (i) Condensed Consolidated Statements of Earnings for the three months and nine months ended September 30, 2019 and 2018; (ii) Condensed Consolidated Statements of Comprehensive Income for the three months and nine months ended September 30, 2019 and 2018; (iii) Condensed Consolidated Balance Sheets at September 30, 2019 and December 31, 2018; (iv) Condensed Consolidated Statements of Cash Flows for the nine months ended September 30, 2019 and 2018; (v) Condensed Consolidated Statements of Shareholders' Equity for the three months and nine months ended September 30, 2019 and 2018; (vi) Notes to Condensed Consolidated Financial Statements, tagged as blocks of text and including detailed tags.
104	The cover page from this Current Report on Form 10-Q formatted as inline XBRL

SIGNATURES

Pursuant to the requirements of Section 13 or 15(d) of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

CTS Corporation	**CTS Corporation**
/s/ William M. Cahill	*/s/ Ashish Agrawal*
William M. Cahill Chief Accounting Officer	Ashish Agrawal Vice President and Chief Financial Officer
(Principal Accounting Officer)	(Principal Financial Officer)
Dated: October 24, 2019	Dated: October 24, 2019

EXHIBIT (31)(a)

CERTIFICATION

I, Kieran O’Sullivan, certify that:

1. I have reviewed this quarterly report on Form 10-Q of CTS Corporation:

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; and

   (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 statement for external purposes in accordance with generally accepted accounting principles; and

   (c) evaluated the effectiveness of the registrant’s disclosure controls and procedures and presented in this report our conclusion 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 registrant’s board of directors (or persons performing the equivalent function):

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

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

Date: October 24, 2019

/s/ Kieran O’Sullivan

Kieran O’Sullivan

Chairman, President and Chief Executive Officer

EXHIBIT (31)(b)

CERTIFICATION

I, Ashish Agrawal, certify that:

1. I have reviewed this quarterly report on Form 10-Q of CTS Corporation:
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; and

   (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 statement for external purposes in accordance with generally accepted accounting principles; and

   (c) evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusion 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 registrant's board of directors (or persons performing the equivalent function):

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

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

Date: October 24, 2019

/s/Ashish Agrawal

Ashish Agrawal

Vice President and Chief Financial Officer

EXHIBIT (32)(a)

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

In connection with the quarterly report of CTS Corporation (the Company) on Form 10-Q for the quarter ended September 30, 2019, as filed with the Securities and Exchange Commission on the date hereof (the Report), the undersigned officer of the Company certifies, pursuant to 18 U.S.C. ss. 1350, as adopted pursuant to ss. 906 of the Sarbanes-Oxley Act of 2002, that:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: October 24, 2019

/s/ Kieran O'Sullivan

Kieran O'Sullivan

Chairman, President and Chief Executive Officer

A signed original of this written statement required by Section 906 has been provided to CTS Corporation and will be retained by CTS Corporation and furnished to the Securities and Exchange Commission or its staff upon request.

EXHIBIT (32)(b)

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

In connection with the quarterly report of CTS Corporation (the Company) on Form 10-Q for the quarter ended September 30, 2019, as filed with the Securities and Exchange Commission on the date hereof (the Report), the undersigned officer of the Company certifies, pursuant to 18 U.S.C. ss. 1350, as adopted pursuant to ss. 906 of the Sarbanes-Oxley Act of 2002, that:

(1) the Report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934; and

(2) the information contained in the Report fairly presents, in all material respects, the financial condition and results of operations of the Company.

Date: October 24, 2019	*/s/Ashish Agrawal*
	Ashish Agrawal
	Vice President and Chief Financial Officer

A signed original of this written statement required by Section 906 has been provided to CTS Corporation and will be retained by CTS Corporation and furnished to the Securities and Exchange Commission or its staff upon request.