# UNITED STATES
# SECURITIES AND EXCHANGE COMMISSION
**WASHINGTON, DC 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 May 31, 2019**

**OR**

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

**Commission File Number: 001-38102**

# SMART GLOBAL HOLDINGS, INC.
**(Exact Name of Registrant as Specified in its Charter)**

| | |
|---|---|
| **Cayman Islands**<br>( State or other jurisdiction of incorporation or organization) | **98-1013909**<br>(I.R.S. Employer Identification No.) |
| **c/o Maples Corporate Services Limited**<br>**P.O. Box 309**<br>**Ugland House**<br>**Grand Cayman, Cayman Islands**<br>(Address of principal executive offices) | **KY1-1104**<br>(Zip Code) |

**Registrant's telephone number, including area code: (510) 623-1231**

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

| Title of each class | Trading Symbol(s) | Name of each exchange on which registered |
|---|---|---|
| Ordinary shares, $0.03 par value per share | SGH | The NASDAQ Stock Market LLC<br>(NASDAQ Global Select 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 has submitted electronically every Interactive Data File required to be submitted pursuant to Rule 405 of Regulation S-T (§ 232.405 of this chapter) during the preceding 12 months (or for such shorter period that the registrant was required to submit such files). Yes ☒ No ☐

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

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

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

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

As of May 31, 2019, the registrant had 23,081,158 ordinary shares outstanding.

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**Cautionary Note Regarding Forward-Looking Statements**

This Quarterly Report on Form 10-Q includes a number of forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended, and Section 21E of the Securities Exchange Act of 1934, as amended, that involve many risks and uncertainties. Forward-looking statements are identified by the use of the words "would," "could," "will," "may," "expect," "believe," "should," "anticipate," "if," "future," "intend," "plan," "estimate," "potential," "target," "seek," or "continue" and similar words and phrases, including the negatives of these terms, or other variations of these terms, that denote future events. These statements reflect our current views with respect to future events and our potential financial performance and are subject to risks and uncertainties that could cause our actual results and financial position to differ materially and adversely from what is projected or implied in any forward-looking statements included in this report. These factors include, but are not limited to, the risks described under the caption "Risk Factors" in the documents we file from time to time with the Securities and Exchange Commission, including in our Annual Report on Form 10-K for our fiscal year ended August 31, 2018, and in this report, and in Item 2 of Part I – "Management's Discussion and Analysis of Financial Condition and Results of Operations" and elsewhere in this report. Moreover, we operate in a very competitive and rapidly changing environment. New risks emerge from time to time. It is not possible for our management to predict all risks, nor can we assess the impact of all factors on our business or the extent to which any factor, or combination of factors, may cause actual results to differ materially from those contained in any forward-looking statements we may make. In light of these risks, uncertainties and assumptions, the forward-looking events and circumstances discussed in this report may not occur and actual results could differ materially and adversely from those anticipated or implied in the forward-looking statements. We make these forward-looking statements based upon information available on the date of this report, and we expressly disclaim any obligation to update or alter any forward-looking statements, whether as a result of new information or otherwise, except as required by law.

## PART I—FINANCIAL INFORMATION

**Item 1. Financial Statements.**

**SMART Global Holdings, Inc.**
**and Subsidiaries**
**Condensed Consolidated Balance Sheets**
**(In thousands, except per share data)**
**(Unaudited)**

| | May 31, 2019 | August 31, 2018 |
|---|---|---|
| **Assets** | | |
| Current assets: | | |
| Cash and cash equivalents | $ 126,099 | $ 31,375 |
| Accounts receivable, net of allowances of $200 and $225 as of May 31, 2019 and August 31, 2018, respectively | 230,177 | 237,212 |
| Inventories | 132,816 | 221,419 |
| Prepaid expenses and other current assets | 31,052 | 32,043 |
| Total current assets | 520,144 | 522,049 |
| Property and equipment, net | 67,135 | 56,615 |
| Other noncurrent assets | 14,603 | 22,449 |
| Intangible assets, net | 23,326 | 26,255 |
| Goodwill | 44,805 | 45,394 |
| Total assets | $ 670,013 | $ 672,762 |
| **Liabilities and Shareholders' Equity** | | |
| Current liabilities: | | |
| Accounts payable | $ 177,519 | $ 223,186 |
| Accrued liabilities | 36,059 | 45,190 |
| Current portion of long-term debt | 19,087 | 27,409 |
| Total current liabilities | 232,665 | 295,785 |
| Long-term debt | 188,428 | 184,190 |
| Other long-term liabilities | 6,840 | 5,659 |
| Total liabilities | $ 427,933 | $ 485,634 |
| Commitments and contingencies (see Note 10) | | |
| Shareholders' equity: | | |
| Ordinary shares, $0.03 par value. Authorized 200,000 shares; issued and outstanding 23,081 and 22,480 as of May 31, 2019 and August 31, 2018, respectively | 696 | 678 |
| Additional paid-in capital | 268,652 | 250,191 |
| Accumulated other comprehensive loss | (186,263) | (175,995) |
| Retained earnings | 158,995 | 112,254 |
| Total shareholders' equity | 242,080 | 187,128 |
| Total liabilities and shareholders' equity | $ 670,013 | $ 672,762 |

See accompanying notes to unaudited condensed consolidated financial statements.

**SMART Global Holdings, Inc. and Subsidiaries**
**Condensed Consolidated Income Statements**
**(In thousands, except per share data)**
**(Unaudited)**

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | May 31, 2019 | May 25, 2018 | May 31, 2019 | May 25, 2018 |
| Net sales (1) | $ 235,657 | $ 335,477 | $ 933,599 | $ 914,851 |
| Cost of sales | 192,622 | 257,423 | 748,364 | 705,944 |
| Gross profit | 43,035 | 78,054 | 185,235 | 208,907 |
| Operating expenses: | | | | |
| Research and development | 11,330 | 9,763 | 34,384 | 28,165 |
| Selling, general, and administrative | 24,306 | 19,597 | 73,202 | 55,502 |
| Total operating expenses | 35,636 | 29,360 | 107,586 | 83,667 |
| Income from operations | 7,399 | 48,694 | 77,649 | 125,240 |
| Interest expense, net | (5,001) | (4,098) | (16,149) | (12,927) |
| Other income (expense), net | 97 | (7,145) | (2,980) | (7,312) |
| Total other expense | (4,904) | (11,243) | (19,129) | (20,239) |
| Income before income taxes | 2,495 | 37,451 | 58,520 | 105,001 |
| Provision for income taxes | 550 | 5,505 | 12,813 | 15,256 |
| Net income | $ 1,945 | $ 31,946 | $ 45,707 | $ 89,745 |
| Earnings per share: | | | | |
| Basic | $ 0.08 | $ 1.44 | $ 2.00 | $ 4.09 |
| Diluted | $ 0.08 | $ 1.37 | $ 1.96 | $ 3.90 |
| Shares used in computing earnings per share: | | | | |
| Basic | 23,005 | 22,206 | 22,824 | 21,932 |
| Diluted | 23,330 | 23,306 | 23,374 | 23,020 |

(1) Includes sales to affiliates of $26,427 and $94,641 in the three and nine months ended May 31, 2019, respectively, and $39,665 and $100,737 for the corresponding periods of fiscal 2018. (see Note 3).

See accompanying notes to unaudited condensed consolidated financial statements.

**SMART Global Holdings, Inc. and Subsidiaries**
**Condensed Consolidated Statements of Comprehensive Income (Loss)**
**(In thousands)**
**(Unaudited)**

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | May 31, 2019 | May 25, 2018 | May 31, 2019 | May 25, 2018 |
| Net income | $ 1,945 | $ 31,946 | $ 45,707 | $ 89,745 |
| Other comprehensive income (loss): | | | | |
| Foreign currency translation | (16,209) | (17,974) | (10,268) | (18,740) |
| Comprehensive income (loss) | $ (14,264) | $ 13,972 | $ 35,439 | $ 71,005 |

See accompanying notes to unaudited condensed consolidated financial statements.

**SMART Global Holdings, Inc. and Subsidiaries**
**Condensed Consolidated Statement of Equity**
**(In thousands)**
**(Unaudited)**

| | Ordinary shares | | Additional paid-in capital | Accumulated other comprehensive loss | Retained earnings (accumulated deficit) | Total shareholders' equity |
|---|---|---|---|---|---|---|
| | Shares | Amount | | | | |
| Balances as of August 25, 2017 | 21,666 | $ 653 | $ 232,162 | $ (143,210) | $ (7,209) | $ 82,396 |
| Stock-based compensation expense | — | — | 1,605 | — | — | 1,605 |
| Issuance of ordinary shares from exercises | 81 | 3 | 919 | — | — | 922 |
| Issuance of ordinary shares from release of restricted stock units | 4 | — | — | — | — | — |
| Foreign currency translation | — | — | — | (7,177) | — | (7,177) |
| Net income | — | — | — | — | 21,005 | 21,005 |
| Balance as of November 24, 2017 | 21,751 | 656 | 234,686 | (150,387) | 13,796 | 98,751 |
| Stock-based compensation expense | — | — | 1,697 | — | — | 1,697 |
| Issuance of ordinary shares from exercises | 300 | 9 | 3,246 | — | — | 3,255 |
| Issuance of ordinary shares from release of restricted stock units | 55 | 1 | (1) | — | — | — |
| Foreign currency translation | — | — | — | 6,411 | — | 6,411 |
| Net income | — | — | — | — | 36,794 | 36,794 |
| Balance as of February 23, 2018 | 22,106 | 666 | 239,628 | (143,976) | 50,590 | 146,908 |
| Stock-based compensation expense | — | — | 3,297 | — | — | 3,297 |
| Issuance of ordinary shares from exercises | 202 | 6 | 2,172 | — | — | 2,178 |
| Foreign currency translation | — | — | — | (17,974) | — | (17,974) |
| Net income | — | — | — | — | 31,946 | 31,946 |
| Balance as of May 25, 2018 | 22,308 | $ 672 | $ 245,097 | $ (161,950) | $ 82,536 | $ 166,355 |

See accompanying notes to unaudited condensed consolidated financial statements.

**SMART Global Holdings, Inc. and Subsidiaries**
**Condensed Consolidated Statement of Equity (continued)**
**(In thousands)**
**(Unaudited)**

| | Ordinary shares | | Additional paid-in capital | Accumulated other comprehensive loss | Retained earnings | Total shareholders' equity |
|---|---|---|---|---|---|---|
| | Shares | Amount | | | | |
| Balances as of August 31, 2018 | 22,480 | $ 678 | $ 250,191 | $ (175,995) | $ 112,254 | $ 187,128 |
| Stock-based compensation expense | — | — | 4,055 | — | — | 4,055 |
| Issuance of ordinary shares from exercises | 210 | 6 | 2,396 | — | — | 2,402 |
| Issuance of ordinary shares from release of restricted stock units | 55 | 2 | (2) | — | — | — |
| Issuance of ordinary shares from employee share purchase plan | 36 | 1 | 967 | — | — | 968 |
| Effect of adopting ASC 606 | — | — | — | — | 1,034 | 1,034 |
| Foreign currency translation | — | — | — | 3,102 | — | 3,102 |
| Net income | — | — | — | — | 30,976 | 30,976 |
| Balance as of November 30, 2018 | 22,781 | 687 | 257,607 | (172,893) | 144,264 | 229,665 |
| Stock-based compensation expense | — | — | 4,148 | — | — | 4,148 |
| Issuance of ordinary shares from exercises | 87 | 3 | 1,068 | — | — | 1,071 |
| Issuance of ordinary shares from release of restricted stock units | 67 | 1 | (1) | — | — | — |
| Withholding tax on restricted stock units | (8) | — | (219) | — | — | (219) |
| Foreign currency translation | — | — | — | 2,839 | — | 2,839 |
| Net income | — | — | — | — | 12,786 | 12,786 |
| Balance as of March 1, 2019 | 22,927 | 691 | 262,603 | (170,054) | 157,050 | 250,290 |
| Stock-based compensation expense | — | — | 4,433 | — | — | 4,433 |
| Issuance of ordinary shares from exercises | 28 | 1 | 296 | — | — | 297 |
| Issuance of ordinary shares from release of restricted stock units | 52 | 2 | (2) | — | — | — |
| Issuance of ordinary shares from employee share purchase plan | 74 | 2 | 1,333 | — | — | 1,335 |
| Withholding tax on restricted stock units | — | — | (11) | — | — | (11) |
| Foreign currency translation | — | — | — | (16,209) | — | (16,209) |
| Net income | — | — | — | — | 1,945 | 1,945 |
| Balance as of May 31, 2019 | 23,081 | $ 696 | $ 268,652 | $ (186,263) | $ 158,995 | $ 242,080 |

See accompanying notes to unaudited condensed consolidated financial statements.

**SMART Global Holdings, Inc. and Subsidiaries**
**Condensed Consolidated Statements of Cash Flows**
**(In thousands)**
**(Unaudited)**

| | Nine Months Ended | |
|---|---|---|
| | May 31, 2019 | May 25, 2018 |
| Cash flows from operating activities: | | |
| Net income | $ 45,707 | $ 89,745 |
| Adjustments to reconcile net income to net cash provided by operating activities: | | |
| Depreciation and amortization | 20,152 | 18,656 |
| Share-based compensation | 12,636 | 6,599 |
| Provision for doubtful accounts receivable and sales returns | (24) | (13) |
| Deferred income tax benefit | 430 | (1,376) |
| (Gain) loss on disposal of property and equipment | 21 | 230 |
| Write off of long-term asset | — | 250 |
| Amortization of debt discounts and issuance costs | 2,085 | 2,165 |
| Changes in operating assets and liabilities: | | |
| Accounts receivable | 7,658 | (86,706) |
| Inventories | 82,771 | (27,940) |
| Prepaid expenses and other assets | 1,787 | (3,495) |
| Accounts payable | (44,885) | 83,879 |
| Accrued expenses and other liabilities | (7,622) | (4,703) |
| Net cash provided by operating activities | 120,716 | 77,291 |
| Cash flows from investing activities: | | |
| Capital expenditures and deposits on equipment | (30,112) | (18,251) |
| Proceeds from sale of property and equipment | 71 | 101 |
| Acquisition of business, net of cash acquired | (148) | — |
| Net cash used in investing activities | (30,189) | (18,150) |
| Cash flows from financing activities: | | |
| Fees paid for revolving line of credit financing | — | (768) |
| Long-term debt payment | (5,073) | (18,402) |
| Payment of costs related to initial public offering (IPO) | — | (1,591) |
| Proceeds from borrowings under revolving line of credit | 235,500 | 277,500 |
| Repayments of borrowings under revolving line of credit | (235,500) | (277,500) |
| Proceeds from issuance of ordinary shares from share option exercises | 3,770 | 6,170 |
| Proceeds from issuance of ordinary shares from employee share purchase plan | 2,303 | — |
| Withholding tax on restricted stock units | (230) | — |
| Net cash provided by (used in) financing activities | 770 | (14,591) |
| Effect of exchange rate changes on cash, cash equivalents and restricted cash * | (2,432) | (3,198) |
| Net increase in cash, cash equivalents and restricted cash * | 88,865 | 41,352 |
| Cash, cash equivalents and restricted cash at beginning of period * | 37,234 | 29,463 |
| Cash, cash equivalents and restricted cash at end of period * | $ 126,099 | $ 70,815 |
| Supplemental disclosures of cash flow information: | | |
| Cash paid during the period: | | |
| Cash paid for interest | $ 14,888 | $ 11,048 |
| Cash paid for income taxes, net of refunds | 13,817 | 17,085 |
| Noncash activities information: | | |
| Capital expenditures included in accounts payable at period end | 2,455 | 2,905 |
| Unpaid debt fees related to term loan and revolver | — | 469 |
| Proceeds receivable from the exercise of stock options | — | (198) |

** Cash balance was adjusted to include restricted cash upon adoption of ASU 2016-18 in fiscal 2019.*

See accompanying notes to unaudited condensed consolidated financial statements.

**Note 1. Basis of Presentation and Principles of Consolidation**

***(a) Overview***

On August 26, 2011, SMART Global Holdings, Inc., formerly known as Saleen Holdings, Inc., a Cayman Islands exempted company (SMART Global Holdings, and together with its subsidiaries, the Company), consummated a transaction with SMART Worldwide Holdings, Inc., formerly known as SMART Modular Technologies (WWH), Inc. (SMART Worldwide), pursuant to an Agreement and Plan of Merger whereby, through a series of transactions, SMART Global Holdings acquired substantially all of the equity interests of SMART Worldwide with SMART Worldwide surviving as an indirect wholly owned subsidiary of SMART Global Holdings (the Acquisition). SMART Global Holdings is an entity that was formed by investment funds affiliated with Silver Lake Partners and Silver Lake Sumeru (collectively Silver Lake). As a result of the Acquisition, since there was a change of control resulting in Silver Lake as the controlling shareholder group, the Company applied the acquisition method of accounting and established a new basis of accounting.

The Company, through its subsidiaries, provides data compute and storage products and solutions sold primarily to original equipment manufacturers (OEMs) as well as end customers for enterprise applications. The Company offers these solutions to customers worldwide and also offers custom supply chain services including procurement, logistics, inventory management, temporary warehousing, kitting and packaging services.

SMART Global Holdings is domiciled in the Cayman Islands and has its U.S. headquarters in Newark, California. The Company has operations in the United States, Brazil, Malaysia, Taiwan, Hong Kong, Scotland, Singapore and South Korea.

***(b) Basis of Presentation***

The accompanying condensed consolidated financial statements comprise SMART Global Holdings and its wholly owned subsidiaries. Intercompany transactions have been eliminated in the condensed consolidated financial statements.

The Company uses a 52- to 53-week fiscal year ending on the last Friday in August. The three and nine months ended May 31, 2019 and May 25, 2018 were both 13-week and 39-week fiscal periods, respectively.

The accompanying unaudited condensed consolidated financial statements and related notes have been prepared in accordance with U.S. generally accepted accounting principles (U.S. GAAP) and in conformity with the rules and regulations of the Securities and Exchange Commission (SEC) applicable to interim financial information. As such, certain information and footnote disclosures normally included in complete annual financial statements prepared in accordance with U.S. GAAP have been omitted in accordance with the rules and regulations of the SEC. In the opinion of management, the accompanying unaudited condensed consolidated financial statements contain all adjustments, consisting of normal recurring accruals, necessary to present fairly the financial position of the Company and its results of operations and cash flows for the interim periods presented. The financial data and other information disclosed in these notes to the condensed consolidated financial statements related to the interim periods are unaudited.

All financial information for two of the Company’s subsidiaries, SMART Modular Technologies Indústria de Componentes Eletrônicos Ltda. (SMART Brazil) and SMART Modular Technologies do Brasil Indústria e Comércio de Componentes Ltda. (SMART do Brazil), is included in the Company’s condensed consolidated financial statements on a one-month lag because their fiscal years begin August 1 and end July 31.

***(c) Use of Estimates***

The preparation of consolidated financial statements in conformity with U.S. GAAP requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosure of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting periods presented. Actual results could differ from the estimates made by management. Significant items subject to such estimates and assumptions include the useful lives of long-lived assets, the valuation of deferred tax assets and inventory, share-based compensation, the estimated net realizable value of Brazilian tax credits, income tax uncertainties and other contingencies.

***(d) Revenue***

The Company’s revenues include products and services. The Company’s product revenues are predominantly derived from the sale of memory modules, Flash memory cards and storage products, which the Company designs and manufactures. The Company’s service revenues are derived from procurement, logistics, inventory management, temporary warehousing, kitting and packaging services. Also, a small portion of the Company’s product sales include extended warranty and on-site services, subscriptions to the Company’s high performance computing environment, professional services, software and related support.

The Company determines revenue recognition through the following steps: (1) identification of the contract with a customer; (2) identification of the performance obligations in the contract; (3) determination of the transaction price; (4) allocation of the transaction price to the performance obligations in the contract; and (5) recognition of revenue when, or as, a performance obligation is satisfied.

The Company's contracts are executed through a combination of written agreements along with purchase orders with all customers including certain general terms and conditions. Generally, purchase orders entail products, quantities and prices, which define the performance obligations of each party and are approved and accepted by the Company. The Company's contracts with customers do not include extended payment terms. Payment terms vary by contract type and type of customer and generally range from 30 to 45 days from invoice. Additionally, taxes assessed by a governmental authority that are both imposed on and concurrent with a specific revenue-producing transaction, that are collected by the Company from a customer and deposited with the relevant government authority, are excluded from revenue.

The transaction price is determined based on the consideration to which the Company will be entitled in exchange for transferring goods or services to the customer adjusted for estimated variable consideration. Variable consideration may include discounts, rights of return, refunds, and other similar obligations. The Company allocates the transaction price to each distinct product and service based on its relative standalone selling price. The standalone selling price for products primarily involves the cost to produce the deliverable plus the anticipated margin and for services is estimated based on the Company's approved list price.

In the normal course of business, the Company does not accept product returns unless the items are defective as manufactured. The Company establishes provisions for estimated returns and warranties. In addition, the Company does not typically provide customers with the right to a refund and does not transact for noncash consideration.

*Standard Products*

The Company's main performance obligations are to deliver the requested goods to customers according to the agreed-upon shipping terms. The Company recognizes revenue when control transfers to the customer (i.e., when the Company's performance obligation is satisfied). The Company invoices the customer and recognizes revenues for such delivery when control transfers based on shipping terms.

*Customized Products*

For customized product sales with terms that require the customer to purchase 100% of all parts built to fulfill the customers forecast, the Company recognizes revenue when control of the underlying assets passes to the customer, as the customer is able to both direct the use of, and obtain substantially all of the remaining benefit from the assets; the customer has the significant risks and rewards associated with ownership of the assets; and the Company has a present right to payment. For these sales, control passes when the Company has made these products available to the customer and under the terms of the agreement cannot repurpose them without the customer's express consent. Accordingly, the Company will recognize revenue at the point in time when products made to the customer's order or forecast are completed and made available to the customer.

Non-cancellable nonrefundable, or NCNR, customized product sales are recognized over time on a cost incurred basis. The customer obtains control and benefits from the services as they are performed over the period based on the cost input measure in the production process for the NCNR customized product. The terms within the NCNR sales orders provide the Company with a legally enforceable right to receive payment including a reasonable profit margin upon customer cancellation for performance completed to date. Accordingly, the Company recognizes revenue over time as customized products listed within the NCNR orders are completed.

*Computing Products and Services*

A small portion of the Company's product sales includes extended warranty and on-site services, subscriptions to the Company's high performance computing environment, professional consulting services including installation and other services, and hardware and software related support. Each contract may contain multiple performance obligations, which requires the transaction price to be allocated to each performance obligation. The Company allocates the consideration to each performance obligation based on the relative selling price. The Company uses best-estimated selling price, determined as the best estimate of the price at which the Company would transact if it sold the deliverable regularly on a stand-alone basis.

For services provided to the customers over a period of time, such revenues are recognized over time in line with when the customer receives and consumes the benefit of the services. Extended warranty and on-site services, hardware support, software support, and subscription revenue for access to the Company's high performance computing environment is deferred and recognized ratably over the contractual period as the Company transfers control as it satisfies its performance obligations over time as the services are rendered. Subscription revenue for certain customers is recognized based on the contractual fee to use the high-performance-computing environment. Professional consulting services revenue is recognized as the service is performed and the customer obtains control and benefits from the services as they are performed over the period. The methods of recognizing revenue for each of these products and services were selected because they reflect a faithful depiction of the transfer of control.

*Agency Services*

The Company has service performance obligations for agency related services such as procurement, logistics, inventory management, temporary warehousing, kitting and packaging services for certain agency basis customers. The agency services are also known as supply chain services and the performance obligations for these services consist of customized, integrated supply chain services management to assist customers in the planning, execution and overall management of the procurement processes.

For these customers that are accounted for on an agency basis, the Company recognizes as revenue the amount billed less the material procurement costs of products serviced as an agent with the cost of providing these services embedded with the cost of sales. The Company has separate agent performance obligations as follows: (a) procurement, logistics, and inventory management, (b) temporary warehousing, and (c) kitting and packaging services for these customers. Revenue from these arrangements is recognized as service revenue and is determined by a fee for services based on material procurement costs (i.e. fee as a percentage of the associated material being procured, warehoused, kitted or packaged). The Company recognizes revenue for procurement, logistics and inventory management upon the completion of the services or performance obligation, typically upon shipment of the product, as the criteria for over time recognition is not met. For temporary warehousing, kitting and packaging services, revenue is recognized over time, but the period of performance is typically very short in duration. There are no obligations subsequent to shipment of the product under the agency arrangements.

*Contract Costs*

As a practical expedient, the Company recognizes the incremental costs of obtaining a contract, specifically commission expenses that have an amortization period of less than twelve months, as an expense when incurred. Additionally, the Company has adopted an accounting policy to recognize shipping costs that occur after control transfers, if any, to the customer as a fulfillment activity. The Company records shipping and handling costs related to revenue transactions within cost of sales as a period cost.

*Gross Billings and Net Sales*

The following is a summary of the Company's gross billings to customers and net sales for services and products (in thousands):

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | May 31, 2019 | May 25, 2018 (2) | May 31, 2019 | May 25, 2018 (2) |
| Service revenue, net | $ 9,692 | $ 11,270 | $ 35,343 | $ 30,746 |
| Cost of purchased materials - service (1) | 206,097 | 258,098 | 802,630 | 714,883 |
| Gross billings for services | 215,789 | 269,368 | 837,973 | 745,629 |
| Product net sales | 225,965 | 324,207 | 898,256 | 884,105 |
| Gross billings to customers | $ 441,754 | $ 593,575 | $ 1,736,229 | $ 1,629,734 |
| Product net sales | $ 225,965 | $ 324,207 | $ 898,256 | $ 884,105 |
| Service revenue, net | 9,692 | 11,270 | 35,343 | 30,746 |
| Net sales | $ 235,657 | $ 335,477 | $ 933,599 | $ 914,851 |

(1) Represents material procurement costs of products provided as an agent reported on a net basis.
(2) Amounts for fiscal 2018 are accounted for under ASC 605 (refer to Note 1(u)).

Gross billings to customers in the table above represents total amounts invoiced to customers during the period and is the sum of net sales plus material procurement costs of products the Company provides as an agent. The amount invoiced to customers for agency related services is the total of the related material procurement costs and fees for providing its services. Gross billings to customers are reflected in accounts receivable for unpaid invoices as of the end of the period. Additionally, material procurement costs of products the Company manages as an agent on behalf of its customers on hand as of the end of the period are reflected in inventory. Both the amounts in accounts receivable and inventory impact the determination of net cash provided by (or used in) operations.

*Contract Balances*

The Company records accounts receivable when it has an unconditional right to consideration. Contract assets represent amounts recognized as revenue for which the Company does not have the unconditional right to consideration. All contract assets represent amounts related to invoices expected to be issued during the next 12-month period and are recorded as prepaid expenses and other current assets. Contract liabilities are recorded when cash payments are received or due in advance of performance. Contract liabilities consist of advance payments and deferred revenue, where the Company has unsatisfied performance obligations. Contract liabilities are classified as deferred revenue and are allocated between accrued liabilities and other long-term liabilities on our condensed consolidated balance sheet based on the timing of when the customer takes control of the asset or receives the benefit of the service. Payment terms vary by customer. The time between invoicing and when payment is due is not significant. Changes in the accounts receivable, contract assets and the deferred revenues balances during the nine months ended May 31, 2019 are as follows (in thousands):

| | May 31, 2019 | September 1, 2018 | $ Change |
|---|---|---|---|
| Accounts receivable | $ 230,177 | $ 240,098 | $ (9,921) |
| Contract assets | $ — | $ 1,136 | $ (1,136) |
| Deferred revenue | $ 13,635 | $ 11,750 | $ 1,885 |

The decrease in contract assets of $1.1 million from September 1, 2018 to $0 as of May 31, 2019 was primarily driven by an increase in billing of amounts that had been recognized as revenue in prior periods and recorded as contract assets because they had not been billed. The increase in deferred revenue from $11.8 million to $13.6 million was due to additional funds collected for hosting and support contracts signed during the quarter in which billing occurred in advance of revenue recognition. During the nine months ended May 31, 2019, $5.3 million of revenue recognized was included in the deferred revenue balance at the beginning of the period, which was offset by additional deferrals during the period.

*Disaggregation of Revenue*

The Company disaggregates revenue by source of revenue and geography; no other level of disaggregation is required considering the type of products, customer, markets, contracts, duration of contracts, timing of transfer of control, and sales channels. The revenue by geography is disclosed in Note 11, and revenue by source is as follows (in thousands):

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | May 31, 2019 | May 25, 2018 | May 31, 2019 | May 25, 2018 |
| Brazil | $ 100,982 | $ 232,742 | $ 447,372 | $ 599,225 |
| Specialty Memory | 98,755 | 102,735 | 354,312 | 315,626 |
| Specialty Compute and Storage Solutions | 35,920 | — | 131,915 | — |
| Total net sales | $ 235,657 | $ 335,477 | $ 933,599 | $ 914,851 |

*Revenue Allocated to Remaining Performance Obligations*

The Company's performance obligations related to product sales have a contractual duration of less than one year. The Company elected to apply the optional exemption practical expedient provided in ASC 606 and, therefore, is not required to disclose the aggregate amount of the transaction price allocated to those performance obligations that are unsatisfied or partially unsatisfied at the end of the reporting period.

Remaining performance obligations represent contracted revenue related to support services that have not yet been recognized. The Company expects to recognize revenue on the remaining performance obligations as follows (in thousands):

| | May 31, 2019 |
|---|---|
| Within 1 year | $ 9,294 |
| 2-3 years | 4,117 |
| Thereafter | 224 |
| | $ 13,635 |

*(e)* ***Cash and Cash Equivalents***

All highly liquid investments with maturities of 90 days or less from original dates of purchase are carried at cost, which approximates fair value, and are considered to be cash equivalents. Cash and cash equivalents include cash on hand, cash deposited in checking and saving accounts, money market accounts, and securities with maturities of less than 90 days at the time of purchase. Due to the adoption of ASU 2016-18 in fiscal 2019, the presentation of the Statement of Cash Flows has been updated with the inclusion of restricted cash – refer to Note 1(u) for details.

*(f)* ***Allowance for Doubtful Accounts***

The Company evaluates the collectability of accounts receivable based on a combination of factors. In cases where the Company is aware of circumstances that may impair a specific customer's ability to meet its financial obligations, the Company records a specific allowance against amounts due and, thereby, reduces the net recognized receivable to the amount management reasonably believes will be collected. For all other customers, the Company recognizes allowances for doubtful accounts based on a combination of factors including the length of time the receivables are outstanding, industry and geographic concentrations, the current business environment and historical experience.

*(g)* ***Derivative Financial Instrument***

The Company records the assets or liabilities associated with derivative instruments at fair value based on Level 2 inputs in other current assets or other current liabilities, respectively, in the condensed consolidated balance sheets. The accounting for gains and losses resulting from changes in fair value depends on the use of the derivative and whether it is designated and qualifies for hedge accounting. See Note 4 for further details.

*(h)* ***Inventories***

Inventories are valued at the lower of actual cost or net realizable value. Inventory value is determined on a specific identification basis for material and an allocation of labor and manufacturing overhead. At each balance sheet date, the Company evaluates the ending inventories for excess quantities and obsolescence. This evaluation includes an analysis of sales levels by product family and considers historical demand and forecasted demand in relation to the inventory on hand, competitiveness of product offerings, market conditions and product life cycles. The Company adjusts carrying value to the lower of its cost or net realizable value. Inventory write-downs are not reversed and create a new cost basis.

*(i)* ***Prepaid State Value-Added Taxes (ICMS)***

Since 2004, the Sao Paulo State tax authorities have granted SMART Brazil a tax benefit to defer and eventually eliminate the payment of ICMS levied on certain imports from independent suppliers. This benefit, known as an ICMS Special Regime, is subject to renewal every two years. When the then current ICMS Special Tax Regime expired on March 31, 2010, SMART Brazil timely applied for a renewal of the benefit, however, the renewal was not granted until August 4, 2010.

On June 22, 2010, the Sao Paulo authorities published a regulation allowing companies that applied for a timely renewal of an ICMS Special Regime to continue utilizing the benefit until a final conclusion on the renewal request was rendered. As a result of this publication, SMART Brazil was temporarily allowed to utilize the benefit while it waited for its renewal. From April 1, 2010, when the ICMS benefit lapsed, through June 22, 2010 when the regulation referred to above was published, SMART Brazil was required to pay the ICMS taxes on imports, which payments result in ICMS credits that may be used to offset ICMS obligations generated from sales by SMART Brazil of its products; however, the vast majority of SMART Brazil's sales in Sao Paulo were either subject to a lower ICMS rate or were made to customers that were entitled to other ICMS benefits that enabled them to eliminate the ICMS levied on their purchases of products from SMART Brazil. As a result, from April 1, 2010 through June 22, 2010, SMART Brazil did not have sufficient ICMS collections against which to apply the credits and the credit balance increased significantly.

Effective February 1, 2011, in connection with its participation in a Brazilian government incentive program known as Support Program for the Technological Development of the Semiconductor and Display Industries Laws, or PADIS, SMART Brazil spun off the module manufacturing operations into SMART do Brazil, a separate subsidiary of the Company. In connection with this spin off, SMART do Brazil applied for a tax benefit from the State of Sao Paulo in order to obtain a deferral of state ICMS. This tax benefit is referred to as State PPB, or CAT 14. The CAT 14 approval was not obtained until July 21, 2011, and from February 1, 2011 until the CAT 14 approval was granted, SMART do Brazil did not have sufficient ICMS collections against which to apply the credits accrued upon payment of the ICMS on SMART do Brazil's imports and inputs locally acquired, and therefore, it generated additional excess ICMS credits.

As of May 31, 2019, the total ICMS tax credits reported on the Company's accompanying condensed consolidated balance sheet are R$33.9 million (or $8.6 million), of which (i) R$7.6 million (or $1.9 million) are fully vested ICMS credits, classified as prepaid and other current assets and R$24.3 million (or $6.1 million) are fully vested ICMS credits, classified as other noncurrent assets, and (ii) R$2.0 million (or $0.6 million) are ICMS credits subject to vesting in 48 equal monthly amounts, classified as prepaid expenses and other current assets (R$0.6 million or $0.2 million) and other noncurrent assets (R$1.4 million or $0.4 million). As of August 31, 2018, the total ICMS tax credits reported on the Company's accompanying condensed consolidated balance sheet are R$45.3 million (or $12.1 million), of which (i) R$16.6 million (or $4.4 million) are fully vested ICMS credits, classified as prepaid and other current assets and R$25.4 million (or $6.8 million) are fully vested ICMS credits, classified as other noncurrent assets, and (ii) R$3.3 million (or $0.9 million) are ICMS credits subject to vesting in 48 equal monthly amounts, classified as prepaid expenses and other current assets (R$0.6 million or $0.2 million) and other noncurrent assets (R$2.7 million or $0.7 million). It is expected that the excess ICMS credits will continue to be recovered in fiscal 2019 through fiscal 2022. The Company updates its forecast of the recoverability of the ICMS credits quarterly, considering the following key variables in Brazil: timing of government approvals of automated credit utilization, the total amount of sales, the product mix and the inter and intra state mix of sales. If these estimates or the mix of products or regions vary, it could take longer or shorter than expected to recover the accumulated ICMS credits, resulting in a reclassification of ICMS credits from current to noncurrent, or vice versa.

In April and June 2016, the Company filed cases with the State of Sao Paulo tax authorities to seek approval to sell excess ICMS credits. In December 2017, the Company obtained approval to sell R$31.6 million (or $8.0 million) of its ICMS credits. Once approved, sales of ICMS credits usually take three to six months to complete and typically incur a discount to the face amount of the credits sold, as well as fees for the arrangers of these sales which together aggregate 10% to 15% of the face amount of the credits being sold. Once the sale agreement is complete, the tax authorities usually approve the transfer of credits in monthly installments and the proceeds resulting from the sale of the aforementioned credits shall be received by the Company accordingly. The Company has recorded valuation adjustments for the estimated discount and fees that the Company will need to offer in order to sell the ICMS credits to other companies.

In the first quarter of fiscal 2019, the Company sold R$17.7 million (or $4.5 million) of its ICMS credits that had been approved to be sold in December 2017. The payments are to be received in 22 installments starting in the second quarter of fiscal 2019 through fiscal 2020. The Company received a total of R$8.0 million (or $2.0 million) of the monthly installments during the nine months ended May 31, 2019.

### *(j) Property and Equipment*

Property and equipment are recorded at cost. Depreciation and amortization are computed based on the shorter of the estimated useful lives or the related lease terms, using the straight-line method. Estimated useful lives are presented below:

| | Period |
|---|---|
| Asset: | |
| Manufacturing equipment | 2 to 5 years |
| Office furniture, software, computers and equipment | 2 to 5 years |
| Leasehold improvements* | 2 to 60 years |

* Includes the land lease for the Penang facility with a term expiring in 2070.

### *(k) Goodwill*

The Company performs a goodwill impairment test annually during the fourth quarter of its fiscal year and more frequently if events or circumstances indicate that impairment may have occurred. Such events or circumstances may, among others, include significant adverse changes in the general business climate. As of May 31, 2019 and August 31, 2018, the carrying value of goodwill on the Company's condensed consolidated balance sheet was $44.8 million and $45.4 million, respectively.

When conducting the annual impairment test for goodwill, the Company compares the estimated fair value of a reporting unit containing goodwill to its carrying value. If the fair value of the reporting unit is determined to be more than its carrying value, no goodwill impairment is recognized. The excess of the fair value of the reporting unit over the fair value of assets less liabilities is the implied value of goodwill and is used to determine the amount of impairment.

All of the $44.8 million carrying value of goodwill on the Company's condensed consolidated balance sheet as of May 31, 2019 is associated with the Company's three reporting units (Specialty Memory, Brazil and Penguin). No impairment of goodwill was recognized through May 31, 2019.

The changes in the carrying amount of goodwill during the nine months ended May 31, 2019 and fiscal 2018 are as follows (in thousands):

| | | Total |
|---|---|---|
| Balance as of August 25, 2017 | $ | 46,022 |
| Addition from business acquisition (see Note 2) | | 4,575 |
| Translation adjustments | | (5,203) |
| Balance as of August 31, 2018 | | 45,394 |
| Provisional adjustments from business acquisition (see Note 2) | | 671 |
| Translation adjustments | | (1,260) |
| Balance as of May 31, 2019 | $ | 44,805 |

***(l) Intangible Assets, Net***

The following table summarizes the gross amounts and accumulated amortization of intangible assets by type as of May 31, 2019 and August 31, 2018 (dollars in thousands):

| | | May 31, 2019 | | | August 31, 2018 | | |
|---|---|---|---|---|---|---|---|
| | Weighted avg. life (yrs) | Gross Carrying amount | Accumulated amortization | Net | Gross Carrying amount | Accumulated amortization | Net |
| Customer relationships | 5 - 7 | $ 14,700 | $ (2,056) | $ 12,644 | $ 37,187 | $ (22,968) | $ 14,219 |
| Trademarks/tradename | 7 | 12,200 | (1,707) | 10,493 | 12,200 | (400) | 11,800 |
| Technology | 4 | 250 | (61) | 189 | 5,150 | (4,914) | 236 |
| Backlog | < 1 | 400 | (400) | — | 400 | (400) | — |
| Total | | $ 27,550 | $ (4,224) | $ 23,326 | $ 54,937 | $ (28,682) | $ 26,255 |

Amortization expense related to intangible assets for the three and nine months ended May 31, 2019 totaled approximately $1.0 million and $3.0 million, respectively, and $1.2 million and $3.7 million, respectively for the corresponding periods of fiscal 2018. Acquired intangibles are amortized on a straight-line basis over the remaining estimated economic life of the underlying intangible assets.

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | May 31, 2019 | May 25, 2018 | May 31, 2019 | May 25, 2018 |
| Amortization of intangible assets classification (in thousands): | | | | |
| Cost of sales | $ 16 | $ — | $ 130 | $ — |
| Research and development | — | 245 | — | 735 |
| Selling, general and administrative | 960 | 976 | 2,882 | 2,992 |
| Total | $ 976 | $ 1,221 | $ 3,012 | $ 3,727 |

As of May 31, 2019, estimated amortization expenses of these intangible assets for the next five fiscal years and all years thereafter are as follows (in thousands):

| Fiscal year ending August: | | Amount |
|---|---|---|
| Remainder of fiscal 2019 | $ | 976 |
| 2020 | | 3,905 |
| 2021 | | 3,905 |
| 2022 | | 3,891 |
| 2023 | | 3,843 |
| 2024 and thereafter | | 6,806 |
| Total | $ | 23,326 |

***(m) Long-Lived Assets***

Long-lived assets, excluding goodwill, are reviewed for impairment whenever events or changes in circumstances indicate that the carrying amount of an asset group may not be recoverable. Recoverability of assets to be held and used is measured by a comparison of the carrying amount of an asset group to the future undiscounted cash flows expected to be generated by the asset group. If such assets are considered to be impaired, the impairment is measured by the amount by which the carrying amount of the assets exceeds the fair value of the assets. Assets to be disposed are reported at the lower of the carrying amount or fair value, less cost to sell. No impairment of long-lived assets was recognized during the three and nine months ended May 31, 2019.

***(n) Research and Development Expense***

Research and development expenditures are expensed in the period incurred.

***(o) Income Taxes***

The Company uses the asset and liability method of accounting for income taxes. Deferred tax assets and liabilities are recognized for the future consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax basis and net operating loss and credit carryforwards. When necessary, a valuation allowance is recorded to reduce tax assets to amounts expected to be realized. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income (or loss) in the period that includes the enactment date. The Company recognizes the effect of income tax positions only if those positions are more likely than not of being sustained. Recognized income tax positions are measured at the largest amount that is greater than 50% likely of being realized. Changes in recognition or measurement are reflected in the period in which the change in judgment occurs. The Company records interest and penalties related to unrecognized tax benefits in tax expense.

***(p) Foreign Currency Translation***

For foreign subsidiaries using the local currency as their functional currency, assets and liabilities are translated at exchange rates in effect at the balance sheet date and income and expenses are translated at average exchange rates during the period. The effect of this translation is reported in other comprehensive income (loss). Exchange gains and losses arising from transactions denominated in a currency other than the functional currency of the respective foreign subsidiaries are included in results of operations.

For foreign subsidiaries using the U.S. dollar as their functional currency, the financial statements of these foreign subsidiaries are remeasured into U.S. dollars using the historical exchange rate for property and equipment and certain other nonmonetary assets and liabilities and related depreciation and amortization on these assets and liabilities. The Company uses the exchange rate at the balance sheet date for the remaining assets and liabilities, including deferred taxes. A weighted average exchange rate is used for each period for revenues and expenses.

All foreign subsidiaries and branch offices, except those in Brazil and South Korea, use the U.S. dollar as their functional currency. The gains or losses resulting from the remeasurement process are recorded in other income (expense) in the accompanying condensed consolidated income statements.

During the three and nine months ended May 31, 2019, the Company recorded $144 thousand and $3.5 million, respectively, and $6.9 million and $7.3 million, respectively, for the corresponding periods of 2018, of foreign exchange losses primarily related to its Brazilian operating subsidiaries.

### *(q) Share-Based Compensation*

The Company accounts for share-based compensation under ASC 718, *Compensation—Stock Compensation*, which requires companies to recognize in their income statement all share-based payments, including grants of share options and other types of equity awards, based on the grant-date fair value of such share-based awards.

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | May 31, 2019 | May 25, 2018 | May 31, 2019 | May 25, 2018 |
| Share-based compensation expense by category (in thousands): | | | | |
| Cost of sales | $ 651 | $ 414 | $ 1,803 | $ 859 |
| Research and development | 673 | 325 | 1,967 | 887 |
| Selling, general and administrative | 3,109 | 2,558 | 8,866 | 4,853 |
| Total | $ 4,433 | $ 3,297 | $ 12,636 | $ 6,599 |

### *(r) Loss Contingencies*

The Company is subject to the possibility of various loss contingencies arising in the ordinary course of business. The Company considers the likelihood of a loss and the ability to reasonably estimate the amount of loss in determining the necessity for and amount of any loss contingencies. Estimated loss contingencies are accrued when it is probable that a liability has been incurred or an asset impaired and the amount of loss can be reasonably estimated. The Company regularly evaluates the most current information available to determine whether any such accruals should be recorded or adjusted.

### *(s) Comprehensive Income (Loss)*

Comprehensive income (loss) consists of net income (loss) and other gains and losses affecting shareholders' equity that, under U.S. GAAP are excluded from net income (loss). The Company's other comprehensive income (loss) generally consists of foreign currency translation adjustments.

### *(t) Concentration of Credit and Supplier Risk*

The Company's concentration of credit risk consists principally of cash and cash equivalents and accounts receivable. The Company's revenue and related accounts receivable reflect a concentration of activity with certain customers (see Note 12). The Company does not require collateral or other security to support accounts receivable. The Company performs periodic credit evaluations of its customers to minimize collection risk on accounts receivable and maintains allowances for potentially uncollectible accounts.

The Company relies on three suppliers for the majority of its raw materials. At May 31, 2019 and August 31, 2018, the Company owed these three suppliers $113.5 million and $138.4 million, respectively, which was recorded as accounts payable and accrued liabilities. The inventory purchases from these suppliers during the three and nine months ended May 31, 2019 were $0.2 billion and $1.0 billion, respectively, and $0.4 billion and $1.1 billion, respectively for the corresponding periods of fiscal 2018.

### *(u) New Accounting Pronouncements*

In October 2018, the Financial Accounting Standards Board ("FASB") issued Accounting Standards Update ("ASU") No. 2018-16, *Derivatives and Hedging (Topic 815) Inclusion of the Secured Overnight Financing Rate (SOFR) Overnight Index Swap (OIS) Rate as a Benchmark Interest Rate for Hedge Accounting Purposes*. This standard amends ASC 815, *Derivatives and Hedges*, and permits the SOFR OIS rate as an approved rate to be used in valuing derivative instruments. ASU 2018-16 is effective for fiscal years, including interim periods within those fiscal years, beginning after December 15, 2018, on a prospective basis. The Company will not adopt this standard before the fiscal year in which it becomes effective. At this time, this standard is not expected to have a material impact on the Company's consolidated financial statements.

In August 2018, the Securities and Exchange Commission ("SEC") adopted amendments to certain disclosure requirements in Securities Act Release No. 33-10532, Disclosure Update and Simplification. The amendments became effective on November 5, 2018. The SEC staff subsequently indicated that it would not object if a filer's first presentation of changes in shareholders' equity is included in its Form 10-Q for the quarter that begins after the final rule's effective date. Among the amendments is the requirement to present the changes in shareholders' equity in the interim financial statements (either in a separate statement or footnote) in quarterly reports on Form 10-Q. The analysis should present a reconciliation of the beginning balance to the ending balance of each period for which a consolidated income statement is required to be filed. The Company has implemented this requirement as of the second quarter for fiscal 2019.

In February 2018, the FASB issued ASU No. 2018-02, *Income Statement-Reporting Comprehensive Income (Topic 220): Reclassification of Certain Tax Effects from Accumulated Comprehensive Income*. The new guidance allows companies to reclassify standard tax effects resulting from the Tax Act, from accumulated other comprehensive income to retained earnings. The guidance also requires certain new disclosures regardless of the election. The Company is required to adopt the guidance in the first quarter of fiscal 2020. Early adoption is permitted. The Company is currently evaluating the timing and the impact of these amendments to its consolidated financial statements.

In November 2016, the FASB issued ASU No. 2016-18, *Statement of Cash Flows (Topic 230): Restricted Cash*, which clarifies the inclusion and presentation of changes in restricted cash and restricted cash equivalents in the statement of cash flows. The Company adopted ASU 2016-18 in fiscal 2019 on a retrospective basis.

The following table provides a reconciliation of cash and cash equivalents as previously reported within the Condensed Consolidated Statements of Cash Flows to cash, cash equivalents and restricted cash as currently reported in the Condensed Consolidated Statements of Cash Flows (in thousands):

| | August 31, 2018 | May 25, 2018 | August 25, 2017 |
|---|---|---|---|
| Cash, cash equivalents as previously reported in the Condensed Consolidated Statements of Cash Flows | $ 31,375 | $ 64,495 | $ 22,436 |
| Restricted cash (Other noncurrent assets) | 5,859 | 6,320 | 7,027 |
| Cash, cash equivalents as currently reported in the Condensed Consolidated Statements of Cash Flows | $ 37,234 | $ 70,815 | $ 29,463 |

In August 2016, the FASB issued ASU No. 2016-15, *Cash Flow Statements, Classification of Certain Cash Receipts and Cash Payments*. The new guidance is intended to address the diversity in practice in how certain cash receipts and cash payments are presented and classified in the statement of cash flows under Topic 230, Statement of Cash Flows, and other Topics. The guidance addresses eight specific cash flow classification issues with the objective of reducing diversity in practice. The Company adopted ASU 2016-15 in fiscal 2019 on a retrospective basis. The adoption of this standard did not have a material impact on its consolidated financial statements.

In February 2016, the FASB issued ASU No. 2016-02, *Leases (Topic 842)*, which modified lease accounting for both lessees and lessors to increase transparency and comparability by recognizing lease assets and lease liabilities by lessees for those leases classified as operating leases under previous accounting standards and disclosing key information about leasing arrangements. ASU 2016-02 will be effective for the Company beginning on September 1, 2019 and early adoption is permitted. In transition, lessees and lessors are required to recognize and measure leases at the beginning of the earliest period presented using a modified retrospective approach. In July 2018, the FASB issued ASU 2018-11, "Leases (topic 842): Targeted Improvements", which permits an entity to elect an additional transition method to the existing modified retrospective transition requirements. Under the new transition method, an entity could adopt the provisions of ASU No. 2016-02 by recognizing a cumulative-effect adjustment to the opening balance of retained earnings in the period of adoption without adjustment to the financial statements for periods prior to adoption. Consequently, an entity's reporting for the comparative periods presented in the financial statements in which it adopts the new leases standard will continue to be in accordance with the previous lease guidance in ASC Topic 840. The Company is currently evaluating the impact of adopting ASU 2016-02 on its consolidated financial statements. The Company currently expects to adopt the new standard using this optional transition method. However, as disclosed in Note 10(a), the Company has over $40.1 million in lease commitments at May 31, 2019 and believes that the adoption will have a material impact to the consolidated financial statements.

In May 2014, the FASB issued a new standard, ASU No. 2014-09, *Revenue from Contracts with Customers, as amended*, which supersedes nearly all existing revenue recognition guidance. The FASB has issued several amendments to the new standard, including clarification on identifying performance obligations. The amendments include ASU No. 2016-08, *Revenue from Contracts with Customers (Topic 606)—Principal versus Agent Considerations*, which was issued in March 2016, and clarifies the implementation guidance for principal versus agent considerations in ASU 2014-09. The new standard permits adoption either by using (i) a full retrospective approach for all periods presented in the period of adoption or (ii) a modified retrospective approach with the cumulative effect of initially applying the new standard recognized at the date of initial application and providing certain additional disclosures. The new standard is effective for annual reporting periods beginning after December 15, 2017. The Company has adopted the new standard effective September 1, 2018 using the modified retrospective approach applied to all contracts that are not completed contracts at the date of initial adoption (i.e. September 1, 2018).

The Company has completed its assessment and implemented policies, processes, and controls to support the standard measurement and disclosure requirements. Under ASC 606, the Company recognized a change to the timing of revenue recognition in two areas. The first relates to customized product sales orders deemed NCNR. Under previous accounting standards, the Company recognized revenue and costs related to these sales when products were shipped or delivered to the customers based on the terms of the purchase orders and sales agreements. Under ASC 606, the terms within the NCNR sales orders that provide the Company with a legally enforceable right to receive payment including a reasonable profit margin upon customer cancellation for performance completed to date will affect the timing of revenue recognition. Accordingly, the Company will recognize revenue over time as customized products listed within the NCNR orders are completed.

The second change for the Company under ASC 606 relates to the timing of revenue recognition for customized product sales with terms that require the customer to purchase 100% of all parts built to fulfill the customers forecast. Under previous accounting standards, the Company recognized revenue and costs related to these sales when products are shipped or delivered to the end-customers based on the terms of the purchase orders and sales agreements. Under ASC 606, the Company recognizes revenue when control of the underlying assets passes to the customer, as the customer is able to both direct the use of, and obtain substantially all of the remaining benefit from the assets; the customer has the significant risks and rewards associated with ownership of the assets; and the Company has a present right to payment. For these sales, control passes when the Company has made these products available to the customer and under the terms of the agreement cannot repurpose them without the customer’s express consent. Accordingly, the Company will recognize revenue at the point in time when products made to the customer’s forecast are completed and made available to the customer.

Results for reporting periods beginning after September 1, 2018 are presented under ASC 606, while prior period amounts are not adjusted and continue to be reported in accordance with the prior accounting under ASC 605. As a result of these changes, the Company recorded a net increase to opening retained earnings of $1.0 million as of September 1, 2018 due to the cumulative impact of adopting ASC 606, with a corresponding increase of $2.9 million in accounts receivables, $1.1 million in contract assets and a decrease of $3.0 million in inventory. Effective September 1, 2018, the Company recognized revenue on NCNR customized product sales over time and customized product sales where control has deemed to pass before shipment at the time that those products are made available to the customer as opposed to at the time of shipment.

The following tables summarize the impacts of ASC 606 adoption on the Company's condensed consolidated financial statements as of and for the periods ended May 31, 2019 (in thousands).

*Selected Consolidated Balance Sheet Line Items:*

| | As of May 31, 2019 | | |
|---|---|---|---|
| | **As Reported** | **Adjustment** | **Balances Without Adoption** |
| Accounts receivable | $ 230,177 | $ (7,464) | $ 222,713 |
| Inventories | $ 132,816 | $ 5,990 | $ 138,806 |
| Prepaid expenses and other current assets | $ 31,052 | $ (6) | $ 31,046 |
| Retained earnings | $ 158,995 | $ (1,480) | $ 157,515 |

*Selected Consolidated Statement of Comprehensive Income Line Items:*

| | Three Months Ended May 31, 2019 | | |
|---|---|---|---|
| | As Reported | Adjustment | Balances Without Adoption |
| Net sales | $ 235,657 | $ 8,177 | $ 243,834 |
| Cost of sales | $ 192,622 | $ 6,315 | $ 198,937 |
| Gross profit | $ 43,035 | $ 1,862 | $ 44,897 |
| Provision for income taxes | $ 550 | $ 56 | $ 606 |
| Net income | $ 1,945 | $ 1,806 | $ 3,751 |

| | Nine Months Ended May 31, 2019 | | |
|---|---|---|---|
| | As Reported | Adjustment | Balances Without Adoption |
| Net sales | $ 933,599 | $ (3,441) | $ 930,158 |
| Cost of sales | $ 748,364 | $ (3,001) | $ 745,363 |
| Gross profit | $ 185,235 | $ (440) | $ 184,795 |
| Provision for income taxes | $ 12,813 | $ 6 | $ 12,819 |
| Net income | $ 45,707 | $ (446) | $ 45,261 |

*Selected Consolidated Statement of Cash Flows Line Items:*

| | Nine Months Ended May 31, 2019 | | |
|---|---|---|---|
| | As Reported | Adjustment | Balances Without Adoption |
| Net income | $ 45,707 | $ (446) | $ 45,261 |
| Adjustment to reconcile net income to net cash provided by operating activities: | | | |
| Changes in operating assets and liabilities | | | |
| Accounts receivable | $ 7,658 | $ 4,577 | $ 12,235 |
| Inventories | $ 82,771 | $ (3,001) | $ 79,770 |
| Prepaid expenses and other assets | $ 1,787 | $ (1,130) | $ 657 |
| Net cash provided by operating activities | $ 120,716 | $ — | $ 120,716 |

**(2) Business Acquisitions**

**Penguin Computing**

On June 8, 2018, SMART Global Holdings entered into an Agreement and Plan of Merger (the Penguin Merger Agreement), by and among SMART Global Holdings, Glacier Acquisition Sub, Inc., a Delaware corporation and a wholly-owned indirect subsidiary of the SMART Global Holdings (Merger Sub), Penguin Computing, Inc., a California corporation (Penguin) and Fortis Advisors LLC, a Delaware limited liability company, solely in its capacity as the representative of the holders of the securities of Penguin. Pursuant to the Penguin Merger Agreement, on June 8, 2018, Merger Sub was merged with and into Penguin, with Penguin surviving as a wholly-owned indirect subsidiary of SMART Global Holdings (the Penguin Merger). SMART Global Holdings through one or more subsidiaries, paid the Penguin equityholders approximately $45 million at closing and assumed approximately $32.3 million of Penguin's outstanding indebtedness. SMART Global Holdings financed the acquisition with net proceeds of $60.0 million from the Incremental Amendment (as defined in Note 7). Pursuant to the Penguin Merger Agreement, the former equityholders of Penguin were also entitled to cash earn-out payments of up to $25.0 million based on Penguin's achievement of specified gross profit levels through December 31, 2018. SMART Global Holdings deposited $6.0 million of the purchase price into escrow as security for Penguin's indemnification obligations during the escrow period of one year. SMART Global Holdings also deposited $2.0 million of the purchase price into escrow as security for customary post-closing adjustments to the purchase price.

Under the acquisition method of accounting, the assets acquired and liabilities assumed of Penguin were recorded as of the acquisition date at their respective fair values. The reported consolidated financial condition after completion of the acquisition reflects these fair values. Penguin's results of operations are included in the consolidated financial statements from the date of acquisition.

The initial fair value of contingent consideration was estimated at the date of acquisition to be $3.0 million, which was recorded as a current liability. The Company determined the fair value of the obligations to pay contingent consideration using a real options technique which incorporates various estimates, including projected gross profit for the period, a volatility factor applied to gross profit based on year-on-year growth in gross profit of comparable companies, discount rates and the estimated amount of time until final payment is made. This fair value measurement is based on significant inputs not observable in the market, which ASU 820-10-35 refers to as Level 3 inputs. The resulting probability-weighted cash flows were discounted using the US Information Technology B Corporate Bond Yields of 4.06%, which is representative of a market participant assumption.

Subsequent to the acquisition date, the Company adjusted the contingent consideration to its current fair value with such changes recognized in income from operations. Changes in fair values reflect new information about the probability and timing of meeting the conditions of the gross profit target. As of December 31, 2018 and August 31, 2018, the fair value of the contingent consideration was $0.

A reconciliation of net cash exchanged in accordance with the Penguin Merger Agreement to the total purchase price as of the closing date of the merger, June 8, 2018, is presented below (in thousands):

| | | |
|---|---|---|
| Net cash for merger | $ | 42,316 |
| Cash and cash equivalents acquired | | 2,769 |
| Upfront payment in accordance with agreement | | 45,085 |
| Post-closing adjustments in accordance with agreement | | (3,479) |
| Total consideration | | 41,606 |
| Estimated fair value of contingent consideration | | 3,000 |
| Total purchase price | $ | 44,606 |

The total purchase consideration has been allocated to the tangible and intangible assets acquired and liabilities assumed. The assets acquired and liabilities assumed at the acquisition date are based upon their respective fair values summarized below (in thousands):

| | | Previously Reported | | Purchase Price Allocation Measurement period adjustment | | As Adjusted |
|---|---|---|---|---|---|---|
| Tangible assets acquired | $ | 84,707 | $ | (671) | $ | 84,036 |
| Liabilities assumed | | (72,226) | | | | (72,226) |
| Identifiable intangible assets | | 27,550 | | | | 27,550 |
| Goodwill | | 4,575 | | 671 | | 5,246 |
| Total net assets acquired | $ | 44,606 | $ | — | $ | 44,606 |

The provisional amounts presented in the table above pertained to the preliminary purchase price allocation reported in our Form 10-K for the fiscal year ended August 31, 2018. The measurement period adjustment, as recognized in the third quarter, is related to the reduction of inventory originally represented by the sellers as held by vendors for repairs. Upon further analysis, the Company confirmed with the vendors that the stated inventory or an obligation by the vendors to refund the Company did not exist as of June 8, 2018, the acquisition date.

We do not believe that the measurement period adjustments had a material impact on our consolidated statements of operations, balance sheets or cash flows in any periods previously reported. The final determination of the fair values were completed within the measurement period of up to one year from the acquisition date, and adjustments to provisional amounts that were identified during the measurement period were recorded in the reporting period in which the adjustment was determined.

Asset categories acquired included working capital, fixed assets, and identified intangible assets. The intangible assets are as follows (in thousands):

| | | Amount | Estimated Useful Life (in years) |
|---|---|---|---|
| Customer relationships | $ | 14,700 | 7 years |
| Trade name | | 12,200 | 7 years |
| Technology | | 250 | 4 years |
| Existing order backlog | | 400 | < 1 year |
| | $ | 27,550 | |

The excess of purchase price over the fair value amounts assigned to the assets acquired and liabilities assumed represents the goodwill amount resulting from the acquisition. The Company does not expect any portion of this goodwill to be deductible for tax purposes. The goodwill attributable to the Penguin Merger has been recorded as a noncurrent asset and is not amortized, but is subject to an annual review for impairment. Factors that contributed to the recognition of goodwill include the broader reach and capabilities of the Company into new technologies, markets and channels that leverage its existing products and services. Penguin brings an outstanding customer base, solid products and strong supplier relationships to the Company in the specialty compute, storage and networking markets. Penguin will have substantially improved access to capital to drive additional investment in, and further development and growth of its products and services.

As part of the Penguin Merger, the Company recorded a net deferred tax liability of $1.6 million. This amount was primarily comprised of $7.9 million related to non-goodwill intangible assets and other fair market value adjustments, offset by net deferred tax assets including acquired net operating losses and research credit carryovers totaling $6.3 million.

During fiscal 2018 the Company incurred certain costs related to the merger, which are included in selling, general and administrative expense in the consolidated income statements. Merger-related costs include the following (in thousands):

| | August 31, 2018 |
|---|---|
| Professional fees | $ 2,496 |
| Employee retention bonuses | 1,181 |
| | $ 3,677 |

For the period of June 8, 2018 (date of acquisition) to August 31, 2018, total revenues and net loss for Penguin amounted to $52.5 million and $0.7 million, respectively.

*Unaudited Pro Forma Information*

The results of operations related to the Penguin acquisition have been included in our consolidated income statements from the acquisition date. The following unaudited pro forma financial information presents our combined results of operations for the three and nine months ended May 25, 2018 as if the acquisition of Penguin and entering into the Incremental Amendment had occurred on August 27, 2016. The unaudited pro forma financial information is not necessarily indicative of what our consolidated results of operations actually would have been had the acquisition been completed on August 27, 2016. In addition, the unaudited pro forma financial information does not attempt to project the future results of operations of the combined company. The actual results may differ significantly from the pro forma results presented here due to many factors.

| (In thousands, except per share data) | Three Months Ended May 25, 2018 | Nine Months Ended May 25, 2018 |
|---|---|---|
| Total net sales | $ 383,927 | $ 1,063,994 |
| Net income | $ 32,468 | $ 91,002 |
| Earnings per share: | | |
| Basic | $ 1.46 | $ 4.15 |
| Diluted | $ 1.39 | $ 3.95 |

The unaudited pro forma financial information above reflects the following material adjustments:

- Incremental amortization expense related to the estimated fair value of identifiable intangible assets from the purchase price allocation.
- Incremental interest expense and amortization of debt issuance costs related to our Incremental Amendment.
- The adjustments to income tax expense as a result of the consolidation and pro forma adjustments.

**Premiere Logistics**

In February 2019, the Company acquired all of the outstanding shares of Premiere Customs Brokers, Inc. and Premiere Logistics, Inc., both privately-held California corporations, collectively Premiere Logistics. The primary purpose of this acquisition is to provide SMART with cost savings solutions in support of its own freight and logistics requirements. In connection with the acquisition, the Company paid upfront cash consideration of $192,000. Per the terms of the Stock Purchase Agreement, both parties have until July 31, 2019 to finalize the purchase price, which may be adjusted to reflect additional indebtedness and to finalize records presented at closing which may be adjusted to reflect changes to assets acquired or liabilities assumed by the Company.

The assets acquired and liabilities assumed at the acquisition date are based on their respective fair values summarized below (in thousands):

| | | |
|---|---|---|
| Tangible assets acquired | $ | 277 |
| Liabilities assumed | | (168) |
| Identified intangible assets | | 83 |
| Total net assets acquired | $ | 192 |

Results of operations of the business acquired have been included in the Company's consolidated financial statements subsequent to the date of acquisition. Pro forma financial information presented in these financial statements do not include any impact from Premiere Logistics because the impact is not material to the Company's consolidated income statement. The revenue and net income earned by the businesses acquired following the acquisition are not material to our consolidated results of operations.

## (3) Related Party Transactions

In the normal course of business, the Company had transactions with its affiliates as follows (in thousands):

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | May 31, 2019 | May 25, 2018 | May 31, 2019 | May 25, 2018 |
| Affiliates: | | | | |
| Net sales | $ 26,427 | $ 39,665 | $ 94,641 | $ 100,737 |

As of May 31, 2019 and August 31, 2018, amounts due from these affiliates were $10.5 million and $11.7 million, respectively.

## (4) Foreign Currency Exchange Contracts

The Company transacts business in various foreign currencies and has international sales and expenses denominated in foreign currencies, subjecting the Company to foreign currency risk. The Company utilizes foreign exchange forward contracts to mitigate foreign currency exchange rate risk associated with foreign-currency-denominated assets and liabilities, primarily third party payables. The Company does not use foreign currency contracts for speculative or trading purposes.

Foreign exchange forward contracts outstanding at May 31, 2019 are not designated as hedging instruments for hedge accounting purposes. Accordingly, any gains or losses resulting from changes in the fair value of the non-designated forward contracts are reported in other income (expense) in the condensed consolidated income statements. The gains and losses on these forward contracts generally offset the gains and losses associated with the underlying foreign-currency-denominated balances, which are also reported in other income (expense).

As of May 31, 2019, the Company's non-designated forward contacts resulted in a $0.6 million derivative asset. For the three and nine months ended May 31, 2019, the Company recognized realized losses in the amount of $0.5 million and $2.5 million, respectively, and net unrealized gains on the change in the fair value of the non-designated forward contracts in the amount of $2.1 million and $0.6 million, respectively.

## (5) Balance Sheet Details

***Inventories***

Inventories consisted of the following (in thousands):

| | May 31, 2019 | August 31, 2018 |
|---|---|---|
| Raw materials | $ 76,913 | $ 105,017 |
| Work in process | 12,234 | 35,977 |
| Finished goods | 43,669 | 80,425 |
| Total inventories* | $ 132,816 | $ 221,419 |

* As of May 31, 2019 and August 31, 2018, 22% and 22%, respectively, of total inventories represented inventory held under the Company's supply chain services.

***Prepaid Expenses and Other Current Assets***

Prepaid expenses and other current assets consisted of the following (in thousands):

| | May 31, 2019 | August 31, 2018 |
|---|---|---|
| Indemnification claims receivable* | $ 8,036 | $ 8,000 |
| Unbilled service receivables | 5,782 | 5,361 |
| Prepaid R&D expense | 3,830 | 2,590 |
| Prepaid ICMS taxes in Brazil** | 2,132 | 4,593 |
| Prepaid income taxes | 1,977 | 1,697 |
| Revolver debt fees | 952 | 952 |
| Supplier advances | 900 | — |
| Derivative assets*** | 585 | — |
| Prepayment for VAT and other transaction taxes | 534 | 2,557 |
| Other prepaid expenses and other current assets | 6,324 | 6,293 |
| Total prepaid expenses and other current assets | $ 31,052 | $ 32,043 |

* See Note 2.
** See Note 1(i).
*** See Note 4.

***Property and Equipment, Net***

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

| | May 31, 2019 | August 31, 2018 |
|---|---|---|
| Office furniture, software, computers and equipment | $ 22,708 | $ 21,267 |
| Manufacturing equipment | 117,269 | 97,192 |
| Leasehold improvements* | 26,173 | 24,011 |
| | 166,150 | 142,470 |
| Less accumulated depreciation and amortization | 99,015 | 85,855 |
| Net property and equipment | $ 67,135 | $ 56,615 |

* Includes Penang facility, which is situated on leased land.

Depreciation and amortization expense for property and equipment during the three and nine months ended May 31, 2019 was approximately $5.8 million and $17.1 million, respectively, and $4.8 million and $14.9 million, respectively for the corresponding periods of fiscal 2018.

***Other Noncurrent Assets***

Other noncurrent assets consisted of the following (in thousands):

| | May 31, 2019 | August 31, 2018 |
|---|---|---|
| Prepaid ICMS taxes in Brazil* | $ 6,529 | $ 7,483 |
| Deferred tax assets | 1,999 | 2,430 |
| Prepaid R&D expense | 1,649 | 2,218 |
| Tax receivable | 1,621 | 1,237 |
| Revolver debt fees | 669 | 1,383 |
| Restricted cash** | — | 5,859 |
| Other | 2,136 | 1,839 |
| Total other noncurrent assets | $ 14,603 | $ 22,449 |

* See Note 1(i).
** See Note 7.

*Accrued Liabilities*

Accrued liabilities consisted of the following (in thousands):

| | May 31, 2019 | August 31, 2018 |
|---|---|---|
| Accrued employee compensation | $ 9,663 | $ 19,501 |
| Deferred revenue | 9,294 | 8,292 |
| Indemnification claims liability | 4,521 | 4,521 |
| Customer deposits | 3,196 | 1,334 |
| VAT and other transaction taxes payable | 2,378 | 3,037 |
| Accrued interest payable | 1,872 | 2,457 |
| Accrued warranty reserve | 1,696 | 856 |
| Income taxes payable | 831 | 2,242 |
| Accrued credits payable to customers | — | 379 |
| Other accrued liabilities | 2,608 | 2,571 |
| Total accrued liabilities | $ 36,059 | $ 45,190 |

## (6) Income Taxes

Provision for income taxes for the three and nine month periods presented consisted of the following (in thousands):

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | May 31, 2019 | May 25, 2018 | May 31, 2019 | May 25, 2018 |
| Provision for income taxes | $ 550 | $ 5,505 | $ 12,813 | $ 15,256 |

Income tax expense includes a provision for federal, state and foreign taxes based on the annual estimated effective tax rate applicable to the Company and its subsidiaries, adjusted for certain discrete items which are fully recognized in the period they occur.

Provision for income taxes for the three and nine months ended May 31, 2019 decreased by $5.0 million and $2.4 million, respectively, as compared to the same periods in the prior year, primarily due to lower profits in certain non-U.S. jurisdictions subject to tax, partially offset by expiration of certain tax incentives.

As of May 31, 2019, the Company has a full valuation allowance for its net deferred tax assets associated with its U.S. operations. The amount of the deferred tax asset considered realizable could be adjusted if significant positive evidence increases.

Determining the consolidated provision for income tax expense, income tax liabilities, and deferred tax assets and liabilities involves judgment. The Company calculates and provides for income taxes in each of the tax jurisdictions in which it operates, which involves estimating current tax exposures, as well as making judgments regarding the recoverability of deferred tax assets in each jurisdiction. The estimates used could differ from actual results, which may have a significant impact on operating results in future periods.

## (7) Long-Term Debt

*Amended Credit Agreement*

On August 9, 2017, SMART Worldwide, SMART Modular Technologies (Global), Inc. (Global), and SMART Modular Technologies, Inc. (SMART Modular) entered into a Second Amended and Restated Credit Agreement (together with all related loan documents, as amended from time to time including as amended by the Incremental Amendment as defined below, the Amended Credit Agreement) with certain lenders which amended and restated that certain Amended and Restated Credit Agreement dated as of November 5, 2016 (the ARCA), which had amended and restated that certain Credit Agreement dated as of August 26, 2011 (the Original Credit Agreement). The Company's subsidiaries named as borrowers in the Amended Credit Agreement and certain other subsidiaries that entered into a guarantee with respect to the Amended Credit Agreement including Penguin, are collectively referred to as the Loan Parties and together with SMART Modular Technologies Sdn. Bhd. (SMART Malaysia), the Credit Group. The Amended Credit Agreement provides for a $165 million of initial term loans (the Initial Term Loan) with a maturity date of August 9, 2022, and $50 million of revolving loans with a maturity date of February 9, 2021 (the Initial Revolver Maturity Date) which revolving loan maturity date automatically extends to February 9, 2022 if the total leverage ratio of the Credit Group is less than 3.0:1.0 on the Initial Revolver Maturity Date. SMART Global Holding is not a party to the Amended Credit Agreement.

On June 8, 2018, SMART Worldwide, Global and SMART Modular entered into an Incremental Facility Agreement (the Incremental Amendment) which provided for incremental term loans under the Amended Credit Agreement in the aggregate amount of $60 million (the Incremental Term Loans) which Incremental Term Loans are on substantially identical terms as the Initial Term Loans. Pursuant to the Incremental Amendment, the borrowers agreed to pay the structuring advisor a $0.6 million fee pursuant to a separate agreement.

On October 2, 2018, SMART Worldwide, Global and SMART Modular entered into the Second Amendment to the Amended Credit Agreement (the Second Amendment) which did not become effective until October 25, 2018. As a result of the Second Amendment, the borrowers were granted a holiday from the obligation to make quarterly repayments of principal under the Initial Term Loans and the Incremental Term Loans at any time with respect to fiscal 2019. In addition, the borrowers were granted a holiday from the obligation to repay any loans as a result of excess cash flow that would otherwise be due with respect to any period of fiscal 2019.

The Amended Credit Agreement is jointly and severally guaranteed on a senior basis by certain subsidiaries of Global (excluding, among other subsidiaries, SMART Malaysia). In addition, the Amended Credit Agreement is secured by a pledge of the capital stock of, or equity interests in, most of the subsidiaries of SMART Worldwide (including, without limitation, SMART Malaysia and Penguin) and by substantially all of the assets of the subsidiaries of SMART Worldwide, excluding the assets of SMART Malaysia and certain other subsidiaries.

*Covenants*. The Amended Credit Agreement contains various representations and warranties and affirmative and negative covenants that are usual and customary for loans of this nature including, among other things, limitations on the Credit Group's ability to engage in certain transactions, incur debt, pay dividends, and make investments. The Amended Credit Agreement also requires that the Credit Group maintain a Secured Leverage Ratio not in excess of 3.5:1.0 as of the end of each fiscal quarter (commencing with the fiscal quarter ending November 24, 2017) and puts restrictions on the Credit Group's ability to retain cash proceeds from the sale of certain assets with net proceeds in excess of $2 million, subject to customary six-month reinvestment rights. The Incremental Amendment required the Credit Group to repay the Penguin Credit Facility, as defined below, and to pledge as collateral, all of the capital stock of and substantially all of the assets of Penguin within 60 days after the closing of the Penguin acquisition.

*Interest and Interest Rates*. Loans under the Amended Credit Agreement accrue interest at a rate per annum equal to an applicable margin plus, at the borrowers' option, either a LIBOR rate, or a base rate. The applicable margin for term loans with respect to LIBOR borrowings is 6.25% and with respect to base rate borrowings is 5.25%. The interest rate on the Initial Term Loans and Incremental Term Loans was 8.79% and 8.86% as of May 31, 2019, respectively.

The applicable margin for revolving loans adjusts every quarter based on the Secured Leverage Ratio for the most recent fiscal quarter with the applicable margin for revolving loans with respect to LIBOR borrowings ranging from 3.75% to 4.00% and the applicable margin for revolving loans with respect to base rate borrowings ranging from 2.75% to 3.00%.

Interest on base rate loans is payable on the last day of each calendar quarter. Interest on LIBOR-based loans is payable every one, two, three, six or twelve months after the date of each borrowing, depending on the particular interest rate period selected with respect to such borrowing.

*Principal Payments*. The Amended Credit Agreement requires quarterly repayments of principal under the Initial Term Loans equal to 2.5% of $165 million, or $4.1 million per fiscal quarter and, commencing on November 30, 2018, quarterly repayments of principal under the Incremental Term Loans equal to 2.5% of $60 million, or $1.5 million per fiscal quarter. As a result of the Second Amendment, the borrowers were granted a holiday in fiscal 2019 from the obligation to make quarterly repayments of principal under the Initial Term Loans and the Incremental Term Loans. During the three and nine months ended May 31, 2019, the borrowers made scheduled principal payments of $0 million, and $4.1 million and $12.4 million respectively, for the corresponding periods of fiscal 2018.

*Prepayments*. The borrowers have the right at any time to make optional prepayments of the principal amounts outstanding under the Amended Credit Agreement provided that prepayments of principal which are voluntary or are made in connection with certain transactions will be subject to prepayment premiums of 3%, 2%, and 1% during the first, second and third years, respectively, after the effective date of the Amended Credit Agreement.

The Amended Credit Agreement also requires certain mandatory prepayments of principal whereby the borrowers must prepay outstanding loans, subject to certain exceptions, which includes, among other things:

- 75% of excess cash flow on a semi-annual basis if the total leverage ratio is greater than 1.5:1.0; 50% of excess cash flow on a semi-annual basis if the total leverage ratio is greater than 1.0:1.0 but less than or equal to 1.5:1.0; and 25% of excess cash flow on an annual basis if the total leverage ratio is less than or equal to 1.0:1.0, which amounts will be reduced by any permitted voluntary prepayments of principal made in the applicable fiscal year;
- 100% of the net proceeds of certain asset sales or other dispositions of property of Global or any restricted subsidiary, subject to the limited rights to reinvest the proceeds within six months; and
- 100% of the net cash proceeds of incurrence of certain debt by Global or any of its restricted subsidiaries, other than proceeds from certain debt to be incurred under the Amended Credit Agreement.

As a result of the Second Amendment, the borrowers were granted a holiday from the obligation to repay any loans as a result of excess cash flow that would otherwise be due with respect to any period of fiscal 2019. No mandatory prepayments were required for the three months ended May 31, 2019 or for fiscal 2018.

On June 2, 2017, SMART Global Holdings contributed to Global $61.0 million from the proceeds of the initial public offering (IPO) closed in May 2017. Global in turn used the proceeds to pay down the original term loans under the Original Credit Agreement, as required under the ARCA, which resulted in a $6.7 million loss on early repayment of long-term debt. As of August 9, 2017, prior to the one year anniversary of the ARCA, the Credit Group entered into the Amended Credit Agreement with new term loans in the aggregate principal amount of $165 million with different lenders. The proceeds from the Amended Credit Agreement were used to fully repay and refinance the term loans under the ARCA in the principal amount of $151.0 million, which resulted in a write off of $15.2 million of original issue discount and debt issuance costs as an extinguishment loss.

Term loans under the Amended Credit Agreement were issued at a discount of 2.0% of the then outstanding principal amount of $165 million, for a discount of $3.3 million. The Company incurred $8.7 million in debt issuance costs upon entering into the Amended Credit Agreement, of which $5.3 million was attributable to the term loans and recorded as a direct reduction to the face amount of the term loans, and $3.4 million was allocated to the revolving line of credit and recorded as a separate asset on the balance sheet. Debt issuance costs and debt discount related to term loans are being amortized to interest expense based on the effective interest rate method over the life of the term loans. Those fees allocated to the revolving line of credit are being amortized to interest expense ratably over the life of the revolving line of credit.

As of May 31, 2019 and August 31, 2018, the outstanding principal balance of all term loans under the Amended Credit Agreement was $208.5 million and there were no outstanding revolving loans. The fair value of the term loans as of May 31, 2019 and August 31, 2018 was estimated to be approximately $207.5 million. Since the Company used broker quotes from inactive markets and there were no unobservable inputs, this was treated as a Level 2 financial instrument.

***Penguin Credit Agreement***

On June 8, 2018 in connection with the Penguin acquisition, the Company assumed the outstanding balances due under that certain credit agreement dated January 8, 2018 between Penguin and Wells Fargo Capital Finance, LLC (the Penguin Credit Facility) which had an outstanding balance of $32.3 million as of June 8, 2018. In addition, on June 8, 2018, SMART Global Holdings entered into a guarantee with Wells Fargo Capital Finance, LLC (WFCF) whereby SMART Global Holdings guaranteed the repayment and full performance of Penguin under the Penguin Credit Facility. As required under the Incremental Amendment, the Company paid off the outstanding balance and terminated the agreement under the Penguin Credit Facility in August 2018.

***BNDES Credit Agreements***

In December 2013, SMART Brazil, entered into a credit facility with the Brazilian Development Bank, or BNDES, referred to as the BNDES 2013 Credit Agreement. Under the BNDES 2013 Credit Agreement, a total of R$50.6 million (or $12.8 million) was made available to SMART Brazil for investments in infrastructure, research and development conducted in Brazil and acquisitions of equipment not otherwise available in the Brazilian domestic market. Prior to July 2018, SMART Brazil's obligations under the BNDES 2013 Credit Agreement were guaranteed by Banco Itaú BBA S.A., or Itaú Bank, which guarantee was in turn secured by a guarantee from SMART Brazil and SMART do Brazil in favor of Itaú Bank and a commitment by SMART Brazil to maintain minimum cash balances with Itaú Bank equal to 11.85% of the maximum aggregate balance of principal, interest and fees outstanding under the BNDES 2013 Credit Agreement. The committed amount was R$6.0 million (or $1.6 million), which is shown on the Company's condensed consolidated balance sheets as restricted cash in other noncurrent assets as of August 31, 2018.

Approximately half of the available debt under the BNDES 2013 Credit Agreement accrues interest at a fixed rate while the other half accrues interest at a floating rate. The facility under the BNDES 2013 Credit Agreement is a term loan fully amortizing in 48 equal monthly installments beginning on August 15, 2015 with the final principal payment being due on July 15, 2019.

As of May 31, 2019, SMART Brazil's outstanding debt under the BNDES 2013 Credit Agreement was R$3.2 million (or $0.8 million), of which R$1.6 million (or $0.4 million) accrues interest at the fixed rate of 3.5% and R$1.7 million (or $0.4 million) of the debt accrues interest at the floating rate of 0.5% above the TJLP rate published by the Central Bank of Brazil, or BZTJLP (5.0%), combined corresponding to an overall effective interest rate of 5.5% per annum. As of August 31, 2018, SMART Brazil's outstanding debt under the BNDES 2013 Credit Agreement was R$12.9 million (or $3.4 million), of which R$6.3 million (or $1.7 million) accrues interest at the fixed rate of 3.5% and R$6.6 million (or $1.7 million) of the debt accrues interest at the floating rate of BZTJLP (5.0%), combined corresponding to an overall effective interest rate of 5.5% per annum.

In December 2014, SMART Brazil, entered into a second credit facility with BNDES, referred to as the BNDES 2014 Credit Agreement. The BNDES 2013 Credit Agreement and the BNDES 2014 Credit Agreement are collectively referred to as the BNDES Credit Agreements. Under the BNDES 2014 Credit Agreement, a total of R$52.8 million (or $13.4 million) was made available to SMART Brazil for research and development conducted in Brazil related to integrated circuit (IC) packaging and for acquisitions of equipment not otherwise available in the Brazilian domestic market.

Prior to July 2018, SMART Brazil's obligations under the BNDES 2014 Credit Agreement were also guaranteed by Itaú Bank, which guarantee was in turn secured by a guarantee from SMART Brazil and SMART do Brazil in favor of Itaú Bank and a commitment by SMART Brazil to maintain minimum cash balances with Itaú Bank equal to 30.31% of the maximum aggregate balance of principal, interest and fees outstanding under the BNDES 2014 Credit Agreement, or approximately R$16.0 million (or $4.3 million) of required cash balances, which is shown on the Company's condensed consolidated balance sheets as restricted cash in other noncurrent assets as of August 31, 2018.

In July 2018, SMART Brazil entered into guarantee arrangements with Banco Votorantim S.A. which bank in turn replaced the guarantees of the BNDES Credit Agreements previously issued by Itaú Bank. As a result, the guarantees with Itaú Bank were cancelled and Itaú Bank returned R$22.0 million (or $5.9 million) of committed balances to SMART Brazil in the first quarter of fiscal 2019. As such, the Company no longer has any restricted cash on its condensed consolidated balance sheets as of May 31, 2019.

The available debt under the BNDES 2014 Credit Agreement accrues interest at a fixed rate of 4% per annum. The BNDES 2014 Credit Agreement is a term loan fully amortizing in 48 equal monthly installments beginning on August 15, 2016 with the final principal payment being due on July 15, 2020.

As of May 31, 2019 and August 31, 2018, SMART Brazil's outstanding debt under the BNDES 2014 Credit Agreement was R$16.5 million (or $4.2 million) and R$26.4 million (or $7.0 million), respectively.

While the BNDES Credit Agreements do not include any financial covenants, they contain affirmative and negative covenants customary for loans of this nature, including, among other things, an obligation to comply with all laws and regulations; a right for BNDES to terminate the loan in the event of a change of effective control; and a prohibition against the disposition or encumbrance, without BNDES consent, of intellectual property developed with the funds from the loans. The BNDES 2013 Credit Agreement includes an obligation to draw down the entire loan within specified periods of time or pay unused commitment fees of 0.1%. The BNDES 2014 Credit Agreement required a loan fee of 0.3% of the total face amount of the loan facility.

The fair value of amounts outstanding under the BNDES Credit Agreements as of May 31, 2019 and August 31, 2018 were estimated to be approximately $4.7 million and $9.4 million, respectively. Since the Company used broker quotes from inactive markets and there were no unobservable inputs, this was treated as a Level 2 financial instrument.

The Amended Credit Agreement and the BNDES Credit Agreements are classified as follows in the accompanying consolidating balance sheets (in thousands):

| | May 31, 2019 | August 31, 2018 |
|---|---|---|
| Term loans | $ 208,500 | $ 208,500 |
| BNDES 2013 principal balance | 814 | 3,422 |
| BNDES 2014 principal balance | 4,182 | 7,030 |
| Unamortized debt discount | (2,050) | (2,520) |
| Unamortized debt issuance costs | (3,931) | (4,833) |
| Net amount | 207,515 | 211,599 |
| Current portion of long-term debt | (19,087) | (27,409) |
| Long-term debt | $ 188,428 | $ 184,190 |

The future minimum principal payments under the Amended Credit Agreement and the BNDES Credit Agreements as of May 31, 2019 are (in thousands):

| | Amended Credit Agreement | BNDES | TOTAL |
|---|---|---|---|
| Fiscal year ending August: | | | |
| Remainder of fiscal 2019 | $ — | $ 1,651 | $ 1,651 |
| 2020 | 22,500 | 3,345 | 25,845 |
| 2021 | 22,500 | — | 22,500 |
| 2022 | 163,500 | — | 163,500 |
| Total | $ 208,500 | $ 4,996 | $ 213,496 |

### (8) Financial Instruments

***Fair Value of Financial Instruments***

The fair value of the Company's cash, cash equivalents, accounts receivable and accounts payable approximates the carrying amount due to the relatively short maturity of these items. Cash and cash equivalents consist of funds held in general checking and savings accounts, money market accounts, and securities with maturities of less than 90 days at the time of purchase. The Company does not have investments in variable rate demand notes or auction rate securities.

The FASB guidance establishes a fair value hierarchy that prioritizes the inputs to valuation techniques used to measure fair value. The hierarchy gives the highest priority to unadjusted quoted prices in active markets to identical assets or liabilities (Level 1 measurements) and the lowest priority to unobservable inputs (Level 3 measurements). The three levels of the fair value hierarchy are described below:

- Level 1. Valuations based on quoted prices in active markets for identical assets or liabilities that an entity has the ability to access. The Company's Level 1 assets include funds held in general checking accounts, savings accounts and money market funds that are classified as cash equivalents and restricted cash which is classified under long-term assets.
- Level 2. Valuations based on quoted prices for similar assets or liabilities, quoted prices for identical assets or liabilities in markets that are not active, or other inputs that are observable or can be corroborated by observable data for substantially the full term of the assets and liabilities. The Company's Level 2 assets and liabilities include the term loans under the Amended Credit Agreement and the BNDES Credit Agreements that are classified as long-term debt, and derivative financial instruments.
- Level 3. Valuations based on inputs that are supported by little or no market activity and that are significant to the fair value of the assets or liabilities. The Company's Level 3 liability includes the contingent consideration related to Penguin acquisition (see Note 2), which had a fair value of $0 as of August 31, 2018. The Company did not have any financial instruments measured under Level 3 as of May 31, 2019.

Assets and liabilities measured at fair value on a recurring basis include the following (in millions):

| | Quoted Prices in Active Markets for Identical Assets or Liabilities (Level 1) | Observable/ Unobservable Inputs Corroborated by Market Data (Level 2) | Significant Unobservable Inputs (Level 3) | Total |
|---|---|---|---|---|
| **Balances as of May 31, 2019:** | | | | |
| Assets | | | | |
| Cash and cash equivalents | $ 126.1 | $ — | $ — | $ 126.1 |
| Derivative financial instruments(2) | — | 0.6 | — | 0.6 |
| Total assets measured at fair value | $ 126.1 | $ 0.6 | $ — | $ 126.7 |
| Liabilities | | | | |
| Term loans(1) | $ — | $ 207.5 | $ — | $ 207.5 |
| BNDES Credit Agreements(1) | — | 4.7 | — | 4.7 |
| Total liabilities measured at fair value | $ — | $ 212.2 | $ — | $ 212.2 |
| **Balances as of August 31, 2018:** | | | | |
| Assets | | | | |
| Cash and cash equivalents | $ 31.4 | $ — | $ — | $ 31.4 |
| Restricted cash(3) | 5.9 | — | — | 5.9 |
| Total assets measured at fair value | $ 37.3 | $ — | $ — | $ 37.3 |
| Liabilities | | | | |
| Term loans | $ — | $ 207.5 | $ — | $ 207.5 |
| BNDES Credit Agreements | — | 9.4 | — | 9.4 |
| Acquisition-related contingent consideration | — | — | — | — |
| Total liabilities measured at fair value(1) | $ — | $ 216.9 | $ — | $ 216.9 |

(1) Included under long-term debt on the Company's condensed consolidated balance sheets.
(2) Included in prepaid expenses and other current assets on the Company's condensed consolidated balance sheets – see Note 5.
(3) Included in other noncurrent assets on the Company's condensed consolidated balance sheets – see Note 5.

## (9) Share-Based Compensation and Employee Benefit Plans

### *(a) Share-Based Compensation*

**Equity Awards**

On August 26, 2011, the board of directors adopted the Saleen Holdings, Inc. 2011 Stock Incentive Plan which was amended and restated as of May 18, 2017 to be known as the SMART Global Holdings, Inc. Amended and Restated 2017 Share Incentive Plan. On January 29, 2019, the shareholders approved an amendment to the SMART Global Holdings, Inc. Amended and Restated 2017 Share Incentive Plan (as amended, the SGH Plan) which amendment increased the reserve under the SGH Plan by 1,500,000 shares effective as of February 1, 2019. The SGH Plan provides for grants of equity awards to employees, directors and consultants of SMART Global Holdings and its subsidiaries. Options granted under the SGH Plan provide the option to purchase SMART Global Holdings' ordinary shares at the fair value of such shares on the grant date. The options and restricted share units (RSUs) generally vest over a four-year period beginning on the grant date and generally have a ten-year term. Options granted after August 26, 2011 and before September 23, 2014 have an eight year term. As of May 31, 2019, there were 4,956,243 ordinary shares reserved for issuance under the SGH Plan, of which 1,555,969 ordinary shares were available for grant. As of August 31, 2018, there were 3,385,550 ordinary shares reserved for issuance under the SGH Plan, of which 251,965 ordinary shares were available for grant.

**Summary of Assumptions and Activity**

The fair value of each option grant is estimated on the date of grant using the Black-Scholes option pricing model that uses the assumptions noted in the following table.

The expected volatility is based on the historical volatilities of the common stock of comparable publicly traded companies. The expected term of options granted represents the weighted average period of time that options granted are expected to be outstanding giving consideration to vesting schedules and the historical exercise patterns. The risk-free interest rate for the expected term of the option is based on the average U.S. Treasury yield curve at the end of the quarter in which the option was granted.

The following assumptions were used to value the Company's stock options:

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | May 31, 2019 | May 25, 2018 | May 31, 2019 | May 25, 2018 |
| Stock options: | | | | |
| Expected term (years) | — | 6.25 | 6.25 | 6.25 |
| Expected volatility | — | 41.77% | 41.68% - 45.76% | 41.77% - 46.27% |
| Risk-free interest rate | — | 2.82% | 2.62% - 2.88% | 2.15% - 2.82% |
| Expected dividends | — | — | — | — |

**SGH Plan—Options**

A summary of option activity for the SGH Plan is presented below (dollars and shares in thousands, except per share data):

| | Shares | Weighted average per share exercise price | Weighted average remaining contractual term (years) | Aggregate intrinsic value |
|---|---|---|---|---|
| Options outstanding at August 31, 2018 | 2,414 | $ 28.75 | 7.88 | $ 20,459 |
| Options granted | 321 | 21.90 | | |
| Options exercised | (325) | 11.60 | | |
| Options cancelled | (47) | 32.54 | | |
| Options outstanding at May 31, 2019 | 2,363 | $ 30.11 | 7.54 | $ 2,266 |
| Options exercisable at May 31, 2019 | 691 | $ 22.27 | 6.75 | $ 1,797 |
| Options vested and expected to vest at May 31, 2019 | 2,363 | $ 30.11 | 7.54 | $ 2,266 |

In March 2018, the Company granted two performance-based stock options that contained a stock market index as a benchmark for performance (Market-Based Options). The share-based compensation expense for these options is recognized over the requisite service period by tranche. The exercisability of Market-Based Options will depend upon the 30-trading day rolling average closing price of Company's ordinary shares. If the target price is not achieved by the end of 4th or 7th anniversary of the respective grant date, the options will expire. The fair value of Market-Based Options is determined by using a Monte Carlo valuation model, using the following assumptions:

| | Three Months Ended May 25, 2018 |
|---|---|
| Stock options: | |
| Expected term (years) | 1.10 - 4.00 |
| Expected volatility | 46.29% |
| Risk-free interest rate | 2.75% |
| Expected dividends | — |

The Black-Scholes weighted average fair value of options granted under the SGH Plan during the three and nine months ended May 31, 2019 was $0 and $9.83 per share, respectively, and $18.31 and $18.22 per share, respectively for the corresponding periods of fiscal 2018. The total intrinsic value of employee stock options exercised in the three and nine months ended May 31, 2019 was $0.3 million and $6.1 million, respectively, and $7.4 million and $16.6 million, respectively for the corresponding periods of fiscal 2018. As of May 31, 2019, there was approximately $19.6 million of unrecognized compensation costs related to stock options under the SGH Plan, which will be recognized over a weighted average period of 2.57 years.

**SGH Plan—Restricted Share Awards (RSAs), Restricted Share Units (RSUs) and Performance Share Units (PSUs)**

A summary of the changes in RSAs, RSUs and PSUs outstanding is presented below (dollars and shares in thousands, except per share data):

| | Shares | Weighted average grant date fair value per share | Aggregate intrinsic value |
|---|---|---|---|
| Awards outstanding at August 31, 2018 | 720 | $ 27.50 | $ 23,753 |
| Awards granted | 535 | 22.97 | |
| Awards vested and paid out | (175) | 21.24 | |
| Awards forfeited and cancelled | (43) | 31.42 | |
| Awards outstanding at May 31, 2019 | 1,037 | $ 26.06 | $ 17,666 |

The share-based compensation expense related to RSAs, RSUs and PSUs during the three and nine months ended May 31, 2019 was approximately $1.8 million and $4.9 million, respectively, and $0.7 million and $1.4 million, respectively, for the corresponding periods of fiscal 2018. The total fair value of shares vested during the three and nine months ended May 31, 2019 was approximately $1.2 million and $4.5 million, respectively, and $0 and $2.2 million for the corresponding periods of fiscal 2018.

In May 2019, the Company granted a performance-based restricted share unit award (PSU) which has both service and performance conditions. As of May 31, 2019, while the Company deemed it probable that the service condition would be met, the likelihood of meeting either of the two performance conditions for this award is not probable. As such, there was no share-based compensation expense recognized for this award during the three and nine months ended May 31, 2019.

**Employee Share Purchase Plan**

In January 2018, the Company's shareholders approved the SGH 2018 Employee Share Purchase Plan (the Purchase Plan) under which an aggregate of 650,000 ordinary shares were available for purchase to eligible employees as of September 2018. The Purchase Plan generally permits employees to purchase ordinary shares at 85% of the lower of the fair market value of the ordinary shares at the beginning or at the end of each purchase period, which is generally six months. Rights to purchase ordinary shares are granted during the first and third quarter of each fiscal year. The Purchase Plan terminates in January 2028. As of May 31, 2019, 109,910 ordinary shares have been purchased under the Purchase Plan and 540,090 ordinary shares are reserved for future purchases by eligible employees.

**Equity Rights and Restrictions**

The holders of ordinary shares of SMART Global Holdings are entitled to such dividends and other distributions as may be declared by the board of directors from time-to-time, out of the funds of SMART Global Holdings lawfully available therefor.

Substantially all SMART Global Holdings shares owned by employees, by certain former lenders of the Company, and all shares underlying the SMART Global Holdings options and RSUs are subject to either the Employee Investors Shareholders Agreement dated August 26, 2011 (the Employee Investors Shareholders Agreement) or the Amended and Restated Investors Shareholders Agreement dated as of November 5, 2016 (as amended by Amendment No. 5, Amendment No. 4, Amendment No. 3, Amendment No. 2 and subsequent amendments, the Amended and Restated Investors Shareholders Agreement; the Employee Investors Shareholders Agreement and the Amended and Restated Investors Shareholders Agreement are collectively referred to as the Shareholders Agreements). Under the terms of the Shareholders Agreements, such shares are subject to certain restrictions on sale and could become subject to lock-up restrictions in the event of any future registered public offerings by the Company.

### *(b) Savings and Retirement Program*

The Company offers a 401(k) Plan to U.S. employees, which provides for tax-deferred salary deductions for eligible U.S. employees. Employees may contribute up to 60% of their annual eligible compensation to this plan, limited by an annual maximum amount determined by the U.S. Internal Revenue Service. The Company may also make discretionary matching contributions, which vest immediately, as periodically determined by management. The matching contributions made by the Company during the three and nine months ended May 31, 2019 were approximately \$0.6 million and \$1.4 million, respectively, and \$0.4 million and \$0.9 million, respectively for the corresponding periods of fiscal 2018.

## (10) Commitments and Contingencies

### *(a) Commitments*

Minimum rent payments under operating leases are recognized on a straight-line basis over the term of the lease including any periods of free rent. Rent expense for operating leases during the three and nine months ended May 31, 2019 was \$1.2 million and \$3.5 million, respectively, and \$0.8 million and \$2.2 million, respectively, for the corresponding periods of fiscal 2018.

Future minimum lease payments under all leases as of May 31, 2019 are as follows (in thousands):

| | Amount |
|---|---|
| Fiscal year ending August: | |
| Remainder of fiscal 2019 | $ 895 |
| 2020 | 4,000 |
| 2021 | 3,501 |
| 2022 | 2,886 |
| 2023 | 2,871 |
| Thereafter | 25,923 |
| Total | $ 40,076 |

### *(b) Product Warranty and Indemnities*

Product warranty reserves are established in the same period that revenue from the sale of the related products is recognized, or in the period that a specific issue arises as to the functionality of a Company's product. The amounts of the reserves are based on established terms and the Company's best estimate of the amounts necessary to settle future and existing claims on products sold as of the balance sheet date.

The following table reconciles the changes in the Company's accrued warranty (in thousands):

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | May 31, 2019 | May 25, 2018 | May 31, 2019 | May 25, 2018 |
| Beginning accrued warranty reserve | $ 1,194 | $ 200 | $ 856 | $ 275 |
| Warranty claims | (224) | (193) | (930) | (458) |
| Provision for product warranties | 726 | 270 | 1,770 | 460 |
| Ending accrued warranty reserve | $ 1,696 | $ 277 | $ 1,696 | $ 277 |

Product warranty reserves are recorded in accrued liabilities in the accompanying condensed consolidated balance sheets.

In addition to potential liability for warranties related to defective products, the Company currently has in effect a number of agreements in which it has agreed to defend, indemnify and hold harmless its customers and suppliers from damages and costs, which may arise from product defects as well as from any alleged infringement by its products on third-party patents, trademarks or other proprietary rights. The Company believes its internal development processes and other policies and practices limit its exposure related to such indemnities. Maximum potential future payments cannot be estimated because many of these agreements do not have a maximum stated liability. However, to date, the Company has not had to reimburse any of its customers or suppliers for any losses related to these indemnities. The Company has not recorded any liability in its financial statements for such indemnities.

***(c) Legal Matters***

From time to time, the Company is involved in legal matters that arise in the normal course of business. Litigation in general and intellectual property, employment and shareholder litigation in particular, can be expensive and disruptive to normal business operations. Moreover, the results of complex legal proceedings are difficult to predict. The Company believes that it has defenses to the cases pending, including those set forth below. Except as noted below, the Company is not currently able to estimate, with reasonable certainty, the possible loss, or range of loss, if any, from such legal matters, and accordingly, no provision for any potential loss, which may result from the resolution of these matters, has been recorded in the accompanying condensed consolidated financial statements.

**Indemnification Claims by SanDisk**

In August 2013, the Company completed the sale (the Sale) of substantially all of the business unit which was focused on solid state drives, to SanDisk Corporation (now a part of Western Digital). In connection with the Sale the sale agreement (Sale Agreement) contained certain indemnification obligations, including, among others, for losses arising from breaches of representations and warranties relating to the Sale. These indemnification obligations are subject to a number of limitations, including certain deductibles and caps and limited time periods for making indemnification claims. At the closing of the Sale, $30.5 million of the purchase price was placed into a third party escrow to secure certain of the Company's indemnification obligations. The escrow was due to terminate on August 22, 2014 in the event that SanDisk did not timely submit a claim for indemnification. On August 21, 2014, SanDisk made a claim against the Company under the indemnification provisions of the Sale Agreement in connection with a lawsuit filed by Netlist, Inc. (Netlist) against SanDisk alleging that certain products sold in the Sale infringe various Netlist patents, which SanDisk in turn alleges would, if true, constitute a breach of representations and warranties under the Sale Agreement. Under the Sale Agreement, the Company's indemnification obligation in respect of intellectual property matters, such as those claimed by SanDisk, is subject to a deductible of approximately $1.8 million and a cap of $60.9 million. As required in the Sale Agreement, the SanDisk claim purported to include a preliminary good faith estimate of SanDisk's alleged indemnifiable losses, which estimate was greater than the Sale Agreement cap for intellectual property matters. The Company believes that the allegations giving rise to the indemnification claim are without merit and the Company is disputing SanDisk's claim for indemnification. In addition, there may be other grounds for the Company to dispute the indemnification claim and/or the amounts of any indemnifiable losses of SanDisk. On December 4, 2014, SanDisk and the Company agreed to release from escrow the funds held in connection with this indemnification claim, however, the agreement to release the funds from escrow does not relieve the Company of its indemnification obligations to SanDisk, and SanDisk has not amended or reduced the amount of its indemnification claim.

**Netlist**

On September 10, 2012, SMART Modular filed a complaint in the Eastern District of California (the EDCA) against Netlist alleging infringement of certain claims of SMART Modular's U.S. Patent No. 8,250,295 (the '295 patent) and seeking, among other things, a preliminary injunction. Netlist filed certain counterclaims alleging, among other things, attempted monopolization, collusion, unfair competition, fraud on the U.S. Patent and Trademark Office (the USPTO) and sham litigation, and asserting that the '295 patent is invalid.

In July 2013, Netlist filed a lawsuit in the Central District of California against SMART Modular alleging claims very similar to Netlist's counterclaims set forth in the EDCA case. Netlist later amended its complaint to add additional parties, including SMART Worldwide. Netlist has sought compensatory damages for the harm it claims to have suffered, as well as an award of treble damages and attorneys' fees. The claims against SMART Modular and SMART Worldwide were transferred to the EDCA.

In January 2019 the parties entered into stipulated settlements to dismiss with prejudice, all claims and counterclaims in both actions with no amounts for damages being paid by either party and with each party to bear their own costs.

### (d) *Contingencies*

**Import Duty Tax assessment in Brazil**

On February 23, 2012, SMART Brazil was served with a notice of a tax assessment for approximately R$117 million (or $29.7 million) (the First Assessment). The First Assessment was from the federal tax authorities of Brazil and related to four taxes in connection with importation processes. The tax authorities claimed that SMART Brazil categorized its imports of unmounted integrated circuits in the format of wafers under an incorrect product classification code, which carries an import duty of 0%. The authorities alleged that a different classification code should have been used that would require an 8% import duty and the authorities were seeking to recover these duties, as well as other related taxes, for the five calendar years of 2007 through and including 2011. Subsequent to the initial assessment, SMART Brazil received a second notice of an additional administrative penalty of approximately R$6.0 million (or $1.5 million) directly related to the same issue and which has been imposed exclusively for the alleged usage of an inappropriate import tax code (the Second Assessment).

In March 2012, SMART Brazil filed defenses to the First Assessment and the Second Assessment. On May 2, 2013, the first level administrative tax court issued a ruling in favor of the tax assessor and against SMART Brazil on the First Assessment. On May 31, 2013, SMART Brazil filed an appeal to the second level tax court known as CARF. The appeal was heard on November 26, 2013 and the Company received a unanimous favorable ruling rejecting the position of the tax authorities. Subsequently, the tax authorities filed a request for clarification and on September 17, 2014, the Company received a unanimous ruling rejecting the request from the tax authorities for clarification. On November 7, 2014, the tax authorities notified CARF that they would not be appealing the CARF decision, and the First Assessment has been extinguished. On February 6, 2018, the first level administrative court unanimously ruled in favor of SMART Brazil with respect to the Second Assessment. Due to the size of the Second Assessment, Brazil law required that the tax authorities appeal the decision to CARF. The appeal on the Second Assessment was heard on December 11, 2018 and the Company received a unanimous favorable ruling rejecting the position of the tax authorities. The tax authorities did not file any request for clarification or appeal and, as a result, the Second Assessment was extinguished in May 2019.

On December 12, 2013, SMART Brazil received another notice of assessment in the amount of R$3.6 million (or $0.9 million) with respect to the same import-related tax issues and penalties discussed above for 2012 and 2013 (the Third Assessment). The Third Assessment does not seek import duties and related taxes on Dynamic Random Access Memory (DRAM) products and only seeks import duties and related taxes on Flash unmounted components with respect to the months of January 2012 to June 2012. This is because SMART Brazil's imports of DRAM unmounted components were subject to 0%, and, after June 2012, SMART Brazil's imports of Flash unmounted components also became subject to 0% import duties and related taxes, both as a result of PADIS. Even with this 0%, if SMART Brazil is found to have used the incorrect product classification code, SMART Brazil will be subject to an administrative penalty equal to 1% of the value of the imports. SMART Brazil has filed defenses to the Third Assessment. The Company believes that SMART Brazil used the correct product code on its imports and that the Third Assessment is incorrect. SMART Brazil intends to vigorously fight this matter. Although SMART Brazil did not receive the Third Assessment until December 12, 2013, the Third Assessment was issued before the CARF decisions in favor of SMART Brazil on the First Assessment and the Second Assessment were published.

The amount claimed by the tax authorities on the Third Assessment is subject to increases for interest and other charges, which resulted in a balance of approximately R$5.5 million (or $1.4 million) as of May 31, 2019. The amount claimed by the tax authorities on the Second Assessment and the Third Assessment were subject to increases for interest and other charges, which resulted in a combined assessment balance of approximately R$15.1 million (or $4.0 million) as August 31, 2018.

As a result of the CARF decisions in favor of SMART Brazil on the First Assessment and the Second Assessment, the Company believes that the probability of any material charges as a result of the Third Assessment is remote and the Company does not expect the resolution of this disputed assessment to have a material impact on its consolidated financial position, results of operations or cash flows. While the Company believes that the Third Assessment is incorrect, there can be no assurance that SMART Brazil will prevail in the disputes.

## (11) Segment and Geographic Information

The Company operates in one reportable segment: the design, manufacture and sale of specialty memory solutions and services to the electronics industry. The Company's chief operating decision-maker, the President and CEO, evaluates financial performance on a company-wide basis.

A summary of the Company's net sales by geographic area, based on the ship-to location of the customer, and property and equipment by geographic area is as follows (in thousands):

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | May 31, 2019 | May 25, 2018 | May 31, 2019 | May 25, 2018 |
| **Geographic Net Sales:** | | | | |
| U.S. | $ 79,483 | $ 32,448 | $ 250,140 | $ 114,304 |
| Brazil | 101,035 | 232,845 | 447,549 | 599,520 |
| Asia | 37,136 | 56,722 | 176,208 | 160,539 |
| Europe | 9,001 | 6,638 | 32,524 | 20,135 |
| Other Americas | 9,002 | 6,824 | 27,178 | 20,353 |
| Total | $ 235,657 | $ 335,477 | $ 933,599 | $ 914,851 |

| | May 31, 2019 | August 31, 2018 |
|---|---|---|
| **Property and Equipment, Net:** | | |
| U.S. | $ 8,275 | $ 7,805 |
| Brazil | 51,317 | 41,611 |
| Malaysia | 5,463 | 4,749 |
| Other | 2,080 | 2,450 |
| Total | $ 67,135 | $ 56,615 |

## (12) Major Customers

A majority of the Company's net sales are attributable to customers operating in the information technology industry. Net sales to significant end user customers, including sales to their manufacturing subcontractors, defined as net sales in excess of 10% of total net sales, are as follows (dollars in thousands):

| | Three Months Ended | | | | Nine Months Ended | | | |
|---|---|---|---|---|---|---|---|---|
| | May 31, 2019 | | May 25, 2018 | | May 31, 2019 | | May 25, 2018 | |
| | Amount | Percentage of net sales | Amount | Percentage of net sales | Amount | Percentage of net sales | Amount | Percentage of net sales |
| Customer A | $ 47,889 | 20% | $ 140,628 | 42% | $ 186,315 | 20% | $ 331,854 | 36% |
| Customer B | 26,154 | 11% | 37,947 | 11% | — | 0% | 97,106 | 11% |
| Customer C | 23,917 | 10% | 39,277 | 12% | 112,149 | 12% | 106,282 | 12% |
| Customer D | — | 0% | — | 0% | 137,414 | 15% | 97,845 | 11% |
| | $ 97,960 | 41% | $ 217,852 | 65% | $ 435,878 | 47% | $ 633,087 | 70% |

As of May 31, 2019, four direct customers that represented less than 10% of net sales, Customers E, F G and H, accounted for approximately 18%, 15%, 13% and 12% of accounts receivable, respectively. As of August 31, 2018, four direct customers that represented less than 10% of net sales, Customers E, F, G and H, accounted for approximately 15%, 11%, 17% and 19% of accounts receivable, respectively.

## (13) Earnings Per Share

Basic earnings per share is calculated by dividing net income (loss) by the weighted average of ordinary shares outstanding during the period. Diluted earnings per share is calculated by dividing the net income (loss) by the weighted average of ordinary shares and dilutive potential ordinary shares outstanding during the period. Dilutive potential ordinary shares consist of dilutive shares issuable upon the exercise of outstanding stock options and vesting of RSUs computed using the treasury stock method. The dilutive weighted shares are excluded from the computation of diluted net loss per share when a net loss is recorded for the period as their effect would be anti-dilutive.

The following table sets forth for all periods presented the computation of basic and diluted earnings per share, including the reconciliation of the numerator and denominator used in the calculation of basic and diluted earnings per share (dollars and shares in thousands, except per share data):

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | May 31, 2019 | May 25, 2018 | May 31, 2019 | May 25, 2018 |
| **Numerator:** | | | | |
| Net income | $ 1,945 | $ 31,946 | $ 45,707 | $ 89,745 |
| **Denominator:** | | | | |
| Weighted average shares outstanding: | | | | |
| Basic | 23,005 | 22,206 | 22,824 | 21,932 |
| Diluted | 23,330 | 23,306 | 23,374 | 23,020 |
| Earnings per share: | | | | |
| Basic | $ 0.08 | $ 1.44 | $ 2.00 | $ 4.09 |
| Diluted | $ 0.08 | $ 1.37 | $ 1.96 | $ 3.90 |
| Anti-dilutive weighted shares excluded from the computation of diluted earnings per share | 1,775 | 1,008 | 1,510 | 349 |

**(14) Other Income (Expense), Net**

The following table provides the detail of other income (expense), net as follows (in thousands):

| | Three Months Ended | | Nine Months Ended | |
|---|---|---|---|---|
| | May 31, 2019 | May 25, 2018 | May 31, 2019 | May 25, 2018 |
| Foreign currency gains (losses) | $ (144) | $ (6,932) | $ (3,481) | $ (7,259) |
| Other | 241 | (213) | 501 | (53) |
| Total other income (expense), net | $ 97 | $ (7,145) | $ (2,980) | $ (7,312) |

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

The following discussion and analysis of our financial condition and results of operations should be read in conjunction with the condensed consolidated financial statements and the notes to those statements included elsewhere in this Quarterly Report on Form 10-Q, and with the condensed consolidated financial statements and management’s discussion and analysis of our financial condition and results of operations in our Annual Report on Form 10-K for our fiscal year ended August 31, 2018 (our “Annual Report”). This discussion contains forward looking statements that involve risks and uncertainties. Our actual results could differ materially from those contained in these forward-looking statements due to a number of factors, including those discussed under the caption “Risk Factors” in our Annual Report and elsewhere in this report. See also “Cautionary Note Regarding Forward-Looking Statements” at the beginning of this report.

### Overview

SMART Global Holdings, Inc. (“SMART”) is a global leader in specialty memory solutions, serving the electronics industry for over 25 years. We have a leading market position worldwide, as measured by revenue, in specialty memory where we work closely with OEM customers to develop solutions, which incorporate customer-specific requirements. Our products are designed-in by OEMs in the networking, enterprise storage, telecom, industrial and other such vertical markets. In addition, as part of our global business, we have established a leading market position, as measured by market share, in Brazil as the largest in-country manufacturer of memory for desktops, notebooks and servers, as well as mobile memory for smartphones. As a result of our acquisition of Penguin Computing, Inc. (“Penguin”) in June 2018 and the creation of a new business unit, SMART Specialty Compute & Storage Solutions (“SCSS”), we have expanded our serviceable markets into areas requiring specialized computing platforms in artificial intelligence and machine learning, advanced modeling and high performance computing serving a broad base of enterprise and government customers. We believe our customers rely on us as a strategic supplier due to our application-specific products, quality and technical support, our global footprint and, in Brazil, our ability to provide locally manufactured products. We also provide customized, integrated supply chain services to certain OEM customers to assist them in the management and execution of their procurement processes.

**Results of Operations**

The following is a summary of our results of operations for the three and nine months ended May 31, 2019 and May 25, 2018:

| | Three Months Ended | | | | Nine Months Ended | | | |
|---|---|---|---|---|---|---|---|---|
| | May 31, 2019 | % of sales* | May 25, 2018** | % of sales* | May 31, 2019 | % of sales* | May 25, 2018** | % of sales* |
| | (in thousands, other than percentages and per share data) | | | | | | | |
| **Consolidated Income Statements:** | | | | | | | | |
| Net sales | $ 235,657 | 100% | $ 335,477 | 100% | $ 933,599 | 100% | $ 914,851 | 100% |
| Cost of sales (1)(2) | 192,622 | 82% | 257,423 | 77% | 748,364 | 80% | 705,944 | 77% |
| Gross profit | 43,035 | 18% | 78,054 | 23% | 185,235 | 20% | 208,907 | 23% |
| Operating expenses: | | | | | | | | |
| Research and development (1) (2) | 11,330 | 5% | 9,763 | 3% | 34,384 | 4% | 28,165 | 3% |
| Selling, general and administrative (1) (2) | 24,306 | 10% | 19,597 | 6% | 73,202 | 8% | 55,502 | 6% |
| Total operating expenses | 35,636 | 15% | 29,360 | 9% | 107,586 | 12% | 83,667 | 9% |
| Income from operations | 7,399 | 3% | 48,694 | 15% | 77,649 | 8% | 125,240 | 14% |
| Other income (expense): | | | | | | | | |
| Interest expense, net | (5,001) | (2%) | (4,098) | (1%) | (16,149) | (2%) | (12,927) | (1%) |
| Other income (expense), net | 97 | 0% | (7,145) | (2%) | (2,980) | 0% | (7,312) | (1%) |
| Total other expense | (4,904) | (2%) | (11,243) | (3%) | (19,129) | (2%) | (20,239) | (2%) |
| Income before income taxes | 2,495 | 1% | 37,451 | 11% | 58,520 | 6% | 105,001 | 11% |
| Provision for income taxes | 550 | 0% | 5,505 | 2% | 12,813 | 1% | 15,256 | 2% |
| Net income | $ 1,945 | 1% | $ 31,946 | 10% | $ 45,707 | 5% | $ 89,745 | 10% |
| Earnings per share: | | | | | | | | |
| Basic | $ 0.08 | | $ 1.44 | | $ 2.00 | | $ 4.09 | |
| Diluted | $ 0.08 | | $ 1.37 | | $ 1.96 | | $ 3.90 | |
| Shares used in computing earnings per share: | | | | | | | | |
| Basic | 23,005 | | 22,206 | | 22,824 | | 21,932 | |
| Diluted | 23,330 | | 23,306 | | 23,374 | | 23,020 | |

* Summations may not compute precisely due to rounding.

| | | | | |
|---|---|---|---|---|
| (1) Includes share-based compensation expense as follows: | | | | |
| Cost of sales | $ 651 | $ 414 | $ 1,803 | $ 859 |
| Research and development | 673 | 325 | 1,967 | 887 |
| Selling, general and administrative | 3,109 | 2,558 | 8,866 | 4,853 |
| (2) Includes amortization of intangible assets expense as follows: | | | | |
| Cost of sales | $ 16 | $ — | $ 130 | $ — |
| Research and development | — | 245 | — | 735 |
| Selling, general and administrative | 960 | 976 | 2,882 | 2,992 |

*** Amounts for fiscal 2018 are accounted for under ASC 605 (refer to Note 1(u)).*

***Three and Nine Months Ended May 31, 2019 as Compared to the Three and Nine Months Ended May 25, 2018***

***Net Sales***

Net sales decreased by $99.8 million, or 29.8%, during the three months ended May 31, 2019 compared to the same period in the prior year, and increased by $18.7 million, or 2.0%, during the nine months ended May 31, 2019 compared to the same period in the prior year. Net sales were negatively impacted by lower mobile memory and DRAM sales in Brazil of $130.7 million, or a decline of 57.8%, and $143.1 million, or a decline of 24.7%, for the three and nine-month periods, respectively. These decreases were mainly due to lower customer demand for mobile memory product of 43% and 31% for the three and nine-month periods, respectively, as well as lower average selling prices for both mobile memory and DRAM products of 40% and 42% for the three-month period, respectively. The decreases in Brazil were partially offset by additional revenue from our new SCSS business, which was acquired in June 2018, of $35.9 million and $131.9 million for the three and nine-month periods, respectively. For the nine-month period, the decrease was also offset in part by higher Specialty DRAM and Flash sales, increasing by 12% and 13%, and higher average selling prices of 16% and 24%, respectively, due to product mix, as well as sales of new products and increased customer penetration.

***Cost of Sales***

Cost of sales decreased by $64.8 million, or 25.2%, during the three months ended May 31, 2019 compared to the same period in the prior year, and increased by $42.4 million, or 6.0%, during the nine months ended May 31, 2019 compared to the same period in the prior year. The decrease for the three-month period was primarily due to a decrease of 29% in the cost of materials for the lower level of sales. The increase for the nine-month period was primarily due to higher production costs and a 4% increase in the cost of materials related to the increased revenue and additional costs for the new SCSS business. Included in the cost of sales increases were favorable foreign exchange impacts of $1.6 million and $6.4 million for the three and nine-month periods, respectively, due to locally sourced cost of sales in Brazil.

***Gross Profit***

Gross margin decreased to 18.3% and 19.8% during the three and nine months ended May 31, 2019 compared to 23.3% and 22.8% for the same periods in the prior year, respectively, primarily due to higher cost of sales for SCSS, as well as higher fixed manufacturing costs for Brazil.

***Research and Development Expense***

Research and development (“R&D”) expense increased by $1.6 million and $6.2 million, or 16.1% and 22.1%, during the three and nine months ended May 31, 2019, respectively, compared to the same periods in the prior year. The increases were primarily due to $2.2 million and $5.9 million higher costs from our new SCSS business for the three and nine-month periods, respectively. Included in the R&D expense increases were favorable foreign exchange impacts of $0.6 million and $2.2 million for the three and nine-month periods, respectively.

***Selling, General and Administrative Expense***

Selling, general and administrative (“SG&A”) expense increased by $4.7 million and $17.7 million, or 24.0% and 31.9%, during the three and nine months ended May 31, 2019, respectively, compared to the same periods in the prior year. The increases were primarily due to $9.2 million and $24.0 million higher costs from our new SCSS business for the three and nine-month periods, respectively, partially offset by lower intangible amortization expenses as some intangible assets became fully amortized, as well as by lower personnel-related expenses. Included in the SG&A expense increases were favorable foreign exchange impacts of $0.4 million and $1.4 million for the three and nine-month periods, respectively.

***Other Income (Expense)***

Interest expense, net increased $0.9 million and $3.2 million, or 22.0% and 24.9%, during the three and nine months ended May 31, 2019, respectively, compared to the same period in the prior year, primarily due to higher interest expense from an incremental loan in connection with the Penguin acquisition. Other expense, net decreased by $7.2 million and $4.3 million for the three and nine-month periods, respectively, primarily due to foreign currency gains/losses.

***Provision for Income Taxes***

Income tax expense includes a provision for federal, state and foreign taxes based on the annual estimated effective tax rate applicable to SMART, adjusted for certain discrete items which are fully recognized in the period they occur.

Provision for income taxes for the three and nine months ended May 31, 2019 decreased by $5.0 million and $2.4 million, respectively, as compared to the same periods in the prior year, due to lower profits in certain non-U.S. jurisdictions subject to tax, partially offset by expiration of certain tax incentives.

As of May 31, 2019, SMART has a full valuation allowance for our net deferred tax assets associated with our U.S. operations. The amount of the deferred tax asset considered realizable could be adjusted if significant positive evidence increases.

Determining the consolidated provision for income tax expense, income tax liabilities and deferred tax assets and liabilities involves judgment. SMART calculates and provides for income taxes in each of the tax jurisdictions in which it operates, which involves estimating current tax exposures as well as making judgments regarding the recoverability of deferred tax assets in each jurisdiction. The estimates used could differ from actual results, which may have a significant impact on operating results in future periods.

**Liquidity and Capital Resources**

| | Nine Months Ended | |
|---|---|---|
| | May 31, 2019 | May 25, 2018 |
| | (in thousands) | |
| Cash provided by operating activities | $ 120,716 | $ 77,291 |
| Cash used in investing activities | (30,189) | (18,150) |
| Cash provided by (used in) financing activities | 770 | (14,591) |
| Effect of exchange rate changes on cash, cash equivalents and restricted cash * | (2,432) | (3,198) |
| Net increase in cash, cash equivalents and restricted cash * | $ 88,865 | $ 41,352 |

** Cash balance was adjusted to include restricted cash upon adoption of ASU 2016-18 in fiscal 2019.*

At May 31, 2019, we had cash and cash equivalents of $126.1 million, of which $99.7 million was held outside of the United States.

In June 2018, we acquired Penguin for a purchase price of approximately $45 million and assumed approximately $32.3 million of Penguin's outstanding indebtedness. We financed the acquisition with net proceeds from the $60 million Incremental Amendment as defined in Note 7.

In October 2018, we entered into the Second Amendment to the Amended Credit Agreement (as defined in Note 7). As a result of the Second Amendment, we were granted a holiday from the obligation to make quarterly repayments of principal under the Initial Term Loans and the Incremental Term Loans (as defined in Note 7) at any time with respect to fiscal 2019. In addition, we were granted a holiday from the obligation to repay any loans as a result of excess cash flow that would otherwise be due with respect to any period of fiscal 2019.

We expect that our existing cash and cash equivalents, line of credit and cash generated by operating activities will be sufficient to fund our operations for at least the next twelve months. Our principal uses of cash and capital resources are debt service requirements as described below, capital expenditures, R&D expenditures and working capital requirements. We expect that future capital expenditures will focus on expanding our R&D activities, manufacturing equipment upgrades and/or acquisitions and IT infrastructure and software upgrades. Cash and cash equivalents consist of funds held in demand deposit accounts and money market funds. We do not enter into investments for trading or speculative purposes.

During the nine months ended May 31, 2019, cash provided by operating activities was $120.7 million. The primary factors affecting our cash flows during this period were $45.7 million of net income, $36.2 million of non-cash related expenses and a $38.8 million change in our net operating assets and liabilities. The $38.8 million change in net operating assets and liabilities consisted of decreases of $7.7 million in accounts receivable, $82.8 million inventory and $0.9 million in prepaid expenses and other assets, offset by decreases of $44.9 million in accounts payable, $7.6 million in accrued expense and other liabilities. The decreases in inventory and accounts payable were primarily due to the reduction of inventory along all business areas as product lead times and average selling prices reduced.

During the nine months ended May 25, 2018, cash provided by operating activities was $77.3 million. The primary factors affecting our cash flows during this period were an $89.7 net income and $26.5 million of non-cash related expenses, partially offset by a $38.9 million change in our net operating assets and liabilities. The $38.9 million change in net operating assets and liabilities consisted of increases of $86.7 million in accounts receivable, $27.9 million in inventory, $3.5 million in prepaid expenses and other assets and a decrease of $4.7 million in accrued expenses and other liabilities, offset by an increase of $83.9 million in accounts payable. The increases in accounts receivable, inventory and accounts payable were primarily due to higher gross sales.

Net cash used in investing activities during the nine months ended May 31, 2019 was $30.2 million consisting primarily of purchases of property and equipment. Net cash used in investing activities during the nine months ended May 25, 2018 was $18.2 million consisting primarily of purchases of property and equipment.

Net cash provided by financing activities during the nine months ended May 31, 2019 was $0.8 million, consisting primarily of $6.1 million proceeds from issuance of ordinary shares from share option exercises and employee share purchase plans, partially offset by $5.1 million long-term debt payments for the BNDES Credit Agreements and $0.2 million for withholding tax on restricted stock units. Net cash used in financing activities during the nine months ended May 25, 2018 was $14.6 million consisting primarily of $18.4 million long-term debt payments for both the Amended Credit Agreement and the BNDES Credit Agreements, $1.6 million payment of expenses related to our initial public offering and $0.8 million payment of fees for our revolving line of credit financing, partially offset by $6.2 million proceeds from issuance of ordinary shares from share option exercises..

There have been no material changes to contractual obligations previously disclosed in our Annual Report.

**Off-Balance Sheet Arrangements**

We do not have any 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. In addition, we do not have any undisclosed borrowings or debt, and we have not entered into any synthetic leases. We are, therefore, not materially exposed to any financing, liquidity, market or credit risk that could arise if we had engaged in such relationships.

We do not have any off-balance sheet arrangements that have or are reasonably likely to have a current or future effect on our financial condition, changes in financial conditions, net sales or expenses, results of operations, liquidity, capital expenditures or capital resources that is material to investors.

**Recent Accounting Pronouncements**

See Note 1 of our Notes to Unaudited Condensed Consolidated Financial Statements for information regarding the effect of recent accounting pronouncements on our financial statements.

**Critical Accounting Policies**

The preparation of financial statements and related disclosures in conformity with accounting principles generally accepted in the United States of America ("U.S. GAAP") requires management to make estimates and assumptions that affect the reported amounts of assets and liabilities and disclosures of contingent assets and liabilities at the date of the financial statements and the reported amounts of revenues and expenses during the reporting period. On an ongoing basis, we evaluate our estimates, including those listed below. We base our estimates on historical facts and various other assumptions that we believe to be reasonable at the time the estimates are made. Actual results could differ from those estimates.

Our critical accounting policies are as follows:

- Revenue recognition;
- Inventory valuation;
- Income taxes;
- Impairment of long-lived assets and long-lived assets to be disposed; and
- Share-based compensation.

Our critical accounting policies are important to the portrayal of our financial condition and results of operations, and require us to make judgments and estimates about matters that are inherently uncertain. There have been no material changes to our critical accounting policies and estimates disclosed in "Item 2. Management's Discussion and Analysis of Financial Condition and Results of Operations—Critical Accounting Policies and Estimates" and Note 1, Overview, Basis of Presentation and Significant Accounting Policies, in each case in our Annual Report.

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

Our exposure to market rate risk includes risk of foreign currency exchange rate fluctuations, changes in interest rates and translation risk.

***Foreign Exchange Risks***

We are subject to inherent risks attributed to operating in a global economy. Our international sales and our operations in foreign countries subject us to risks associated with fluctuating currency values and exchange rates. Because a portion of our sales are denominated in U.S. dollars, increases in the value of the U.S. dollar could increase the price of our products so that they become relatively more expensive to customers in a particular country, possibly leading to a reduction in sales and profitability in that country. A significant portion of the sales of our products are denominated in Brazil reais. In addition, we have certain costs that are denominated in foreign currencies, and increases in the value of the U.S. dollar could result in increases in such costs that could have a material adverse effect on our results of operations. Beginning in the first quarter of fiscal 2019, we entered into forward contracts to hedge a portion of our foreign exchange risk in Brazil.

As a result of our international operations, we generate a portion of our net sales and incur a portion of our expenses in currencies other than the U.S. dollar, particularly the Brazil reais. Approximately 48% and 66% of our net sales during the nine months ended May 31, 2019 and May 25, 2018, respectively, originated in reais. We present our combined financial statements in U.S. dollars, and we must translate the assets, liabilities, net sales and expenses of a substantial portion of our foreign operations into U.S. dollars at applicable exchange rates. Consequently, increases or decreases in the value of the U.S. dollar may affect the value of these items with respect to our non-U.S. dollar businesses in our combined financial statements, even if their value has not changed in their local currency. Our customer pricing and material cost of sales are based on U.S. dollars, as is the global market for memory products. Accordingly, the impact of currency fluctuations to our consolidated income statements is primarily due to our other costs of sales (i.e., non-material components) and our operating expenses as those items are typically denominated in local currency. Our consolidated income statements are also impacted by foreign currency gains and losses recorded in Other Expense arising from transactions denominated in a currency other than the functional currency of the respective subsidiary. These translations could significantly affect the comparability of our results between financial periods or result in significant changes to the carrying value of our assets, liabilities and equity. As a result, changes in foreign currency exchange rates impact our reported results.

During the nine months ended May 31, 2019 and May 25, 2018, we recorded $3.5 million and $7.3 million, respectively, of foreign exchange losses.

***Interest Rate Risk***

We are subject to interest rate risk in connection with our long-term and short-term debt, including the $208.5 million aggregate balance under the term loans under the Amended Credit Agreement, the R$3.2 million (or $0.8 million) balance under the BNDES 2013 Credit Agreement and the R$16.5 million (or $4.2 million) balance under the BNDES 2014 Credit Agreement, in each case as of May 31, 2019. Although we did not have any revolving balances outstanding as of May 31, 2019, the revolving facility under the Amended Credit Agreement provides for borrowings of up to $50 million that would also bear interest at variable rates. Assuming that we will satisfy the financial covenants required to borrow and that the revolving loans under the Amended Credit Agreement were fully drawn and other variables are held constant, each 1.0% increase in interest rates on our variable rate borrowings would result in an increase in annual interest expense and a decrease in our cash flow and income before taxes of $2.6 million per year.

**Item 4. Controls and Procedures**

*Limitation on Effectiveness of Controls*

Any control system, no matter how well designed and operated, can provide only reasonable assurance as to the tested objectives. The design of any control system is based in part upon 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, regardless of how remote. The inherent limitations in any control system include the realities that judgments related to decision-making can be faulty, and that reduced effectiveness in controls can occur because of simple errors or mistakes. Due to the inherent limitations in a cost-effective control system, misstatements due to error may occur and may not be detected.

*Evaluation of Disclosure Controls and Procedures*

Management is required to evaluate our disclosure controls and procedures, as defined in Rule 13a-15(e) under the Securities Exchange Act of 1934 (the “Exchange Act”). Disclosure controls and procedures are controls and other procedures designed to provide reasonable assurance that information required to be disclosed in our reports filed under the Exchange Act, such as this Quarterly Report on Form 10-Q, is recorded, processed, summarized and reported within the time periods specified in the Securities and Exchange Commission’s rules and forms. Disclosure controls and procedures include controls and procedures designed to provide reasonable assurance that such information is accumulated and communicated to our management, including our Chief Executive Officer and Chief Financial Officer as appropriate to allow timely decisions regarding required disclosure. Based on our management’s evaluation (with the participation of our principal executive officer and principal financial officer), 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 Exchange Act) were effective at a reasonable assurance level as of the end of the period covered by this report.

*Changes in Internal Control over Financial Reporting*

There were no changes in our internal control over financial reporting during the quarter ended May 31, 2019, which were identified in connection with management’s evaluation required by paragraph (d) of Rules 13a-15 and 15d-15 under the Exchange Act, that have materially affected or are reasonably likely to materially affect our internal control over financial reporting.

## PART II. OTHER INFORMATION

### Item 1. Legal Proceedings

Information with respect to this item may be found in Note 10, Commitments and Contingencies, in our Notes to Unaudited Condensed Consolidated Financial Statements included in Part I, Item 1, of this Quarterly Report on Form 10-Q, which information is incorporated herein by reference.

### Item 1A. Risk Factors

There have been no material changes to the risks described in Part I, Item 1A, "Risk Factors," in our Annual Report on Form 10-K for our fiscal year ended August 31, 2018, and in Part II, Item 1A. "Risk Factors" in our Quarterly Report on Form 10-Q for our fiscal quarter ended November 30, 2018, except as set forth below. These risk factors could materially and adversely affect our business, financial condition and results of operations, and the market price of our ordinary shares could decline. These risk factors do not identify all risks that we face – our operations could also be affected by factors that are not presently known to us or that we currently consider to be immaterial to our operations. Due to risks and uncertainties, known and unknown, our past financial results may not be a reliable indicator of future performance and historical trends should not be used to anticipate results or trends in future periods.

***Our success in Brazil depends in part on Brazilian laws establishing local manufacturing requirements for electronics products. The elimination of or a reduction in the local manufacturing requirements, or our inability to secure the benefits of these regulations, could significantly reduce the demand for, and the profit margins on, our products in Brazil.***

Successive Brazilian governmental administrations have adopted economic policies intended to foster innovation and investment in local production, stimulate job growth, provide stimulus to exports and defend local manufacturers in various industries. In recent decades, the Brazilian government identified the design and manufacture of ICs as a priority and established tax incentives and local content requirements intended to promote the development of the local IT industry. These incentives include the Lei da Informática—Processo Produtivo Básico (PPB/IT Program), the Support Program for the Technological Development of the Semiconductor and Display Industries (PADIS) and Lei do Bem. The PPB/IT program is intended to promote local manufacturing by allowing qualified companies to sell specified IT products, including desktops, notebooks, servers, SmartTVs and mobile products, with a reduced Brazilian federal excise tax rate, or the IPI, as compared to the rate that is required to be collected by non-qualified suppliers. The PPB/IT Program provides an incentive for certain customers to purchase products from us because they are not required to pay the regular level of IPI on their purchases. Under the PPB/IT Program, the percentage of local content required in specified IT products has increased significantly from 2006 to present, and the law that provides the PPB/IT Program benefits is currently legislated to remain in force through the end of 2029. For example, under the PPB/IT Program, from 2006 to present the total requirement of DRAM modules made with locally packaged DRAM ICs for notebook computers has increased from 0% to 80%. In order to receive the intended treatment as a PPB/IT Program supplier, our subsidiary, SMART do Brazil, is required to invest in research and development activities in an amount equal to 4% of its gross annual sales revenues reduced by the following: the cost of raw materials qualified as products eligible for the PPB/IT Program, including the ICs that are purchased from our other Brazilian subsidiary, SMART Brazil, and that are used to make memory modules; applicable sales taxes; the value of products exported out of Brazil; and the value of products shipped to the Manaus Free Trade Zone. Brazil's local content requirements for the IT industry have been subject to criticism by other governments and international organizations.

In 2013, the European Union (EU), later joined by Japan, requested the establishment of a panel within the World Trade Organization (WTO) to determine whether certain measures enacted by the Brazilian government concerning tax incentives and local content requirements for the automotive and several other industries including the IT industry and including PADIS, the PPB/IT Program and Lei do Bem, are inconsistent with WTO rules. On August 30, 2017 the WTO panel released a report in which the panel concluded, among other things, that the tax exemptions, reductions and suspensions granted for the automotive, IT and other industries amount to subsidies that are inconsistent with the principles of the various WTO agreements, and the panel recommended that Brazil withdraw these subsidies. The parties all filed appeals to the report's findings and hearings on the appeals were held in June 2018. On December 13, 2018, the appellate body of the WTO released its decision in which it upheld some of the panel's findings that certain of the incentives available to us in Brazil are contrary to certain of the principles of the WTO agreements, and the appellate body reversed certain of the panel's findings including the panel's findings with respect to the time frame for Brazil to remediate the ways in which certain of the Brazil policies were considered to be contrary to the principles of the WTO agreements. The appellate body noted that it would not contravene the principles of the WTO agreements for Brazil to establish local manufacturing processes as a condition to benefit from incentives granted by the government, provided that such benefits do not impose a less favorable treatment on imported goods compared with locally manufactured goods. As an initial response to the WTO report, government authorities in Brazil released an ordinance in June 2019 which revoked 14 ordinances that established requirements under the PPB/IT Program, many of which were related to our local business. The revocation will become effective June 30, 2019 and it is expected that the authorities will revoke more ordinances related to the PPB/IT Program in the future. Government officials in Brazil have continued to express their intent to restructure the incentives to be consistent with the WTO principles in order to continue to support local industry. The June 2019 ordinance that revoked 14 prior ordinances also provided that the Ministry of Science, Technology, Innovation and Communication and the Ministry of Economics are required to enact replacement rules for the revoked PPB/IT Program ordinances by June 30, 2019. Based upon a number of public consultations published by the government, we expect that the replacement ordinances will provide a similar level of support for our business as was in place previously. On June 24, 2019, the authorities published the first of what we expect will be a series of new ordinances that provide a structure for revised support for local manufacturing. There can be no assurance, however, that the replacement ordinances and programs will ultimately be restructured and implemented in a way or, if implemented, whether the restructured programs will provide the same or similar level of support and benefit to our business as is currently the case.

While we cannot predict the outcome of the actions to be taken by the government of Brazil, the decision of the WTO could result in significant adverse changes to the local content rules and incentives available to us and our customers in Brazil. Any further revocations, suspensions, early terminations or other adverse changes in the local content requirements could significantly reduce the demand for, and the profit margins on, our products in Brazil, and would have a material adverse effect on our business, results of operations, cash flows and financial condition.

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

***Amended Credit Agreement***

We are subject to certain restrictions with respect to the use of our working capital and our ability to pay dividends under our Amended Credit Agreement, as described in Note 7, Long-Term Debt—Amended Credit Agreement, in our Notes to Unaudited Condensed Consolidated Financial Statements included in Part I, Item 1, of this Quarterly Report on Form 10-Q, which information is incorporated herein by reference.

**Item 3. Defaults Upon Senior Securities**

None.

**Item 4. Mine Safety Disclosures**

Not applicable.

**Item 6. Exhibits**

| Exhibit No. | Exhibit Title |
|---|---|
| 31.1* | Certification of Principal Executive Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302(a) of the Sarbanes-Oxley Act of 2002. |
| 31.2* | Certification of Principal Financial Officer pursuant to Rules 13a-14(a) and 15d-14(a) under the Securities Exchange Act of 1934, as adopted pursuant to Section 302(a) of the Sarbanes-Oxley Act of 2002. |
| 32.1** | Certification of Principal Executive Officer pursuant 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. |
| 32.2** | Certification of Principal Financial Officer pursuant 18 U.S.C. Section 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002. |
| 101.INS | XBRL Instance Document |
| 101.SCH | XBRL Taxonomy Extension Schema Document |
| 101.CAL | XBRL Taxonomy Extension Calculation Linkbase Document |
| 101.LAB | XBRL Taxonomy Extension Label Linkbase Document |
| 101.PRE | XBRL Taxonomy Extension Presentation Linkbase Document |
| 101.DEF | XBRL Taxonomy Extension Definition Linkbase Document |

*	Filed herewith.
**	Furnished herewith.

**SIGNATURES**

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

**SMART GLOBAL HOLDINGS, INC.**

| | | |
|---|---|---|
| Date: June 27, 2019 | By: | /s/ AJAY SHAH |
| | Name: | Ajay Shah |
| | Title: | Chairman of the Board, President and Chief Executive Officer (Principal Executive Officer) |
| Date: June 27, 2019 | By: | /s/ JACK PACHECO |
| | Name: | Jack Pacheco |
| | Title: | Executive Vice President and Chief Financial Officer (Principal Financial and Accounting Officer) |

**Exhibit 31.1**

**CERTIFICATION PURSUANT TO
RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,
AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Ajay Shah, certify that:

1. I have reviewed this quarterly report on Form 10-Q of SMART Global Holdings, Inc.;

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

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

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

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

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

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

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

5. The registrant's other certifying officer(s) 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: June 27, 2019

By: /s/ AJAY SHAH
Name: Ajay Shah
Title: Chairman of the Board, President and Chief Executive Officer (Principal Executive Officer)

**Exhibit 31.2**

**CERTIFICATION PURSUANT TO**
**RULES 13a-14(a) AND 15d-14(a) UNDER THE SECURITIES EXCHANGE ACT OF 1934,**
**AS ADOPTED PURSUANT TO SECTION 302 OF THE SARBANES-OXLEY ACT OF 2002**

I, Jack Pacheco, certify that:

1. I have reviewed this quarterly report on Form 10-Q of SMART Global Holdings, Inc.;

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

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

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

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

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

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

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

5. The registrant's other certifying officer(s) 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: June 27, 2019

By: /s/ JACK PACHECO
Name: Jack Pacheco
Title: Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)

**Exhibit 32.1**

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

In connection with the Quarterly Report of SMART Global Holdings, Inc. (the "Company") on Form 10-Q for the period ending May 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Ajay Shah, Chairman of the Board, President and Chief Executive Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

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

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

Date: June 27, 2019

By: /s/ AJAY SHAH
Name: Ajay Shah
Title: Chairman of the Board, President and Chief Executive Officer (Principal Executive Officer)

**Exhibit 32.2**

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

In connection with the Quarterly Report of SMART Global Holdings, Inc. (the "Company") on Form 10-Q for the period ending May 31, 2019 as filed with the Securities and Exchange Commission on the date hereof (the "Report"), I, Jack Pacheco, Executive Vice President and Chief Financial Officer of the Company, certify, pursuant to 18 U.S.C. § 1350, as adopted pursuant to § 906 of the Sarbanes-Oxley Act of 2002, that:

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

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

Date: June 27, 2019

By: /s/ JACK PACHECO
Name: Jack Pacheco
Title: Executive Vice President and Chief Financial Officer
(Principal Financial and Accounting Officer)