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 June 27, 2020

Or

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

For the transition period from to

Commission file number: 000-50307

FormFactor, Inc.
(Exact name of registrant as specified in its charter)

Delaware	**13-3711155**
(State or other jurisdiction of incorporation or organization)	(I.R.S. Employer Identification No.)

7005 Southfront Road, Livermore, California 94551
(Address of principal executive offices, including zip code)

(925) 290-4000
(Registrant's telephone number, including area code)

Securities registered pursuant to Section12(b) of the Act:

Title of each class	Trading Symbol(s)	Name of each exchange on which registered
Common stock, $0.001 par value	**FORM**	**Nasdaq Global Market**

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

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

Large Accelerated Filer	☒	Accelerated Filer	☐
Non-accelerated Filer	☐	Smaller Reporting Company	☐
Emerging Growth Company	☐		

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

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

As of July 31, 2020, 77,058,712 shares of the registrant's common stock, par value $0.001 per share, were outstanding.

FORMFACTOR, INC.
FORM 10-Q FOR THE QUARTERLY PERIOD ENDED JUNE 27, 2020
INDEX

PART I - FINANCIAL INFORMATION

Item 1. *Financial Statements*

FORMFACTOR, INC.
CONDENSED CONSOLIDATED BALANCE SHEETS
(In thousands, except share and per share amounts)
(Unaudited)

	June 27, 2020	December 28, 2019
ASSETS		
Current assets:		
Cash and cash equivalents	$ 199,926	$ 144,545
Marketable securities	61,177	76,327
Accounts receivable, net of allowance for doubtful accounts of $226 and $222	86,616	97,868
Inventories, net	87,813	83,258
Restricted cash	1,424	1,981
Prepaid expenses and other current assets	18,458	15,064
Total current assets	455,414	419,043
Restricted cash	1,375	1,411
Operating lease, right-of-use-assets	29,027	31,420
Property, plant and equipment, net of accumulated depreciation	83,662	58,747
Goodwill	200,293	199,196
Intangibles, net	43,785	57,610
Deferred tax assets	69,712	71,252
Other assets	966	1,203
Total assets	$ 884,234	$ 839,882
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable	$ 44,334	$ 40,914
Accrued liabilities	37,620	36,439
Current portion of term loans, net of unamortized issuance costs	21,325	42,846
Deferred revenue	13,789	9,810
Operating lease liabilities	6,168	6,551
Total current liabilities	123,236	136,560
Term loans, less current portion, net of unamortized issuance costs	28,725	15,639
Deferred tax liabilities	6,343	6,986
Long-term operating lease liabilities	26,816	29,088
Other liabilities	8,392	10,612
Total liabilities	193,512	198,885
Stockholders' equity:		
Common stock, $0.001 par value:		
250,000,000 shares authorized; 76,501,459 and 75,764,990 shares issued and outstanding	77	76
Additional paid-in capital	898,069	885,821
Accumulated other comprehensive loss	458	(659)
Accumulated deficit	(207,882)	(244,241)
Total stockholders' equity	690,722	640,997
Total liabilities and stockholders' equity	$ 884,234	$ 839,882

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

FORMFACTOR, INC.
CONDENSED CONSOLIDATED STATEMENTS OF INCOME
(In thousands, except per share amounts)
(Unaudited)

	Three Months Ended		Six Months Ended	
	June 27, 2020	**June 29, 2019**	**June 27, 2020**	**June 29, 2019**
Revenues	$ 157,824	$ 138,018	$ 318,577	$ 270,231
Cost of revenues	91,657	82,666	185,020	162,358
Gross profit	66,167	55,352	133,557	107,873
Operating expenses:				
Research and development	20,919	20,074	42,186	39,797
Selling, general and administrative	22,755	26,283	50,448	51,467
Total operating expenses	43,674	46,357	92,634	91,264
Operating income	22,493	8,995	40,923	16,609
Interest income	376	684	1,061	1,264
Interest expense	(171)	(522)	(489)	(1,117)
Other income (expense), net	(67)	81	(158)	(3)
Income before income taxes	22,631	9,238	41,337	16,753
Provision for income taxes	2,162	2,290	4,978	4,322
Net income	$ 20,469	$ 6,948	$ 36,359	$ 12,431
Net income per share:				
Basic	$ 0.27	$ 0.09	$ 0.48	$ 0.17
Diluted	$ 0.26	$ 0.09	$ 0.46	$ 0.16
Weighted-average number of shares used in per share calculations:				
Basic	76,275	74,478	76,140	74,483
Diluted	78,861	76,189	78,710	76,061

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

FORMFACTOR, INC.
CONDENSED CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)
(Unaudited)

	Three Months Ended		Six Months Ended	
	June 27, 2020	**June 29, 2019**	**June 27, 2020**	**June 29, 2019**
Net income	$ 20,469	$ 6,948	$ 36,359	$ 12,431
Other comprehensive income (loss), net of tax:				
Translation adjustments and other	763	689	364	(228)
Unrealized gains on available-for-sale marketable securities	524	142	497	293
Unrealized gains (losses) on derivative instruments	80	(73)	256	(686)
Other comprehensive income (loss), net of tax	1,367	758	1,117	(621)
Comprehensive income	$ 21,836	$ 7,706	$ 37,476	$ 11,810

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

FORMFACTOR, INC.
CONDENSED CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands, except shares)
(Unaudited)

	Shares	Common Stock	Additional Paid-in Capital	Accumulated Other Comprehensive Loss	Accumulated Deficit	Total
	Six Months Ended June 27, 2020					
Balances, December 28, 2019	75,764,990	$ 76	$ 885,821	$ (659)	$ (244,241)	$ 640,997
Issuance of common stock under the Employee Stock Purchase Plan	311,591	—	4,066	—	—	4,066
Issuance of common stock pursuant to exercise of options	105,769	1	868	—	—	869
Issuance of common stock pursuant to vesting of restricted stock units, net of stock withheld for tax	319,109	—	(3,800)	—	—	(3,800)
Stock-based compensation	—	—	11,114	—	—	11,114
Other comprehensive income	—	—	—	1,117	—	1,117
Net income	—	—	—	—	36,359	36,359
Balances, June 27, 2020	76,501,459	$ 77	$ 898,069	$ 458	$ (207,882)	$ 690,722
	Three Months Ended June 27, 2020					
Balances, March 28, 2020	76,158,251	$ 77	$ 895,600	$ (909)	$ (228,351)	$ 666,417
Issuance of common stock pursuant to exercise of options	50,000	—	422	—	—	422
Issuance of common stock pursuant to vesting of restricted stock units, net of stock withheld for tax	293,208	—	(3,415)	—	—	(3,415)
Stock-based compensation	—	—	5,462	—	—	5,462
Other comprehensive income	—	—	—	1,367	—	1,367
Net income	—	—	—	—	20,469	20,469
Balances, June 27, 2020	76,501,459	$ 77	$ 898,069	$ 458	$ (207,882)	$ 690,722
	Six Months Ended June 29, 2019					
Balances, December 29, 2018	74,139,712	$ 74	$ 862,897	$ 780	$ (283,587)	$ 580,164
Issuance of common stock under the Employee Stock Purchase Plan	301,497	—	3,670	—	—	3,670
Issuance of common stock pursuant to exercise of options	19,207	—	90	—	—	90
Issuance of common stock pursuant to vesting of restricted stock units, net of stock withheld for tax	231,365	1	(2,157)	—	—	(2,156)
Stock-based compensation	—	—	10,524	—	—	10,524
Other comprehensive loss	—	—	—	(621)	—	(621)
Net income	—	—	—	—	12,431	12,431
Balances, June 29, 2019	74,691,781	$ 75	$ 875,024	$ 159	$ (271,156)	$ 604,102
	Three Months Ended June 29, 2019					
Balances, March 30, 2019	74,488,498	$ 74	$ 871,617	$ (599)	$ (278,104)	$ 592,988
Issuance of common stock pursuant to vesting of restricted stock units, net of stock withheld for tax	203,283	1	(1,855)	—	—	(1,854)
Stock-based compensation	—	—	5,262	—	—	5,262
Other comprehensive income	—	—	—	758	—	758
Net income	—	—	—	—	6,948	6,948
Balances, June 29, 2019	74,691,781	$ 75	$ 875,024	$ 159	$ (271,156)	$ 604,102

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

FORMFACTOR, INC.
CONDENSED CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)
(Unaudited)

	Six Months Ended	
	June 27, 2020	**June 29, 2019**
Cash flows from operating activities:		
Net income	$ 36,359	$ 12,431
Adjustments to reconcile net income to net cash provided by operating activities:		
Depreciation	9,240	8,289
Amortization	13,717	14,169
Reduction in the carrying amount of right-of-use assets	2,419	2,620
Stock-based compensation expense	11,265	10,584
Provision for excess and obsolete inventories	6,407	5,304
Gain on contingent consideration	(3,700)	—
Other adjustments to reconcile net income to net cash provided by operating activities	1,327	(173)
Changes in assets and liabilities:		
Accounts receivable	11,364	24,177
Inventories	(11,089)	(11,574)
Prepaid expenses and other current assets	(3,271)	1,838
Other assets	248	(572)
Accounts payable	5,247	(11,115)
Accrued liabilities	1,529	(309)
Other liabilities	292	(93)
Deferred revenues	3,855	2,216
Operating lease liabilities	(2,762)	(2,416)
Net cash provided by operating activities	82,447	55,376
Cash flows from investing activities:		
Acquisition of property, plant and equipment	(36,743)	(11,460)
Proceeds from sale of a subsidiary	82	56
Purchases of marketable securities	(19,726)	(20,776)
Proceeds from maturities and sales of marketable securities	35,410	19,710
Net cash used in investing activities	(20,977)	(12,470)
Cash flows from financing activities:		
Proceeds from issuances of common stock	4,935	3,870
Tax withholdings related to net share settlements of equity awards	(3,800)	(2,157)
Proceeds from term loan debt	18,000	—
Principal repayments on term loans	(26,322)	(18,750)
Payment of term loan debt issuance costs	(78)	—
Net cash used in financing activities	(7,265)	(17,037)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	583	279
Net increase in cash, cash equivalents and restricted cash	54,788	26,148
Cash, cash equivalents and restricted cash, beginning of period	147,937	100,546
Cash, cash equivalents and restricted cash, end of period	$ 202,725	$ 126,694
Non-cash investing and financing activities:		
Change in accounts payable and accrued liabilities related to property, plant and equipment purchases	$ 2,274	$ (2,497)
Operating lease, right-of-use assets obtained in exchange for lease obligations	428	35,885
Supplemental disclosure of cash flow information:		
Cash paid for income taxes, net	$ 4,133	$ 1,700
Cash paid for interest	473	778

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

Note 1 — Basis of Presentation and New Accounting Pronouncements

Basis of Presentation

The accompanying condensed consolidated financial information of FormFactor, Inc. is unaudited and has been prepared in accordance with accounting principles generally accepted in the United States of America (“GAAP”) and pursuant to the rules and regulations of the Securities and Exchange Commission ("SEC"). However, such information reflects all adjustments, consisting only of normal recurring adjustments, which are, in the opinion of management, necessary for a fair presentation of the financial position, results of operations and cash flows for the interim periods. The financial information as of December 28, 2019 is derived from our 2019 Annual Report on Form 10-K. The condensed consolidated financial statements included herein should be read in conjunction with the consolidated financial statements and the notes thereto included in our 2019 Annual Report on Form 10-K filed with the SEC on February 21, 2020. The results of operations for the interim periods presented are not necessarily indicative of the results to be expected for the full year.

Fiscal Year

We operate on a 52/53 week fiscal year, whereby the fiscal year ends on the last Saturday of December. Fiscal 2020 and 2019 each contain 52 weeks and the six months ended June 27, 2020 and June 29, 2019 each contained 26 weeks. Fiscal 2020 will end on December 26, 2020.

Significant Accounting Policies

Our significant accounting policies have not changed during the six months ended June 27, 2020 from those disclosed in our Annual Report on Form 10-K for the year ended December 28, 2019.

Reclassifications

Certain immaterial reclassifications were made to the prior year financial statements to conform to the current year presentation.

New Accounting Pronouncements

ASU 2016-13

In June 2016, the Financial Accounting Standard Board ("FASB") issued Accounting Standards Update ("ASU") No. 2016-13, "Measurement of Credit Losses on Financial Instruments (Topic 326)." The provisions of this standard require financial assets measured at amortized cost to be presented at the net amount expected to be collected. An allowance account would be established to present the net carrying value at the amount expected to be collected. ASU 2016-13 also provides that credit losses relating to available-for-sale debt securities should be recorded through an allowance for credit losses. The guidance was amended through various ASU's subsequent to ASU 2016-13, all of which was effective for us beginning fiscal 2020. We adopted ASU 2016-13 on a prospective basis on December 29, 2019, the first day of fiscal 2020. The adoption did not have a material effect on our financial position, results of operations or cash flows.

ASU 2018-15

In August 2018, the FASB issued ASU 2018-15, "Intangibles-Goodwill and Other-Internal-Use Software (Subtopic 350-40): Customer’s Accounting for Implementation Costs Incurred in a Cloud Computing Arrangement That Is a Service Contract." The new guidance clarifies the accounting for implementation costs in cloud computing arrangements. ASU 2018-15 is effective for fiscal years, including interim periods within those fiscal years, beginning after December 15, 2019. We adopted ASU 2018-15 on a prospective basis on December 29, 2019, the first day of fiscal 2020. The adoption did not have a material effect on our financial position, results of operations or cash flows.

ASU 2019-12

In December 2019, the FASB issued ASU 2019-12, “Income Taxes (Topic 740),” which simplifies the accounting for income taxes by removing certain exceptions to the general principles in Topic 740. The amendments also improve consistent application of and simplify GAAP for other areas of Topic 740 by clarifying and amending existing guidance. This guidance is effective for fiscal years, and interim periods within those fiscal years, beginning after December 15, 2020. Early adoption of the amendments is permitted, including adoption in any interim period for which financial statements have not yet been issued. Depending on the amendment, adoption may be applied on the retrospective, modified retrospective or prospective basis. We have not yet determined the impact of this standard on our financial position, results of operations or cash flows.

ASU 2020-04

In March 2020, the FASB issued ASU 2020-04, "Referenced Rate Reform (Topic 848) - Facilitation of the Effects of Reference Rate Reform on Financial Reporting." The amendments in this update apply only to contracts and hedging relationships that reference LIBOR or another reference rate expected to be discontinued due to reference rate reform. The expedients and exceptions provided by the amendments do not apply to contract modifications made and hedging relationships entered into or evaluated after December 31, 2022. The amendments in this update are elective and are effective upon issuance for all entities. We have not yet evaluated the transition approach for our LIBOR indexed contracts and have not determined whether we will be electing such expedients and exceptions.

Note 2 — Concentration of Credit and Other Risks

Each of the following customers accounted for 10% or more of our revenues for the periods indicated:

	Three Months Ended		Six Months Ended	
	June 27, 2020	June 29, 2019	June 27, 2020	June 29, 2019
Intel Corporation	36.1 %	26.1 %	36.2 %	23.8 %
Samsung Electronics., LTD.	*	11.1 %	*	12.4 %
Micron Technology, Inc.	*	10.1 %	*	*
	36.1 %	47.3 %	36.2 %	36.2 %

*Represents less than 10% of total revenues.

At June 27, 2020, two customers accounted for 15.8% and 18.1% of gross accounts receivable, respectively. At December 28, 2019, three customers accounted for 25.7%, 15.1% and 11.5% of gross accounts receivable, respectively.

Note 3 — Inventories, net

Inventories are stated at the lower of cost (principally standard cost, which approximates actual cost on a first in, first out basis) or net realizable value.

Inventories, net, consisted of the following (in thousands):

	June 27, 2020	December 28, 2019
Raw materials	$ 39,743	$ 38,528
Work-in-progress	31,530	29,720
Finished goods	16,540	15,010
	$ 87,813	$ 83,258

Note 4 — Acquisition

On October 9, 2019, we acquired 100% of the shares of FRT GmbH ("FRT"), a German-based company, for total consideration of $26.9 million, net of cash acquired of $1.7 million. The fair value of the purchase consideration was comprised of a $22.2 million cash payment and $6.5 million of contingent consideration as of October 9, 2019.

We estimated the acquisition price and the allocation of fair value to assets acquired and liabilities assumed as of the acquisition date, October 9, 2019. We subsequently made certain immaterial adjustments to the acquisition price allocation related to acquired assets and assumed liabilities, including to intangibles assets. Our purchase accounting remains open at June 27, 2020, subject to finalization of the fair value of certain acquired assets and liabilities. The estimated fair value of assets acquired, including goodwill and intangibles, and liabilities assumed is as follows (in thousands):

	Amount
Cash and cash equivalents	$ 1,687
Accounts receivable	3,079
Inventory	2,643
Property, plant and equipment	696
Operating lease, right of use assets	335
Prepaid expenses and other current assets	838
Tangible assets acquired	9,278
Customer deposits	(1,933)
Accounts payable and accrued liabilities	(1,182)
Operating lease liabilities	(335)
Deferred tax liabilities	(5,757)
Total tangible assets acquired and liabilities assumed	71
Intangible assets	17,429
Goodwill	11,123
Net Assets Acquired	$ 28,623

The intangible assets as of the closing date of the acquisition included (in thousands):

	Amount	Weighted Average Useful Life (in years)
Developed technologies	$ 12,505	8.0
Customer relationships	3,071	6.0
Backlog	1,645	0.5
Trade names	208	2.0
Total intangible assets	$ 17,429	7.0

Indications of fair value of the intangible assets acquired in connection with the acquisition were determined using either the income, market or replacement cost methodologies. The intangible assets are being amortized over periods which reflect the pattern in which economic benefits of the assets are expected to be realized.

The contingent consideration is a cash amount equal to 1.5x Earnings Before Interest and Tax ("EBIT") as defined in the purchase agreement, from a minimum of zero up to a maximum of €10.3 million, payable subject to the performance of the acquired business in calendar 2020. For purchase accounting, we estimated the fair value of contingent consideration using a probability weighted approach. Key assumptions in determining the fair value of contingent consideration include estimating the probability of achieving certain EBIT levels and discounting at an appropriate discount rate. See Note 8, *Fair Value and Derivative Instruments*, for further discussion on the fair value of contingent consideration.

This acquisition strengthens our leadership in test and measurement by expanding our addressable market into 3D hybrid surface metrology and extending the optical applications scope of our existing Systems segment.

Separate from the purchase agreement, on October 25, 2019, we entered into a term loan agreement with a lender for an aggregate amount of $23.4 million to finance the acquisition. See Note 6, *Debt*, for further discussion of the term loan agreement.

Identifiable Intangible Assets

Valuation of intangible assets involves multiple assumptions. The key assumptions are described below.

Developed technologies acquired primarily consists of existing technology related to hybrid 3D surface metrology measurement equipment. We valued the developed technologies using the multi-period excess earnings method under the income approach. Using this approach, the estimated fair values were calculated using expected future cash flows from specific products discounted to their net present values at an appropriate risk-adjusted rate of return.

Customer relationships represent the fair value of future projected revenues that will be derived from the sale of products to FRT's existing customers. We valued customer relationships using the incremental cash flow method. This method estimates value based on the incremental cash flow afforded by having the customers relationships in place on the acquisition date versus having no relationships in place and needing to replicate or replace those relationships. The incremental cash flows are then discounted to a present value to arrive at an estimate of fair value for this asset class.

Backlog represents business under existing contractual obligations. Expected cash flow from backlog was valued on a direct cash flow basis.

The identified trade names intangible relates to the estimated fair value of future cash flows related to the FRT brand. We valued trade names by applying the relief-from-royalty method under the income approach. This method is based on the application of a royalty rate to forecasted revenue under the trade name.

Goodwill

The excess of purchase price over the fair value assigned to the assets acquired and liabilities assumed represents the amount of goodwill resulting from the acquisition. We believe the factors that contributed to goodwill include synergies that are specific to our consolidated business, such as cost savings and operational efficiencies, and the acquisition of a talented workforce that expands our expertise in business development and commercializing semiconductor test products, none of which qualify for recognition as a separate intangible asset. We do not expect any portion of this goodwill to be deductible for tax purposes. The goodwill attributable to the acquisition was recorded as a non-current asset and is not amortized, but is subject to an annual review for impairment.

The goodwill arising from the acquisition was allocated to the FRT reporting unit within the Systems reportable segment.

We have not presented unaudited combined pro forma financial information as the FRT acquisition was not significant to our consolidated results of operations and financial position.

Note 5 — Goodwill and Intangible Assets

Goodwill by reportable segment was as follows (in thousands):

	Probe Cards	Systems	Total
Goodwill, gross, as of December 29, 2018	$ 172,482	$ 16,732	$ 189,214
Addition - FRT GmbH Acquisition	—	10,148	10,148
Foreign currency translation	—	(166)	(166)
Goodwill, gross, as of December 28, 2019	172,482	26,714	199,196
Addition - FRT GmbH Acquisition	—	975	975
Foreign currency translation	—	122	122
Goodwill, gross, as of June 27, 2020	$ 172,482	$ 27,811	$ 200,293

No goodwill impairments have been recorded during the six months ended June 27, 2020 and the twelve months ended December 28, 2019.

Intangible assets were as follows (in thousands):

Intangible Assets	June 27, 2020			December 28, 2019		
	Gross	Accumulated Amortization	Net	Gross	Accumulated Amortization	Net
Developed technologies	$ 155,766	$ 125,918	$ 29,848	$ 154,951	$ 116,138	$ 38,813
Trade names	7,817	7,125	692	7,816	6,976	840
Customer relationships	43,217	29,972	13,245	44,229	27,057	17,172
Backlog	1,682	1,682	—	1,676	891	785
	$ 208,482	$ 164,697	$ 43,785	$ 208,672	$ 151,062	$ 57,610

Amortization expense was included in our Condensed Consolidated Statements of Income as follows (in thousands):

	Three Months Ended		Six Months Ended	
	June 27, 2020	June 29, 2019	June 27, 2020	June 29, 2019
Cost of revenues	$ 4,926	$ 4,711	$ 10,676	$ 9,430
Selling, general and administrative	1,528	2,368	3,041	4,739
	$ 6,454	$ 7,079	$ 13,717	$ 14,169

The estimated future amortization of intangible assets is as follows (in thousands):

Fiscal Year	Amount
Remainder of 2020	$ 12,551
2021	14,796
2022	5,605
2023	3,864
2024	2,122
Thereafter	4,847
	$ 43,785

Note 6 — Debt

Our debt consisted of the following (in thousands):

	June 27, 2020	December 28, 2019
Term loans	$ 50,128	$ 58,514
Less unamortized issuance costs	(78)	(29)
Term loans less issuance costs	$ 50,050	$ 58,485

Future principal and interest payments on our term loans as of June 27, 2020, based on the interest rate in effect at that date were as follows (in thousands):

	Payments Due In Fiscal Year						
	Remainder 2020	2021	2022	2023	2024	Thereafter	Total
Term loans - principal payments	$ 16,912	$ 8,845	$ 8,873	$ 1,050	$ 1,080	$ 13,368	$ 50,128
Term loans - interest payments [1]	328	537	392	293	273	1,445	3,268
Total	$ 17,240	$ 9,382	$ 9,265	$ 1,343	$ 1,353	$ 14,813	$ 53,396

[1] Represents our minimum interest payment commitments at 1.92% per annum for the Building Term Loan and 1.59% per annum for the FRT Term Loan and 2.18% per annum for the CMI Term Loan.

CMI Term Loan

On June 24, 2016, we entered into a Credit Agreement (the “Credit Agreement”) with HSBC Bank USA, National Association ("HSBC"), as administrative agent, co-lead arranger, sole bookrunner and syndication agent, other lenders that may from time-to-time be a party to the Credit Agreement, and certain guarantors. Pursuant to the Credit Agreement, the lenders have provided us with a senior secured term loan facility of $150 million (the “CMI Term Loan”). The proceeds of the CMI Term Loan were used to finance a portion of the purchase price paid in connection with the Cascade Microtech acquisition in fiscal 2016 and to pay related bank fees and expenses.

The CMI Term Loan bears interest at a rate equal to, at our option, (i) the applicable London Interbank Offered Rate ("LIBOR") rate plus 2.00% per annum or (ii) Base Rate (as defined in the Credit Agreement) plus 1.00% per annum. We have currently elected to pay interest at 2.00% over the one-month LIBOR rate. Interest payments are payable in monthly installments over a five-year period. The interest rate at June 27, 2020 was 2.41%.

The principal payments on the CMI Term Loan are paid in equal quarterly installments that began June 30, 2016, in an annual amount equal to 5% for year one, 10% for year two, 20% for year three, 30% for year four and 35% for year five. The planned final payment on the CMI Term Loan is scheduled for the third quarter of fiscal 2020.

On July 25, 2016, we entered into an interest rate swap agreement with HSBC and other lenders to hedge the interest payments on the CMI Term Loan for the notional amount of $95.6 million. As future levels of LIBOR over the life of the loan are uncertain, we entered into these interest-rate swap agreements to hedge the exposure in interest rate risks associated with movement in LIBOR rates. By entering into the agreements, we convert a floating rate interest at one-month LIBOR plus 2% into a fixed rate interest at 2.939%. The interest rate swap agreement ended as of March 27, 2020.

The obligations under the Term Loan are guaranteed by substantially all of our assets and the assets of our domestic subsidiaries, subject to certain customary exceptions.

The Credit Agreement contains negative covenants customary for financing of this type, as well as certain financial maintenance covenants. As of June 27, 2020, the balance outstanding pursuant to the CMI Term Loan was $12.5 million and we were in compliance with all covenants under the Credit Agreement. The CMI Term loan was subsequently fully paid as of June 30, 2020.

FRT Term Loan

On October 25, 2019, we entered into a $23.4 million three-year credit facility loan agreement (the "FRT Term Loan") with HSBC Trinkaus & Burkhardt AG, Germany, to fund the acquisition of FRT GmbH, which we acquired on October 9, 2019. See Note 4, *Acquisition*, for further details of the acquisition.

The FRT Term Loan bears interest at a rate equal to the Euro Interbank Offered Rate ("EURIBOR") plus 1.75% per annum and will be repaid in quarterly installments of approximately $1.9 million plus interest. The interest rate at June 27, 2020 was 1.36%

The obligations under the FRT Term Loan are fully and unconditionally guaranteed by FormFactor, Inc. The FRT Term Loan contains negative covenants customary for financing of this type, including covenants that place limitations on the incurrence of additional indebtedness, the creation of liens, the payment of dividends; dispositions; fundamental changes, including mergers and acquisitions; loans and investments; sale leasebacks; negative pledges; transactions with affiliates; changes in fiscal year; sanctions and anti-bribery laws and regulations, and modifications to charter documents in a manner materially adverse to the Lenders. The FRT Term Loan also contains affirmative covenants and representations and warranties customary for financing of this type. As of June 27, 2020, the balance outstanding pursuant to the FRT term loan was $19.6 million and we were in compliance with all covenants.

Building Term Loan

On June 22, 2020, we entered into an $18.0 million 15-year credit facility loan agreement (the “Building Term Loan”) with MUFG Union Bank, National Association ("Union Bank"). The proceeds of the Building Term Loan were used to purchase a building adjacent to our leased facilities in Livermore, California.

The Building Term Loan bears interest at a rate equal to the applicable LIBOR rate plus 1.75% per annum. Interest payments are payable in monthly installments over a fifteen-year period. The interest rate at June 27, 2020 was 1.92%.

On March 17, 2020, we entered into an interest rate swap agreement with Union Bank to hedge the interest payments on the Building Term Loan for the notional amount of $18.0 million. As future levels of LIBOR over the life of the loan are uncertain, we entered into this interest-rate swap agreement to hedge the exposure in interest rate risks associated with movement in LIBOR rates. By entering into the agreement, we convert a floating rate interest at one-month LIBOR plus 1.75% into a fixed rate interest at 2.75%. The interest rate swap also includes a 0% floor that is effective for one year from the date of the swap. As of June 27, 2020, the notional amount of the loan that is subject to this interest rate swap is $18.0 million. See Note 8, *Fair Value and Derivative Instruments*, for additional information.

The obligations under the Building Term Loan are guaranteed by a deed of trust covering certain real property and improvements and certain personal property used in connection therewith. The deed of trust creates a first priority lien or encumbrance on the property with only such exceptions as may be approved by the Union Bank in writing.

The Credit Agreement contains covenants customary for financing of this type. As of June 27, 2020, the balance outstanding pursuant to the Building Term Loan was $18.0 million and we were in compliance with all covenants under the Credit Agreement.

Note 7 — Accrued Liabilities

Accrued liabilities consisted of the following (in thousands):

	June 27, 2020	December 28, 2019
Accrued compensation and benefits	$ 24,269	$ 21,329
Accrued income and other taxes	4,850	6,846
Accrued warranty	2,061	1,942
Accrued employee stock purchase plan contributions withheld	3,678	3,331
Other accrued expenses	2,762	2,991
	$ 37,620	$ 36,439

Note 8 — Fair Value and Derivative Instruments

Whenever possible, the fair values of our financial assets and liabilities are determined using quoted market prices of identical securities or quoted market prices of similar securities from active markets. The three levels of inputs that may be used to measure fair value are as follows:

- Level 1 valuations are obtained from real-time quotes for transactions in active exchange markets involving identical securities;
- Level 2 valuations utilize significant observable inputs, such as quoted prices for similar assets or liabilities, quoted prices near the reporting date in markets that are less active, or other inputs that are observable or can be corroborated by observable market data for substantially the full term of the assets or liabilities; and
- Level 3 valuations utilize unobservable inputs to the valuation methodology and include our own data about assumptions market participants would use in pricing the asset or liability based on the best information available under the circumstances.

We did not have any transfers of assets or liabilities measured at fair value on a recurring basis to or from Level 1, Level 2 or Level 3 during the three and six months ended June 27, 2020 or the year ended December 28, 2019.

The carrying values of Cash, Accounts receivable, net, Restricted cash, Prepaid expenses and other current assets, Accounts payable, Accrued liabilities, and Current portion of term loans, net of unamortized issuance costs, approximate fair value due to their short maturities.

No changes were made to our valuation techniques during the first six months of fiscal 2020.

Assets and Liabilities Measured at Fair Value on a Recurring Basis

Assets and liabilities measured at fair value on a recurring basis were as follows (in thousands):

June 27, 2020	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets:				
Cash equivalents:				
Money market funds	$ 96,474	$ —	$ —	$ 96,474
Marketable securities:				
U.S. treasuries	33,279	—	—	33,279
Certificates of deposit	—	3,157	—	3,157
U.S. agency securities	—	2,643	—	2,643
Corporate bonds	—	19,949	—	19,949
Commercial paper	—	2,149	—	2,149
	33,279	27,898	—	61,177
Foreign exchange derivative contracts	—	153	—	153
Total assets	$ 129,753	$ 28,051	$ —	$ 157,804
Liabilities:				
Interest rate swap derivative contracts	$ —	$ (256)	$ —	$ (256)
Contingent consideration	—	—	(2,862)	(2,862)
Total liabilities	$ —	$ (256)	$ (2,862)	$ (3,118)

December 28, 2019	**Level 1**	**Level 2**	**Level 3**	**Total**
Assets:				
Cash equivalents:				
Money market funds	$ 17,056	$ —	$ —	$ 17,056
Marketable securities:				
U.S. treasuries	10,468	—	—	10,468
Certificates of deposit	—	3,590	—	3,590
U.S. agency securities	—	24,430	—	24,430
Corporate bonds	—	33,928	—	33,928
Commercial paper	—	3,911	—	3,911
	10,468	65,859	—	76,327
Foreign exchange derivative contracts	—	41	—	41
Interest rate swap derivative contracts	—	26	—	26
Total assets	$ 27,524	$ 65,926	$ —	$ 93,450
Liabilities:				
Foreign exchange derivative contracts	$ —	$ (240)	$ —	$ (240)
Contingent consideration	—	—	(5,364)	(5,364)
Total liabilities	$ —	$ (240)	$ (5,364)	$ (5,604)

Cash Equivalents

The fair value of our cash equivalents is determined based on quoted market prices for similar or identical securities.

Marketable Securities

We classify our marketable securities as available-for-sale and value them utilizing a market approach. Our investments are priced by pricing vendors who provide observable inputs for their pricing without applying significant judgment. Broker pricing is used mainly when a quoted price is not available, the investment is not priced by our pricing vendors or when a broker price is more reflective of fair value. Our broker-priced investments are categorized as Level 2 investments because fair value is based on similar assets without applying significant judgments. In addition, all investments have a sufficient trading volume to demonstrate that the fair value is appropriate.

Unrealized gains and losses were immaterial and were recorded as a component of Accumulated other comprehensive income in our Condensed Consolidated Balance Sheets. We did not have any other-than-temporary unrealized gains or losses at either period end included in these financial statements.

Contingent Consideration

Contingent consideration, arising from the acquisition of FRT, is a cash amount equal to 1.5x EBIT as defined in the purchase agreement, up to a maximum of €10.3 million, payable subject to the performance of the acquired business in calendar 2020. We estimated the fair value of contingent consideration using a probability weighted approach. Key assumptions in determining the fair value of contingent consideration include estimating EBIT levels that are likely to be achieved during the performance period and discounting at an appropriate discount rate. Contingent consideration as of June 27, 2020 was estimated to be $2.9 million, a net decrease of $2.5 million from $5.4 million as of December 28, 2019. The net decrease was as a result of a $1.2 million increase in the estimated contingent consideration upon acquisition and as part of purchase accounting that was adjusted in the first fiscal quarter of 2020, offset by a $3.7 million decrease in the estimated contingent consideration from subsequent remeasurement of the liability.

Interest Rate Swaps

The fair value of our interest rate swap contracts is determined at the end of each reporting period based on valuation models that use interest rate yield curves as inputs. For accounting purposes, our interest rate swap contracts qualify for, and are designated as, cash flow hedges. The cash flows associated with the interest rate swaps are reported in Net cash provided by operating activities in our Condensed Consolidated Statements of Cash Flows and the fair value of the interest rate swap contracts are recorded within Accrued liabilities and Other liabilities in our Condensed Consolidated Balance Sheets.

The impact of the interest rate swaps on our Condensed Consolidated Statements of Income was as follows (in thousands):

	Amount of Gain or (Loss) Recognized in OCI on Derivative (Effective Portion)	Location of Gain or (Loss) Reclassified from Accumulated OCI into Income (Effective Portion)	Amount of Gain or (Loss) Reclassified from Accumulated OCI into Income (Effective Portion)	Location of Gain or (Loss) Recognized in Income on Derivative (Ineffective Portion)	Amount of Gain or (Loss) Recognized in Income on Derivative (Ineffective Portion)
Three Months Ended June 27, 2020	$ (174)	Interest expense	$ (10)	Interest expense	$ —
Three Months Ended June 29, 2019	$ (62)	Interest expense	$ 175	Interest expense	$ —
Six Months Ended June 27, 2020	$ (270)	Interest expense	$ 12	Interest expense	$ —
Six Months Ended June 29, 2019	$ (90)	Interest expense	$ 383	Interest expense	$ —

Foreign Exchange Derivative Contracts

We operate and sell our products in various global markets. As a result, we are exposed to changes in foreign currency exchange rates. We utilize foreign currency forward contracts to hedge against future movements in foreign exchange rates that affect certain existing foreign currency denominated assets and liabilities and forecasted foreign currency revenue and expense transactions. Under this program, our strategy is to have increases or decreases in our foreign currency exposures mitigated by gains or losses on the foreign currency forward contracts in order to mitigate the risks and volatility associated with foreign currency transaction gains or losses.

We do not use derivative financial instruments for speculative or trading purposes. For accounting purposes, certain of our foreign currency forward contracts are not designated as hedging instruments and, accordingly, we record the fair value of these contracts as of the end of our reporting period in our Condensed Consolidated Balance Sheets with changes in fair value recorded within Other expense, net in our Condensed Consolidated Statement of Income for both realized and unrealized gains and losses. Certain of our foreign currency forward contracts are designated as cash flow hedges, and, accordingly, we record the fair value of these contracts as of the end of our reporting period in our Condensed Consolidated Balance Sheets with changes in fair value recorded as a component of Accumulated other comprehensive loss and reclassified into earnings in the same period in which the hedged transaction affects earnings, and in the same line item on the Condensed Consolidated Statements of Income as the impact of the hedge transaction. At June 27, 2020, we expect to reclassify $0.2 million of the amount accumulated in Other comprehensive loss to earnings during the next 12 months, due to the recognition in earnings of the hedged forecasted transactions.

The fair value of our foreign exchange derivative contracts was determined based on current foreign currency exchange rates and forward points. All of our foreign exchange derivative contracts outstanding at June 27, 2020 will mature by the second quarter of fiscal 2021.

The following table provides information about our foreign currency forward contracts outstanding as of June 27, 2020 (in thousands):

Currency	Contract Position	Contract Amount (Local Currency)	Contract Amount (U.S. Dollars)
Euro Dollar	Buy	(1,897)	$ (1,996)
Japanese Yen	Sell	1,475,099	13,766
Korean Won	Buy	(2,613,516)	(2,182)
Total USD notional amount of outstanding foreign exchange contracts			$ 9,588

Our foreign currency contracts are classified within Level 2 of the fair value hierarchy as they are valued using pricing models that utilize observable market inputs.

The impact of foreign exchange derivative contracts not designated as cash flow hedges on our Condensed Consolidated Statements of Income was as follows (in thousands):

		Amount of Gain (Loss) Recognized on Derivatives			
		Three Months Ended		Six Months Ended	
Derivatives Not Designated as Hedging Instruments	Location of Gain (Loss) Recognized on Derivatives	June 27, 2020	June 29, 2019	June 27, 2020	June 29, 2019
Foreign exchange forward contracts	Other expense, net	$ 234	$ 587	$ 349	$ 273

The impact of foreign exchange derivative contracts designated as cash flow hedges on our Condensed Consolidated Statements of Income was as follows (in thousands):

	Amount of Loss Recognized in Accumulated OCI on Derivative	Location of Loss Reclassified from Accumulated OCI into Income	Amount of Loss Reclassified from Accumulated OCI into Income
Three Months Ended June 27, 2020	$ 52	Cost of revenues	$ 139
		Research and development	17
		Selling, general and administrative	35
			$ 191
Three Months Ended June 29, 2019	$ 213	Cost of revenues	$ 139
		Research and development	12
		Selling, general and administrative	32
			$ 183
Six Months Ended June 27, 2020	$ 126	Cost of revenues	$ 258
		Research and development	35
		Selling, general and administrative	79
			$ 372
Six Months Ended June 29, 2019	$ 213	Cost of revenues	$ 171
		Research and development	19
		Selling, general and administrative	51
			$ 241

Assets and Liabilities Measured at Fair Value on a Non-Recurring Basis

We measure and report our non-financial assets such as Property, plant and equipment, Goodwill and Intangible assets at fair value on a non-recurring basis if we determine these assets to be impaired or in the period when we make a business acquisition. Other than as discussed in Note 4, *Acquisition*, there were no assets or liabilities measured at fair value on a nonrecurring basis during the three and six months ended June 27, 2020 or June 29, 2019.

Note 9 — Warranty

We offer warranties on certain products and record a liability for the estimated future costs associated with warranty claims at the time revenue is recognized. The warranty liability is based upon historical experience and our estimate of the level of future costs. While we engage in product quality programs and processes, our warranty obligation is affected by product failure rates, material usage and service delivery costs. We continuously monitor product returns for warranty and maintain a reserve for the related expenses based upon our historical experience and any specifically identified failures. As we sell new products to our customers, we must exercise considerable judgment in estimating the expected failure rates. This estimating process is based on historical experience of similar products, as well as various other assumptions that we believe to be reasonable under the circumstances. We provide for the estimated cost of product warranties at the time revenue is recognized as a component of Cost of revenues in our Condensed Consolidated Statement of Income.

Changes in our warranty liability were as follows (in thousands):

	Six Months Ended	
	June 27, 2020	**June 29, 2019**
Balance at beginning of period	$ 1,942	$ 2,102
Accruals	2,116	1,648
Settlements	(1,997)	(1,923)
Balance at end of period	$ 2,061	$ 1,827

Note 10 — Property, Plant and Equipment, net

Property, plant and equipment, net consisted of the following (in thousands):

	June 27, 2020	**December 28, 2019**
Land	$ 4,751	$ —
Machinery and equipment	207,199	201,861
Computer equipment and software	35,844	35,192
Furniture and fixtures	6,938	6,756
Leasehold improvements	77,470	76,081
Sub-total	332,202	319,890
Less: Accumulated depreciation and amortization	(281,539)	(273,001)
Net, property, plant and equipment	50,663	46,889
Construction-in-process	32,999	11,858
Total	$ 83,662	$ 58,747

Note 11 — Stockholders' Equity and Stock-Based Compensation

Restricted Stock Units

Restricted stock unit ("RSU") activity under our equity incentive plan was as follows:

	Units	Weighted Average Grant Date Fair Value
RSUs at December 28, 2019	3,069,000	$ 14.30
Awards granted	65,686	23.92
Awards vested	(465,440)	14.84
Awards forfeited	(29,552)	14.23
RSUs at June 27, 2020	2,639,694	14.45

Performance Restricted Stock Units

We may grant Performance RSUs ("PRSUs") to certain executives, which vest based upon us achieving certain market performance criteria. There were no PRSUs granted during the six months ended June 27, 2020. PRSUs are included as part of the RSU activity above.

Stock Options

Stock option activity under our equity incentive plan was as follows:

	Options Outstanding	Weighted Average Exercise Price	Weighted Average Remaining Contractual Life in Years	Aggregate Intrinsic Value
Outstanding at December 28, 2019	361,769	$ 8.35		
Options exercised	(105,769)	8.21		
Outstanding at June 27, 2020	256,000	$ 8.41	1.63	$ 4,816,740
Vested and expected to vest at June 27, 2020	256,000	$ 8.41	1.63	$ 4,816,740
Exercisable at June 27, 2020	256,000	$ 8.41	1.63	$ 4,816,740

Employee Stock Purchase Plan

Information related to activity under our Employee Stock Purchase Plan ("ESPP") was as follows:

	Six Months Ended June 27, 2020
Shares issued	311,591
Weighted average per share purchase price	$ 13.05
Weighted average per share discount from the fair value of our common stock on the date of issuance	$ 12.26

Stock-Based Compensation

Stock-based compensation was included in our Condensed Consolidated Statements of Income as follows (in thousands):

	Three Months Ended		Six Months Ended	
	June 27, 2020	June 29, 2019	June 27, 2020	June 29, 2019
Cost of revenues	$ 901	$ 964	$ 1,838	$ 1,914
Research and development	1,389	1,582	2,828	3,101
Selling, general and administrative	3,352	2,743	6,599	5,569
Total stock-based compensation	$ 5,642	$ 5,289	$ 11,265	$ 10,584

Unrecognized Compensation Costs

At June 27, 2020, the unrecognized stock-based compensation was as follows (dollars in thousands):

	Unrecognized Expense	Average Expected Recognition Period in Years
Restricted stock units	$ 17,242	1.61
Performance restricted stock units	4,518	1.64
Employee stock purchase plan	165	0.10
Total unrecognized stock-based compensation expense	$ 21,925	1.61

Note 12 — Net Income per Share

The following table reconciles the shares used in calculating basic net income per share and diluted net income per share (in thousands):

	Three Months Ended		Six Months Ended	
	June 27, 2020	June 29, 2019	June 27, 2020	June 29, 2019
Weighted-average shares used in computing basic net income per share	76,275	74,478	76,140	74,483
Add potentially dilutive securities	2,586	1,711	2,570	1,578
Weighted-average shares used in computing diluted net income per share	78,861	76,189	78,710	76,061
Securities not included as they would have been antidilutive	—	263	13	252

Note 13 — Commitments and Contingencies

Leases

See Note 14, *Leases*.

Contractual Obligations and Commitments

Our contractual obligations and commitments have not materially changed as of June 27, 2020 from those disclosed in our Annual Report on Form 10-K for the year ended December 28, 2019.

Legal Matters

From time to time, we may be subject to legal proceedings and claims in the ordinary course of business. As of June 27, 2020, and as of the filing of this Quarterly Report on Form 10-Q, we were not involved in any material legal proceedings.

Note 14 — Leases

We lease real estate space under non-cancelable operating lease agreements for commercial and industrial space, as well as for our corporate headquarters located in Livermore, California. Our leases have remaining terms of 1 to 15 years, and some leases include options to extend up to 20 years. We also have operating leases for automobiles with remaining lease terms of 1 to 4 years. We did not include any of our renewal options in our lease terms for calculating our lease liability as the renewal options allow us to maintain operational flexibility and we are not reasonably certain we will exercise these options at this time. The weighted-average remaining lease term for our operating leases was 7 years as of June 27, 2020 and the weighted-average discount rate was 4.70%.

The components of lease expense were as follows (in thousands):

	Three Months Ended		Six Months Ended	
	June 27, 2020	June 29, 2019	June 27, 2020	June 29, 2019
Lease expense:				
Operating lease expense	$ 1,794	$ 1,734	$ 3,719	$ 3,479
Short-term lease expense	27	31	66	48
Variable lease expense	399	249	782	668
	$ 2,220	$ 2,014	$ 4,567	$ 4,195

Future minimum payments under our non-cancelable operating leases were as follows as of June 27, 2020 (in thousands):

Fiscal Year	Amount
Remainder of 2020	$ 3,532
2021	6,275
2022	5,084
2023	4,446
2024	4,261
Thereafter	16,150
Total minimum lease payments	39,748
Less: interest	(6,764)
Present value of net minimum lease payments	32,984
Less: current portion	(6,168)
Total long-term operating lease liabilities	$ 26,816

Note 15 — Revenue

Transaction price allocated to the remaining performance obligations: On June 27, 2020, we had $3.9 million of remaining performance obligations, which were comprised of deferred service contracts and extended warranty contracts not yet delivered. We expect to recognize approximately 55.6% of our remaining performance obligations as revenue in the remainder of fiscal 2020, approximately 29.6% in fiscal 2021, and approximately 14.8% in fiscal 2022 and thereafter. The foregoing excludes the value of other remaining performance obligations as they have original durations of one year or less, and also excludes information about variable consideration allocated entirely to a wholly unsatisfied performance obligation.

Contract balances: The timing of revenue recognition may differ from the timing of invoicing to customers. Accounts receivable is recorded at the invoiced amount, net of an allowance for doubtful accounts. A receivable is recognized in the period we deliver goods or provide services or when our right to consideration is unconditional. A contract asset is recorded when we have performed under the contract but our right to consideration is conditional on something other than the passage of time. Contract assets as of June 27, 2020 and December 28, 2019 were $4.3 million and $0.9 million, respectively, and are reported on the Condensed Consolidated Balance Sheets as a component of Prepaid expenses and other current assets.

Contract liabilities include payments received in advance of performance under a contract and are satisfied as the associated revenue is recognized. Contract liabilities are reported on the Condensed Consolidated Balance Sheets at the end of each reporting period as a component of Deferred revenue and Other liabilities. Contract liabilities as of June 27, 2020 and December 28, 2019 were $14.7 million and $10.8 million, respectively. During the six months ended June 27, 2020, we recognized $7.2 million of revenue, that was included in contract liabilities as of December 28, 2019.

Costs to obtain a contract: We generally expense sales commissions when incurred as a component of Selling, general and administrative expense, as the amortization period is typically less than one year.

Revenue by Category: Refer to Note 16, *Operating Segments and Enterprise-Wide Information*, for further details.

Note 16 — Operating Segments and Enterprise-Wide Information

Our chief operating decision maker ("CODM") is our Chief Executive Officer, who reviews operating results to make decisions about allocating resources and assessing performance for the entire company. We operate in two reportable segments consisting of the Probe Cards segment and the Systems segment. The following table summarizes the operating results by reportable segment (dollars in thousands):

	Three Months Ended							
	June 27, 2020				June 29, 2019			
	Probe Cards	Systems	Corporate and Other	Total	Probe Cards	Systems	Corporate and Other	Total
Revenues	$ 133,784	$ 24,040	$ —	$ 157,824	$ 113,637	$ 24,381	$ —	$ 138,018
Gross profit	$ 61,523	$ 10,719	$ (6,075)	$ 66,167	$ 48,492	$ 12,672	$ (5,812)	$ 55,352
Gross margin	46.0 %	44.6 %	— %	41.9 %	42.7 %	52.0 %	— %	40.1 %

	Six Months Ended							
	June 27, 2020				June 29, 2019			
	Probe Cards	Systems	Corporate and Other	Total	Probe Cards	Systems	Corporate and Other	Total
Revenues	$ 268,499	$ 50,078	$ —	$ 318,577	$ 221,740	$ 48,491	$ —	$ 270,231
Gross profit	122,266	24,053	(12,762)	$ 133,557	$ 93,785	$ 25,688	$ (11,600)	$ 107,873
Gross margin	45.5 %	48.0 %	— %	41.9 %	42.3 %	53.0 %	— %	39.9 %

Operating results provide useful information to our management for assessment of our performance and results of operations. Certain components of our operating results are utilized to determine executive compensation along with other measures.

Corporate and Other includes unallocated expenses relating to amortization of intangible assets, share-based compensation, and restructuring charges, net, which are not used in evaluating the results of, or in allocating resources to, our reportable segments.

Certain revenue category information by reportable segment was as follows (in thousands):

	Three Months Ended					
	June 27, 2020			June 29, 2019		
	Probe Cards	Systems	Total	Probe Cards	Systems	Total
Market:						
Foundry & Logic	$ 109,347	$ —	$ 109,347	$ 73,442	$ —	$ 73,442
DRAM	19,052	—	19,052	36,044	—	36,044
Flash	5,385	—	5,385	4,151	—	4,151
Systems	—	24,040	24,040	—	24,381	24,381
Total	$ 133,784	$ 24,040	$ 157,824	$ 113,637	$ 24,381	$ 138,018
Timing of revenue recognition:						
Products transferred at a point in time	$ 133,208	$ 22,548	$ 155,756	$ 113,028	$ 23,339	$ 136,367
Services transferred over time	576	1,492	2,068	609	1,042	1,651
Total	$ 133,784	$ 24,040	$ 157,824	$ 113,637	$ 24,381	$ 138,018
Geographical region:						
China	$ 45,625	$ 3,133	$ 48,758	$ 16,304	$ 4,051	$ 20,355
Taiwan	29,806	3,365	33,171	12,826	2,046	14,872
United States	22,368	5,753	28,121	32,072	6,297	38,369
South Korea	14,249	864	15,113	27,360	811	28,171
Europe	8,767	5,365	14,132	4,474	6,174	10,648
Japan	6,679	3,380	10,059	12,867	3,226	16,093
Asia-Pacific[1]	4,347	2,153	6,500	6,262	1,421	7,683
Rest of the world	1,943	27	1,970	1,472	355	1,827
Total	$ 133,784	$ 24,040	$ 157,824	$ 113,637	$ 24,381	$ 138,018

	Six Months Ended					
	June 27, 2020			June 29, 2019		
	Probe Cards	Systems	Total	Probe Cards	Systems	Total
Market:						
Foundry & Logic	$ 215,092	$ —	$ 215,092	$ 145,022	$ —	$ 145,022
DRAM	43,748	—	43,748	64,930	—	64,930
Flash	9,659	—	9,659	11,788	—	11,788
Systems	—	50,078	50,078	—	48,491	48,491
Total	$ 268,499	$ 50,078	$ 318,577	$ 221,740	$ 48,491	$ 270,231
Timing of revenue recognition:						
Products transferred at a point in time	$ 267,277	$ 47,406	$ 314,683	$ 220,519	$ 46,481	$ 267,000
Services transferred over time	1,222	2,672	3,894	1,221	2,010	3,231
Total	$ 268,499	$ 50,078	$ 318,577	$ 221,740	$ 48,491	$ 270,231
Geographical region:						
China	$ 82,905	$ 9,495	$ 92,400	$ 34,455	$ 7,743	$ 42,198
Taiwan	60,245	4,706	64,951	34,083	3,176	37,259
United States	47,979	12,058	60,037	59,727	12,905	72,632
Europe	24,977	10,198	35,175	9,847	10,294	20,141
South Korea	27,941	1,260	29,201	52,378	2,516	54,894
Japan	12,214	6,215	18,429	18,167	8,358	26,525
Asia-Pacific[1]	8,802	5,561	14,363	9,052	1,894	10,946
Rest of the world	3,436	585	4,021	4,031	1,605	5,636
Total	$ 268,499	$ 50,078	$ 318,577	$ 221,740	$ 48,491	$ 270,231

[1] Asia-Pacific includes all countries in the region except China, Japan, South Korea, and Taiwan, which are disclosed separately.

Note 17 — Subsequent Events

On July 30, 2020, subsequent to the balance sheet date, we acquired the probe card assets of Advantest Corporation for total consideration of $35.0 million. This acquisition brings important enabling technologies and capabilities for designing and manufacturing advanced memory probe cards, and adds a complementary 3D-NAND Flash probe-card product that is qualified and in production at one of the world's leading NAND Flash manufacturers.

The transaction will be accounted for in accordance with the acquisition method of accounting which requires, among other things, that assets acquired and liabilities assumed be recognized at their fair values as of the acquisition date. Due to the limited time since the acquisition date, the initial purchase allocation for the business combination is incomplete at this time. Disclosures regarding amounts recognized for major classes of assets acquired and liabilities assumed will be provided once the initial accounting is completed. The acquired business is not expected to be material to the Company's operations and consolidated financial position.

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

Cautionary Statement Regarding Forward-Looking Statements

This Quarterly Report on Form 10-Q contains forward-looking statements within the meaning of the Securities Exchange Act of 1934 and the Securities Act of 1933, which are subject to risks and uncertainties. The forward-looking statements include statements concerning, among other things, our business strategy, financial and operating results, gross margins, liquidity and capital expenditure requirements and impact of accounting standards. In some cases, you can identify these statements by forward-looking words, such as "may," "might," "will," "could," "should," "expect," "plan," "anticipate," "believe," "estimate," "predict," "intend" and "continue," the negative or plural of these words and other comparable terminology.

The forward-looking statements are only predictions based on our current expectations and our projections about future events. All forward-looking statements included in this Quarterly Report on Form 10-Q are based upon information available to us as of the filing date of this Quarterly Report on Form 10-Q. You should not place undue reliance on these forward-looking statements. We have no obligation to update any of these statements. These forward-looking statements involve known and unknown risks, uncertainties and other factors that may cause our actual results, levels of activity, performance or achievements to differ materially from those expressed or implied by these statements, including risks related to general market trends, the benefits of acquisitions and investments, uncertainties related to COVID-19 and the impact of our responses to it, the interpretation and impacts of changes in export controls and other trade barriers, our ability to execute our business strategy and other risks discussed in the section titled "Risk Factors" and elsewhere in our Annual Report on Form 10-K for the year ended December 28, 2019 and in this Quarterly Report on Form 10-Q. You should carefully consider the numerous risks and uncertainties described under these sections.

The following discussion and analysis should be read in conjunction with our condensed consolidated financial statements and the accompanying notes contained in this Quarterly Report on Form 10-Q. Unless expressly stated or the context otherwise requires, the terms "we," "our," "us" and "FormFactor" refer to FormFactor, Inc. and its subsidiaries.

Overview

FormFactor, Inc., headquartered in Livermore, California, is a leading provider of test and measurement solutions. We provide a broad range of high-performance probe cards, analytical probes, probe stations, metrology systems, and thermal sub-systems to both semiconductor companies and scientific institutions. Our products provide electrical and optical information from a variety of semiconductor and electro-optical devices and integrated circuits from research, through development to production. Customers use our products and services to lower production costs, improve yields, and enable development of their complex next-generation products.

We operate in two reportable segments consisting of the Probe Cards segment and the Systems segment. Sales of our probe cards and analytical probes are included in the Probe Cards segment, while sales of our probe stations, metrology systems and thermal sub-systems are included in the Systems segment.

We generated net income of $36.4 million in the first six months of fiscal 2020 as compared to $12.4 million in the first six months of fiscal 2019. The increase in net income was primarily due to increased revenues and good leverage on operating expenses, which only marginally increase on significantly higher operating levels.

Impact of COVID-19

An outbreak of an illness caused by a novel coronavirus in 2019 ("COVID-19") has resulted in millions of infections and well over six hundred thousand deaths worldwide as of the date of filing this Quarterly Report. COVID-19 continues to spread in many of the regions that we, our customers and our suppliers operate. The COVID-19 pandemic has resulted in significant governmental measures being implemented to control the spread of the virus, including the imposition of stay-at-home and other orders in locations where we have manufacturing and other activities. We experienced a significant disruption to our operations as a result of the COVID-19 pandemic during the last two weeks of our first fiscal quarter of 2020. Through our second quarter we implemented social distancing, contact tracing, and various other measures to enable our manufacturing sites to continue efficient production. While we believe those measures have been largely successful, we continue to monitor the situation closely.

We believe that we operate in a critical infrastructure industry, as defined by the U.S. Department of Homeland Security. This reduces the current and anticipated impacts of the COVID-19 pandemic on our major customers and suppliers, and upon our operations, as compared to companies that are not part of the critical infrastructure. After a temporary suspension of manufacturing to implement safety measures in our California and Oregon locations during our first fiscal quarter of 2020, consistent with federal guidelines and state and local orders, we recommenced manufacturing. We currently continue to operate in all of our manufacturing sites at production levels comparable to those prior to the pandemic, albeit subject to certain safety and related constraints. Our other operations are similarly continuing with substantial work-from-home activities.

If the provisions of governmental health orders or other safety requirements applicable to us or our customers or suppliers continue or become more restrictive for an extended period of time, or if we have occurrences of COVID-19 in any of our facilities, we may experience further disruptions or delays in manufacturing, product design, product development, customer support, manufacturing and sales, and an overall loss of productivity and efficiency.

Even with our continued operations, COVID-19 has had, and may have further, negative impacts on our supply chain, workforce and customers. The continued progression of the COVID-19 pandemic and associated macro-economic, trade-related, and even site-specific restrictions, including but not limited to the effects of any overall global, regional or national economic slowdowns or other economic downturns, increased trade and transport costs, and inability to access customer sites for certain activities could also negatively impact our business or results of operations through new restrictions at our operating locations or at those of our customers or suppliers. As the COVID-19 pandemic is a widespread public health crisis, it is also adversely affecting major economies and financial markets world-wide. A resulting economic downturn can be expected to eventually negatively affect the demand for our products, and contribute to volatile demand and supply conditions affecting the markets for our products.

Governments in several countries where we operate, including the United States, have enacted stabilization and stimulus measures in an effort to counteract some of the impacts of COVID-19. We have benefited and may continue to benefit from some of these measures, although we do not believe those benefits have had or will have a material effect upon our financial results or financial condition. Governments may discontinue, amend, replace or otherwise change or supplement such stabilization and stimulus measures in ways that are difficult to predict, and it is possible that such changes could have a material effect upon our financial results or financial condition, or the financial results or financial condition of our customers or suppliers.

While to date the disruptions in our operations, supply chain and customer demand as a result of the COVID-19 pandemic have been somewhat limited, we believe that the COVID-19 pandemic represents a sustained threat that may eventually give rise to a variety of more significant adverse impacts on our business and financial results. We consider this as a near or longer term trend, although we cannot identify or quantify the specific impacts given current levels of uncertainty and the broad variety of effects that may arise from a pandemic of this magnitude. For a further description of the uncertainties and business risks associated with the COVID-19 pandemic, see the section entitled "Risk Factors" in this Quarterly Report.

Significant Accounting Policies and the Use of Estimates

Management's Discussion and Analysis and Note 2, *Summary of Significant Accounting Policies*, to the Consolidated Financial Statements in our 2019 Annual Report on Form 10-K describe the significant accounting estimates and significant accounting policies used in preparation of the Consolidated Financial Statements. Actual results in these areas could differ from management's estimates. During the six months ended June 27, 2020, there were no significant changes in our significant accounting policies or estimates from those reported in our Annual Report on Form 10-K for the year ended December 28, 2019, which was filed with the Securities and Exchange Commission on February 21, 2020.

Results of Operations

The following table sets forth our operating results as a percentage of revenues for the periods indicated:

	Three Months Ended		Six Months Ended	
	June 27, 2020	June 29, 2019	June 27, 2020	June 29, 2019
Revenues	100.0 %	100.0 %	100.0 %	100.0 %
Cost of revenues	58.1	59.9	58.1	60.1
Gross profit	41.9	40.1	41.9	39.9
Operating expenses:				
Research and development	13.3	14.6	13.2	14.7
Selling, general and administrative	14.4	19.0	15.8	19.1
Total operating expenses	27.7	33.6	29.0	33.8
Operating income	14.2	6.5	12.9	6.1
Interest income	0.2	0.5	0.3	0.5
Interest expense	(0.1)	(0.4)	(0.2)	(0.4)
Other income (expense), net	—	0.1	—	—
Income before income taxes	14.3	6.7	13.0	6.2
Provision for income taxes	1.4	1.7	1.6	1.6
Net income	12.9 %	5.0 %	11.4 %	4.6 %

Revenues by Segment and Market

	Three Months Ended		Six Months Ended	
	June 27, 2020	June 29, 2019	June 27, 2020	June 29, 2019
	(In thousands)			
Probe Cards	$ 133,784	$ 113,637	$ 268,499	$ 221,740
Systems	24,040	24,381	50,078	48,491
	$ 157,824	$ 138,018	$ 318,577	$ 270,231

	Three Months Ended					
	June 27, 2020	% of Revenues	June 29, 2019	% of Revenues	$ Change	% Change
	(Dollars in thousands)					
Probe Cards Markets:						
Foundry & Logic	$ 109,347	69.3 %	$ 73,442	53.2 %	$ 35,905	48.9 %
DRAM	19,052	12.1	36,044	26.1	(16,992)	(47.1)
Flash	5,385	3.4	4,151	3.0	1,234	29.7
Systems Market:						
Systems	24,040	15.2	24,381	17.7	(341)	(1.4)
Total revenues	$ 157,824	100.0 %	$ 138,018	100.0 %	$ 19,806	14.4 %

	Six Months Ended					
	June 27, 2020	% of Revenues	June 29, 2019	% of Revenues	$ Change	% Change
	(Dollars in thousands)					
Probe Cards Markets:						
Foundry & Logic	$ 215,092	67.6 %	$ 145,022	53.7 %	$ 70,070	48.3 %
DRAM	43,748	13.7	64,930	24.0	(21,182)	(32.6)
Flash	9,659	3.0	11,788	4.4	(2,129)	(18.1)
Systems Market:						
Systems	50,078	15.7	48,491	17.9	1,587	3.3
Total revenues	$ 318,577	100.0 %	$ 270,231	100.0 %	$ 48,346	17.9 %

The increase in Foundry & Logic product revenue for the three and six months ended June 27, 2020, compared to the three and six months ended June 29, 2019, was driven principally by increased unit sales to large semiconductor foundries and integrated device manufacturers, as well as increasing our market share with our larger customers as part of our success in diversifying the products we sell to our strategic accounts as they increased manufacturing of new chip designs on leading-edge nodes. Additionally, we began to see an increase in sales due to the demand for 5G handsets and devices.

The decrease in DRAM product revenue for the three and six months ended June 27, 2020, compared to the three and six months ended June 29, 2019, was driven by decreased unit sales as a result of decreased customer demand.

The increase in Flash product revenue for the three months ended June 27, 2020, compared to the three months ended June 29, 2019, was driven by increased unit sales as a result of increased customer demand. This increase helped reduce the overall decrease in the six months ended June 27, 2020, compared to the six months ended June 29, 2019, as our revenue in this market continues to be highly variable.

The increase in Systems product revenue for the six months ended June 27, 2020, compared to the six months ended June 29, 2019, was driven by increased sales of probe stations year over year, which includes an increase in revenue from 300mm stations, and additional contribution from our acquisition of FRT GmbH, partially offset by lower revenue from thermal sub-systems and 200mm stations.

Due to COVID-19, there were various impacts across our segments due to governmental mandates of social distancing. This resulted in a temporary factory shutdown for almost two weeks during our first fiscal quarter of 2020 in certain locations, limiting our manufacturing capacity. These shutdowns negatively affected revenue, especially in our Probes segment.

Revenues by Geographic Region

	Three Months Ended				Six Months Ended			
	June 27, 2020	% of Revenue	June 29, 2019	% of Revenue	June 27, 2020	% of Revenue	June 29, 2019	% of Revenue
	(Dollars in thousands)							
China	$ 48,758	30.9 %	$ 20,355	14.7 %	$ 92,400	29.0 %	$ 42,198	15.6 %
Taiwan	33,171	21.0 %	14,872	10.8 %	64,951	20.4 %	37,259	13.8 %
United States	28,121	17.8 %	38,369	27.8 %	60,037	18.8 %	72,632	26.9 %
South Korea	15,113	9.6 %	28,171	20.4 %	29,201	9.2 %	54,894	20.3 %
Europe	14,132	9.0 %	10,648	7.7 %	35,175	11.0 %	20,141	7.5 %
Japan	10,059	6.4 %	16,093	11.7 %	18,429	5.8 %	26,525	9.8 %
Asia-Pacific[1]	6,500	4.1 %	7,683	5.6 %	14,363	4.5 %	10,946	4.1 %
Rest of the world	1,970	1.2 %	1,827	1.3 %	4,021	1.3 %	5,636	2.0 %
Total revenues	$ 157,824	100.0 %	$ 138,018	100.0 %	$ 318,577	100.0 %	$ 270,231	100.0 %

[1] Asia-Pacific includes all countries in the region except China, Japan, South Korea and Taiwan, which are disclosed separately.

Geographic revenue information is based on the location to which we ship the product. For example, if a certain South Korean customer purchases through their U.S. subsidiary and requests the products to be shipped to an address in South Korea, this sale will be reflected in the revenue for South Korea rather than the U.S.

Changes in revenue by geographic region for the three and six months ended June 27, 2020, compared to the three and six months ended June 29, 2019, were primarily attributable to changes in customer demand, shifts in customer regional manufacturing strategies, particularly with our large multinational customers, and product sales mix.

Cost of Revenues and Gross Margins

Cost of revenues consists primarily of manufacturing materials, compensation and benefits, shipping and handling costs, manufacturing-related overhead and amortization of certain intangible assets. Our manufacturing operations rely on a limited number of suppliers to provide key components and materials for our products, some of which are a sole source. We order materials and supplies based on backlog and forecasted customer orders. Tooling and setup costs related to changing manufacturing lots at our suppliers are also included in the cost of revenues. We expense all warranty costs, inventory provisions and amortization of certain intangible assets as cost of revenues.

Our gross profit and gross margin were as follows (dollars in thousands):

	Three Months Ended			
	June 27, 2020	June 29, 2019	$ Change	% Change
Gross profit	$ 66,167	$ 55,352	$ 10,815	19.5 %
Gross margin	41.9 %	40.1 %		

	Six Months Ended			
	June 27, 2020	June 29, 2019	$ Change	% Change
Gross profit	$ 133,557	$ 107,873	$ 25,684	23.8 %
Gross margin	41.9 %	39.9 %		

Our gross profit and gross margin by segment were as follows (dollars in thousands):

	Three Months Ended							
	June 27, 2020				June 29, 2019			
	Probe Cards	Systems	Corporate and Other	Total	Probe Cards	Systems	Corporate and Other	Total
Gross profit	$ 61,523	$ 10,719	$ (6,075)	$ 66,167	$ 48,492	$ 12,672	$ (5,812)	$ 55,352
Gross margin	46.0 %	44.6 %	— %	41.9 %	42.7 %	52.0 %	— %	40.1 %

	Six Months Ended							
	June 27, 2020				June 29, 2019			
	Probe Cards	Systems	Corporate and Other	Total	Probe Cards	Systems	Corporate and Other	Total
Gross profit	$122,266	$ 24,053	$ (12,762)	$ 133,557	$93,785	$ 25,688	$ (11,600)	$ 107,873
Gross margin	45.5 %	48.0 %	— %	41.9 %	42.3 %	53.0 %	— %	39.9 %

Probe Cards

For the three and six months ended June 27, 2020, gross profit and gross margins increased compared to the three and six months ended June 29, 2019, primarily due to increased sales and higher factory utilization.

Systems

For the three and six months ended June 27, 2020, gross profit and gross margin decreased compared to the three and six months ended June 29, 2019, primarily as a result of lower sales and less favorable product mix, in particular lower probe station sales.

Corporate and Other

Corporate and Other includes unallocated expenses relating to amortization of intangible assets, share-based compensation, restructuring charges, net, and charges related to inventory stepped up to fair value due to acquisitions which are not used in evaluating the results of, or in allocating resources to, our reportable segments.

Overall

Gross profit and gross margin fluctuate with revenue levels, product mix, selling prices, factory loading and material costs. For the three and six months ended June 27, 2020, compared to the three and six months ended June 29, 2019, gross profit and gross margins have improved, primarily on higher sales.

Cost of revenues included stock-based compensation expense as follows (in thousands):

	Three Months Ended		Six Months Ended	
	June 27, 2020	June 29, 2019	June 27, 2020	June 29, 2019
Stock-based compensation	$ 901	$ 964	$ 1,838	$ 1,914

Future gross margins may be adversely impacted by lower revenues, unfavorable product mix and lower factory utilization. Our gross margins may also be adversely affected if we are required to record additional inventory write-downs for estimated average selling prices that are below cost or because of a decrease in demand.

Research and Development

	Three Months Ended			
	June 27, 2020	June 29, 2019	$ Change	% Change
	(Dollars in thousands)			
Research and development	$ 20,919	$ 20,074	$ 845	4.2 %
% of revenues	13.3 %	14.6 %		

	Six Months Ended			
	June 27, 2020	June 29, 2019	$ Change	% Change
	(Dollars in thousands)			
Research and development	$ 42,186	$ 39,797	$ 2,389	6.0 %
% of revenues	13.2 %	14.7 %		

The increase in research and development expenses in the three and six months ended June 27, 2020 when compared to the corresponding period in the prior year was primarily driven by increased headcount combined with higher variable performance based compensation and higher project material costs, partially offset by a decrease in travel due to travel restrictions and decreased stock-based compensation related to the timing of annual grants.

A detail of the changes is as follows (in thousands):

	Three Months Ended June 27, 2020 compared to Three Months Ended June 29, 2019	Six Months Ended June 27, 2020 compared to Six Months Ended June 29, 2019
Employee compensation costs	911	2,558
Project material costs	328	263
Depreciation	62	151
Stock-based compensation	(193)	(273)
Other general operations	(263)	(310)
	$ 845	$ 2,389

Research and development included stock-based compensation expense as follows (in thousands):

	Three Months Ended		Six Months Ended	
	June 27, 2020	June 29, 2019	June 27, 2020	June 29, 2019
Stock-based compensation	$ 1,389	$ 1,582	$ 2,828	$ 3,101

Selling, General and Administrative

	Three Months Ended			
	June 27, 2020	June 29, 2019	$ Change	% Change
	(Dollars in thousands)			
Selling, general and administrative	$ 22,755	$ 26,283	$ (3,528)	(13.4)%
% of revenues	14.4 %	19.0 %		

	Six Months Ended			
	June 27, 2020	June 29, 2019	$ Change	% Change
	(Dollars in thousands)			
Selling, general and administrative	$ 50,448	$ 51,467	$ (1,019)	(2.0)%
% of revenues	15.8 %	19.0 %		

The decrease in selling, general and administrative in the three and six months ended June 27, 2020 when compared to the corresponding period in the prior year was primarily due to decreased general operating expenses due to the gain on contingent consideration from the remeasurement of the contingent consideration related to the acquisition of FRT GmbH, as well as decreased travel due to travel restrictions and decreased amortization of intangibles, partially offset by an increase in headcount combined with higher variable performance based compensation, higher stock-based compensation, and higher costs from acquisition of FRT GmbH.

A detail of the changes is as follows (in thousands):

	Three Months Ended June 27, 2020 compared to Three Months Ended June 29, 2019	Six Months Ended June 27, 2020 compared to Six Months Ended June 29, 2019
Employee compensation	1,385	3,326
Stock-based compensation	609	1,030
Consulting fees	62	628
Amortization of intangibles	(840)	(1,697)
Gain on contingent consideration	(3,700)	(3,700)
General operating expenses	(1,044)	(606)
	$ (3,528)	$ (1,019)

Selling, general and administrative included stock-based compensation expense as follows (in thousands):

	Three Months Ended		Six Months Ended	
	June 27, 2020	June 29, 2019	June 27, 2020	June 29, 2019
Stock-based compensation	$ 3,352	$ 2,743	$ 6,599	$ 5,569

Interest Income and Interest Expense

	Three Months Ended		Six Months Ended	
	June 27, 2020	June 29, 2019	June 27, 2020	June 29, 2019
	(Dollars in thousands)			
Interest Income	$ 376	$ 684	$ 1,061	$ 1,264
Weighted average balance of cash and investments	$ 235,888	$ 177,380	$ 223,340	$ 164,416
Weighted average yield on cash and investments	0.81 %	2.11 %	1.26 %	2.07 %
Interest Expense	$ 171	$ 522	$ 489	$ 1,117
Average debt outstanding	$ 32,368	$ 57,253	$ 38,843	$ 61,044
Weighted average interest rate on debt	1.92 %	4.49 %	2.26 %	4.50 %

Interest income is earned on our cash, cash equivalents, restricted cash and marketable securities. The decrease in interest income for the three and six months ended June 27, 2020 compared with the corresponding period of the prior year was attributable to lower investment yields due to the low interest rate environment partially offset by higher invested balances.

Interest expense primarily includes interest on our term loans, partially offset by income from our interest-rate swap derivative contracts, as well as term loan issuance costs amortization charges. The decrease in interest expense for the three and six months ended June 27, 2020 compared to the same period of the prior year was primarily due to lower outstanding debt balances related to the acquisition of Cascade Microtech in fiscal 2016 as a result of principal payments made, partially offset by additional interest expense related to the term loan originated to finance the acquisition of FRT GmbH in the fourth quarter of 2019 and additional interest expense related to the term loan originated to finance the purchase of a building in the second quarter of 2020.

Other Expense, Net

Other expense, net, primarily includes the effects of foreign currency impact and various other gains and losses.

Provision for Income Taxes

	Three Months Ended		Six Months Ended	
	June 27, 2020	June 29, 2019	June 27, 2020	June 29, 2019
	(In thousands, except percentages)			
Provision for income taxes	$ 2,162	$ 2,290	$ 4,978	$ 4,322
Effective tax rate	9.6 %	24.8 %	12.0 %	25.8 %

Provision for income taxes reflects the tax provision on our operations in foreign and U.S. jurisdictions, offset by tax benefits from tax credits and the foreign-derived intangible income ("FDII") deduction. We expect the FDII deduction and corresponding benefit to be available after utilizing our previous net operating loss carryforwards, resulting in a decrease in our effective tax rate for the three and six months ended June 27, 2020, compared to the three and six months ended June 29, 2019. Our effective tax rate may vary from period to period based on changes in estimated taxable income or loss by jurisdiction, changes to the valuation allowance, changes to U.S. federal, state or foreign tax laws, changes in ASC 718 stock-based compensation expense/benefit, future expansion into areas with varying country, state, and local income tax rates, deductibility of certain costs and expenses by jurisdiction.

Liquidity and Capital Resources

Capital Resources

Our working capital was $332.2 million at June 27, 2020, compared to $282.5 million at December 28, 2019.

Cash and cash equivalents primarily consist of deposits held at banks and money market funds. Marketable securities primarily consist of U.S. treasuries and corporate bonds. We typically invest in highly-rated securities with low probabilities of default. Our investment policy requires investments to be rated single A or better, and limits the types of acceptable investments, issuer concentration and duration of the investment.

Our cash, cash equivalents and marketable securities totaled approximately $261.1 million at June 27, 2020, compared to $220.9 million at December 28, 2019. We believe that we will be able to satisfy our working capital requirements and scheduled term loan repayments for at least the next twelve months with the liquidity provided by our existing cash, cash equivalents, marketable securities and cash provided by operations. To the extent necessary, we may consider entering into short and long-term debt obligations, raising cash through a stock issuance, or obtaining new financing facilities, which may not be available on terms favorable to us. Our future capital requirements may vary materially from those now planned.

The COVID-19 pandemic has negatively impacted the global economy, disrupted global supply chains and created significant volatility and disruption of financial markets. An extended period of global supply chain and economic disruption could materially affect our business, results of operations, access to sources of liquidity and financial condition. As a result of the current and uncertain future impact of COVID-19, we have taken actions to preserve and improve our liquidity primarily by limiting our exposures to volatile markets and investments, as well as actively working to minimize counterparty risk, for example, by directly investing in securities where the counterparty is the U.S. Government rather than a similar investment where the counterparty is a bank.

If we are unsuccessful in maintaining or growing our revenues, maintaining or reducing our cost structure (in response to a potential reduction in demand due to an industry downturn, COVID-19, or other event), or increasing our available cash through debt or equity financings, our cash, cash equivalents and marketable securities may decline in fiscal 2020.

We utilize a variety of tax planning and financing strategies to manage our worldwide cash and deploy funds to locations where needed. As part of these strategies, we indefinitely reinvest a portion of our foreign earnings. Should we require additional capital in the United States, we may elect to repatriate indefinitely-reinvested foreign funds or raise capital in the United States.

Cash Flows

The following table sets forth our net cash flows from operating, investing and financing activities:

	Six Months Ended	
	June 27, 2020	**June 29, 2019**
	(In thousands)	
Net cash provided by operating activities	$ 82,447	$ 55,376
Net cash used in investing activities	(20,977)	(12,470)
Net cash used in financing activities	$ (7,265)	$ (17,037)

Operating Activities

Net cash provided by operating activities for the six months ended June 27, 2020 was primarily attributable to net income of $36.4 million and $39.3 million of net non-cash expenses, offset by changes in operating assets and liabilities, as explained below.

Accounts receivable, net, decreased $11.3 million to $86.6 million at June 27, 2020, compared to $97.9 million at December 28, 2019, as a result of changes in customer sales mix, timing of customer shipments and timing of customer payments.

Inventories, net, increased $4.6 million to $87.8 million at June 27, 2020, compared to $83.3 million at December 28, 2019, as a result of timing of customer demand expected to ship at the beginning of next quarter, as well as smaller impact related to increased inventory purchases to mitigate the impact of COVID-19 on our supply chain.

Accounts payable increased $3.4 million to $44.3 million at June 27, 2020, compared to $40.9 million at December 28, 2019, as a result of timing of vendor payments.

Investing Activities

Net cash used in investing activities for the six months ended June 27, 2020 was primarily related to $36.7 million of cash used in the acquisition of property, plant and equipment, which includes $24.0 million used in the acquisition of a building adjacent to our leased facilities in Livermore, California, partially offset by $15.7 million of net proceeds from sales of marketable securities.

Financing Activities
Net cash used in financing activities for the six months ended June 27, 2020 primarily related to $26.3 million of principal payments made towards the repayment of our term loans and $3.8 million related to tax withholding associated with the net share settlements of our equity awards, partially offset by $18.0 million of proceeds received from the new term loan for our building purchase, as well as $4.9 million of proceeds received from issuances of common stock under our employee stock purchase plan and stock option plans.

Debt

CMI Term Loan
On June 24, 2016, we entered into a senior secured term loan facility of $150 million. The proceeds of the CMI Term Loan were used to finance a portion of the purchase price paid in connection with the Cascade Microtech acquisition in fiscal 2016 and to pay related bank fees and expenses.

The CMI Term Loan bears interest at a rate equal to, at our option, (i) the applicable London Interbank Offered Rate ("LIBOR") rate plus 2.00% per annum or (ii) Base Rate plus 1.00% per annum. We have currently elected to pay interest at 2.00% over the one-month LIBOR rate. Interest payments are payable in monthly installments over a five-year period. The interest rate at June 27, 2020 was 2.41%.

The principal payments on the CMI Term Loan are paid in equal quarterly installments that began June 30, 2016, in an annual amount equal to 5% for year one, 10% for year two, 20% for year three, 30% for year four and 35% for year five. As of June 27, 2020, the balance outstanding pursuant to the CMI Term Loan was $12.5 million. The CMI Term loan was subsequently fully paid as of June 30, 2020.

FRT Term Loan
On October 25, 2019, we entered into a $23.4 million three-year credit facility loan agreement to fund the acquisition of FRT GmbH, which we acquired on October 9, 2019.

The FRT Term Loan bears interest at a rate equal to the Euro Interbank Offered Rate ("EURIBOR") plus 1.75% per annum and will be repaid in quarterly installments of approximately $1.9 million plus interest. The interest rate at June 27, 2020 was 1.36%. As of June 27, 2020, the balance outstanding pursuant to the FRT term loan was $19.6 million.

Building Term Loan
On June 22, 2020, we entered into an $18.0 million 15-year credit facility loan agreement. The proceeds of the Building Term Loan were used to purchase a building adjacent to our leased facilities in Livermore, California.

The Building Term Loan bears interest at a rate equal to the applicable LIBOR rate plus 1.75% per annum. Interest payments are payable in monthly installments over a fifteen-year period. The interest rate at June 27, 2020 was 1.92%. As of June 27, 2020, the balance outstanding pursuant to the Building Term Loan was $18.0 million.

On March 17, 2020, we entered into an interest rate swap agreement to hedge the interest payments on the Building Term Loan for the notional amount of $18.0 million. As future levels of LIBOR over the life of the loan are uncertain, we entered into this interest-rate swap agreement to hedge the exposure in interest rate risks associated with movement in LIBOR rates. By entering into the agreement, we convert a floating rate interest at one-month LIBOR plus 1.75% into a fixed rate interest at 2.75%. The interest rate swap also includes a 0% floor that is effective for one year from the date of the swap. As of June 27, 2020, the notional amount of the loan that is subject to this interest rate swap is $18.0 million.

See Note 6, *Debt*, of Notes to Condensed Consolidated Financial Statements.

Contractual Obligations and Commitments

The following table summarizes our significant contractual commitments to make future payments in cash under contractual obligations as of June 27, 2020:.

	Payments Due In Fiscal Year						
	Remainder 2020	2021	2022	2023	2024	Thereafter	Total
Operating leases	$ 3,532	$ 6,275	$ 5,084	$ 4,446	$ 4,261	$ 16,150	$ 39,748
Term loans - principal payments	16,912	8,845	8,873	1,050	1,080	13,368	50,128
Term loans - interest payments [1]	328	537	392	293	273	1,445	3,268
Total	$ 20,772	$ 15,657	$ 14,349	$ 5,789	$ 5,614	$ 30,963	$ 93,144

(1) Represents our minimum interest payment commitments at 1.92% per annum for the Building Term Loan and 1.59% per annum for the FRT Term Loan and 2.18% per annum for the CMI Term Loan.

Off-Balance Sheet Arrangements

Historically, we have not participated in transactions that have generated relationships with unconsolidated entities or financial partnerships, such as entities often referred to as structured finance or special purpose entities, which would have been established for the purpose of facilitating off-balance sheet arrangements or other contractually narrow or limited purposes. As of June 27, 2020, we were not involved in any such off-balance sheet arrangements.

Recent Accounting Pronouncements

See Note 1, *Basis of Presentation and New Accounting Pronouncements*, of Notes to Condensed Consolidated Financial Statements.

Item 3. *Quantitative and Qualitative Disclosures about Market Risk*

For financial market risks related to changes in interest rates and foreign currency exchange rates, reference is made to Item 7A "Quantitative and Qualitative Disclosures about Market Risk" contained in Part II of our Annual Report on Form 10-K for the fiscal year ended December 28, 2019. Our exposure to market risk has not changed materially since December 28, 2019.

Item 4. *Controls and Procedures*

Evaluation of Disclosure Controls and Procedures

Based on our management's evaluation (with the participation of our principal executive officer and principal financial officer), as of the end of the period covered by this report, our principal executive officer and principal financial officer have concluded that our disclosure controls and procedures (as defined in Rules 13a-15(e) and 15d-15(e) under the Securities Exchange Act of 1934, as amended, (the "Exchange Act")) are effective to ensure that information required to be disclosed by us in reports that we file or submit under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in Securities and Exchange Commission rules and forms and is accumulated and communicated to our management, including our principal executive officer and principal financial officer, as appropriate to allow timely decisions regarding required disclosure.

Changes in Internal Control over Financial Reporting

There have been no changes in our internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) that occurred during the period covered by this Quarterly Report on Form 10-Q that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Limitations on the Effectiveness of Controls

Control systems, no matter how well designed and operated, can provide only reasonable, not absolute, assurance that the control systems' objectives are being met. Further, the design of any control systems must reflect the fact that there are resource constraints, and the benefits of all controls must be considered relative to their costs. Because of the inherent limitations in all control systems, no evaluation of controls can provide absolute assurance that all control issues and instances of fraud, if any, within our company have been detected. These inherent limitations include the realities that judgments in decision making can be faulty and that breakdowns can occur because of a simple error or mistake. Control systems can also be circumvented by the individual acts of some persons, by collusion of two or more people, or by management override of the controls. The design of any system of controls is based, in part, on certain assumptions about the likelihood of future events, and there can be no assurance that any design will succeed in achieving its stated goals under all potential future conditions. Over time, controls may become inadequate because of changes in conditions or deterioration in the degree of compliance with policies or procedures.

CEO and CFO Certifications

We have attached as exhibits to this Quarterly Report on Form 10-Q the certifications of our Chief Executive Officer and Chief Financial Officer, which are required in accordance with the Exchange Act. We recommend that this Item 4 be read in conjunction with the certifications for a more complete understanding of the subject matter presented.

PART II - OTHER INFORMATION

Item 1A. *Risk Factors*

There have been no material changes during the six months ended June 27, 2020 to the risk factors discussed in our Annual Report on Form 10-K for the year ended December 28, 2019 apart from the risk factor described below. If any of the identified risks actually occur, our business, financial condition and results of operations could suffer. The trading price of our common stock could decline and you may lose all or part of your investment in our common stock. The risks and uncertainties described in our Annual Report on Form 10-K for the year ended December 28, 2019 are not the only ones we face. Additional risks that we currently do not know about or that we currently believe to be immaterial may also impair our business operations.

The COVID-19 pandemic has impacted, and is expected to continue to negatively impact, our operations, and those of our important suppliers, business partners and customers.

We are exposed to risks associated with public health crises and outbreaks of contagious diseases, such as the current outbreak of a novel strain of coronavirus ("COVID-19"). To date, COVID-19 has had, and may continue to have, an adverse impact on our operations, our supply chains and our expenses, including as a result of precautionary measures that we take in response to COVID-19.

As a result of the COVID-19 pandemic, we have experienced significant business disruptions, including temporary closures of our facilities, and the facilities of our suppliers and their supply chain partners, and restrictions on our ability to travel and service our products. For example, our corporate headquarters and many of our operations, including much of our manufacturing facilities, are located in California, which instituted health orders applicable to our operations and employees in the region. In other regions where we operate globally, similar health orders have been issued, which have had, and will continue to have, similar affects upon our business. This has the potential to significantly impact our ability to design, produce, deliver and support our products for customers. These unprecedented measures to slow the spread of COVID-19 taken by local and regional governments have had, and will continue to have, a significant negative impact on our operations.

A significant amount of our management resources has been, and will continue to be, focused on mitigating the negative impacts of COVID-19 on our business. This has required, and will continue to require, a substantial investment of time and resources across our enterprise that has delayed, or may continue to delay other valuable activities, such as the development of new technologies, products or capabilities. In addition, many of our employees are working remotely for an extended period which can increase operational risk and cybersecurity risks. If we do not respond appropriately to the COVID-19 pandemic, or if customers do not perceive our response positively, we could suffer damage to our reputation, which could adversely affect our business.

The extent to which the COVID-19 pandemic impacts our operations and those of our important, suppliers, business partners and customers will depend on numerous evolving factors and future developments that we are not able to predict, including but not limited to: the severity of the virus; the duration of the outbreak; governmental, business and other actions (which could include further restrictions on our operations); the ongoing requirements of social distancing and shelter-in-place orders; the impacts on our supply chain; the impact of the pandemic on economic activity; the extent and duration of the effect on business confidence and investments by our customers; the effects of changes to our operations that may continue indefinitely; the health of and the effect on our workforce and our ability to meet our staffing needs, particularly if members of our workforce are exposed or infected; any impairments in the value of our assets which could be recorded as a result of weaker economic conditions; and the potential impacts upon our internal controls, including those over financial reporting, that may result from changes in working environments and other circumstances. All of these circumstances are highly uncertain and cannot be predicted. In addition, the circumstances which give rise to new or existing infectious diseases becoming epidemics or pandemics with potentially similar impacts are expected to persist.

Further, we obtain some of the components and materials used in our products from a sole source or a limited group of suppliers, and in some cases alternative sources are not readily available. The COVID-19 pandemic may heighten the risks posed by our dependence upon sole or limited source suppliers to the extent that the pandemic could disrupt the operations of one or more of these suppliers, resulting in an inability to obtain an adequate supply of materials, late deliveries or poor component quality while we seek to identify and qualify alternative suppliers. Such disruptions could disrupt our operations and result an adverse impact to our results of operations, cash flows and financial position.

Adverse global, regional and national economic conditions resulting from the COVID-19 pandemic could have a negative effect on our business, results of operations and financial condition and liquidity

The COVID-19 pandemic has adversely affected, and may continue to adversely affect, national, regional and global economies and financial markets. Although the long-term macroeconomic effects of the pandemic cannot be predicted with certainty, the continued progression or persistence of the pandemic may result in global, regional or national economic slowdowns or other economic downturns. Such downturns could curtail or delay spending by businesses and consumers which may ultimately result in reductions in the demand for our products and greater volatility in demand and supply conditions. The COVID-19 pandemic has also created significant volatility, uncertainty and disruption in global credit and financial markets. Such impacts, as well as any further disruptions to or reductions in the availability of credit or other sources of capital as the pandemic continues to progress or persist, could also adversely affect our ability to access capital on favorable terms to meet our objectives. Any of these factors could have a material adverse impact on our business, results of operations, financial condition and cash flows.

In addition, governments in several countries where we operate, including the United States, have enacted stabilization and stimulus measures in an effort to counteract some of the impacts of COVID-19. The demand and business environments in which we operate have benefited from some of these measures. Any discontinuations, reductions, or other changes to such stabilization and stimulus programs may harm our customers' or suppliers' financial results and financial condition, and could also have an adverse macroeconomic impact that may lead to reductions in the demand for our products. Even if left unchanged or expanded, such stimulus and stabilization measures may fail over the long term to mitigate the adverse economic effects of the pandemic, and may fail to prevent or exacerbate any long-term economic downturns.

As a result of the uncertain scope and duration of the COVID-19 pandemic and the uncertain timing of any national, regional or global recovery and economic normalization, we are unable to estimate the long-term impacts on our operations and financial results. As a result, we may decide to limit or refrain from providing financial guidance in the manner we have done in prior reporting periods, which could negatively affect our stock price.

Increasingly restrictive export regulations and other trade barriers may materially harm our business.

Sales of our products to customers outside of the United States represent a significant part of our past and anticipated revenues, including sales involving exports from the United States to China. There is a continuing trend of increasing tariffs and trade controls affecting exports to China. For example, the U.S. Department of Commerce, Bureau of Industry and Security, has recently amended the U.S. Export Administration Regulations to expand license requirements on exports to entities in China that may support military end uses. These rules expand export license requirements on a broader set of items from the U.S., including many of our products and for a broader set of customers in China and elsewhere. There is no assurance that we will obtain any such licenses on a timely basis or at all. There also remains considerable uncertainty regarding the interpretation and implementation of these rules. These and other regulatory changes could materially and negatively affect our future sales and operating results.

We rely on the security and integrity of our electronic data systems and our business can be damaged by disruptions, security breaches or other compromises of these systems.

We rely on electronic data systems to operate and manage our business and to process, maintain, and safeguard information, including information belonging to our customers, partners, and personnel. These systems may be subject to failures or disruptions as a result of, among other things, natural disasters, accidents, power disruptions, telecommunications failures, new system implementations, acts of terrorism or war, physical security breaches, computer viruses or other cyber security attacks. For example, in June 2020, we discovered a data breach incident involving malware and related behaviors that resulted in unauthorized access to our information technology systems. Although we do not believe this incident had any significant impacts on our production and ordinary course operations, such incidents or other system failures or disruptions could subject us to downtime and delays, compromise or loss of sensitive or proprietary information, destruction or corruption of data, financial losses from remedial actions, breaches of obligations to third parties under privacy laws or contracts, or damage to our reputation or customer relationships. Any of the foregoing could have a material adverse effect on our business, operating results and financial condition.

Item 6. ***Exhibits***

The following exhibits are filed herewith and this list constitutes the exhibit index.

Exhibit Number	Exhibit Description	Incorporated by Reference Form	Date	Number	Filed Herewith
3.1	Amended and Restated Certificate of Incorporation of the Registrant as filed with the Delaware Secretary of State on June 17, 2003	S-1	October 20, 2003	3.01	
3.2	Amended and Restated Bylaws of the Registrant	8-K	July 22, 2016	3.2	
31.01	Certification of Chief Executive Officer pursuant to 15 U.S.C. Section 7241, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				X
31.02	Certification of Chief Financial Officer pursuant to 15 U.S.C. Section 7241, as adopted pursuant to Section 302 of the Sarbanes-Oxley Act of 2002				X
32.01	Certification of Chief Executive Officer and Chief Financial Officer pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002				*
101	The following financial statements from the Company's Quarterly Report on Form 10-Q for the quarter ended June 27, 2020, formatted in Inline XBRL: (i) Condensed Consolidated Balance Sheets, (ii) Condensed Consolidated Statements of Income, (iii) Condensed Consolidated Statements of Comprehensive Income, (iv) Condensed Consolidated Statements of Stockholders' Equity, (v) Condensed Consolidated Statements of Cash Flows, and (vi) Notes to Condensed Consolidated Financial Statements, tagged as blocks of text and including detailed tags				X
101.INS	XBRL Instance Document				X
101.SCH	XBRL Taxonomy Extension Schema Document				X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document				X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document				X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document				X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document				X
104	The cover page from the Company's Quarterly Report on Form 10-Q for the quarter ended June 27, 2020, formatted in Inline XBRL (included as Exhibit 101)				X

* This exhibit shall not be deemed "filed" for purposes of Section 18 of the Securities Exchange Act of 1934 or otherwise subject to the liabilities of that section, nor shall it be deemed incorporated by reference in any filing under the Securities Act of 1933 or the Securities Exchange Act of 1934, whether made before or after the date hereof and irrespective of any general incorporation language in any filings.

SIGNATURE

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned thereunto duly authorized.

			FormFactor, Inc.
Date:	August 4, 2020	By:	/s/ SHAI SHAHAR
			Shai Shahar
			Chief Financial Officer
			(Duly Authorized Officer, Principal Financial Officer, and Principal Accounting Officer)

Exhibit 31.01

CERTIFICATION OF CHIEF EXECUTIVE OFFICER
PURSUANT TO 15 U.S.C. SECTION 7241, AS
ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Michael D. Slessor, certify that:

1. I have reviewed the quarterly report on Form 10-Q of FormFactor, Inc.;

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

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

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

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

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

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

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

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

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

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

Date: August 4, 2020

/s/ MICHAEL D. SLESSOR

Michael D. Slessor
Chief Executive Officer
(Principal Executive Officer and Director)

Exhibit 31.02

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO 15 U.S.C. SECTION 7241,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002

I, Shai Shahar, certify that:

1. I have reviewed the quarterly report on Form 10-Q of FormFactor, Inc.;

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

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

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

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

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

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

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

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

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

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

Date: August 4, 2020

/s/ SHAI SHAHAR

Shai Shahar
Chief Financial Officer
(Principal Financial Officer and Principal Accounting Officer)

Exhibit 32.01

CERTIFICATION OF
CHIEF EXECUTIVE OFFICER AND CHIEF FINANCIAL OFFICER
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 on Form 10-Q of FormFactor, Inc., a Delaware corporation, for the period ended June 27, 2020, as filed with the Securities and Exchange Commission, each of the undersigned officers of FormFactor, Inc. certifies pursuant to 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that, to his respective knowledge:

1. The quarterly report fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934, as amended; and

2. The information contained in the quarterly report fairly presents, in all material respects, the financial condition and results of operations of FormFactor, Inc. for the periods presented therein.

Date:	August 4, 2020	/s/ MICHAEL D. SLESSOR
		Michael D. Slessor *Chief Executive Officer* *(Principal Executive Officer and Director)*
Date:	August 4, 2020	/s/ SHAI SHAHAR
		Shai Shahar *Chief Financial Officer* *(Principal Financial Officer and Principal Accounting Officer)*