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

FORM 10-K

(Mark One)

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

For the fiscal year ended September 2, 2021

OR

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

For the transition period from to

Commission file number 1-10658

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

Delaware	**75-1618004**
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)
8000 S. Federal Way, Boise, Idaho	**83716-9632**
(Address of principal executive offices)	(Zip Code)
Registrant's telephone number, including area code	(208) 368-4000

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

Title of each class	Trading Symbol	Name of each exchange on which registered
Common Stock, par value $0.10 per share	MU	Nasdaq Global Select Market

Securities registered pursuant to Section 12(g) of the Act: **None**

Indicate by check mark if the registrant is a well-known seasoned issuer, as defined in Rule 405 of the Securities Act. Yes ☒ No ☐

Indicate by check mark if the registrant is not required to file reports pursuant to Section 13 or Section 15(d) of the Act. Yes ☐ No ☒

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 has filed a report on and attestation to its management's assessment of the effectiveness of its internal control over financial reporting under Section 404(b) of the Sarbanes-Oxley Act (15 U.S.C. 7262(b)) by the registered public accounting firm that prepared or issued its audit report. ☒

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

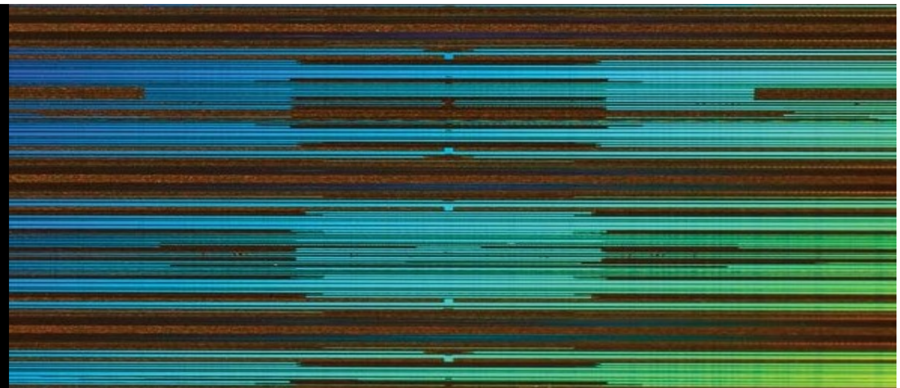
The aggregate market value of the voting and non-voting common equity held by non-affiliates was $79.9 billion based on the closing price reported on the Nasdaq Global Select Market on March 4, 2021. Shares of common stock held by each executive officer and director and by each person who owns 5% or more of the outstanding common stock were excluded as they may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

The number of outstanding shares of the registrant's common stock as of October 1, 2021 was 1,118,623,738.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for the registrant's Fiscal 2021 Annual Meeting of Shareholders to be held on January 13, 2022 are incorporated by reference into Part II and Part III of this Annual Report on Form 10-K.

Micron Corporate Profile



Founded on October 5, 1978

Headquartered in Boise, Idaho, USA

$27.7B
FY21 annual revenue

4th
Largest semiconductor company in the world*

135
On the 2021 Fortune 500

47,500+
Patents granted and growing**

17
Countries**

12
Manufacturing sites and 14 customer labs**

~43,000
Team members**

*Based on Gartner Market Share: Semiconductors by End Market, Worldwide, 2020 (April 2021), excluding IP/software revenue.
**Micron data as of September 2, 2021.

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It's All About Data

Data is today's new business currency, and memory and storage are a critical foundation for the data economy. Memory and storage innovations will help transform society and enable significant value *for all*.

Who We Are

Micron designs, develops and manufactures industry-leading memory and storage products. By providing foundational capability for AI and 5G across data center, the intelligent edge, and consumer devices, we unlock innovation across industries including healthcare, automotive and communications. Our technology and expertise are central to maximizing value from cutting-edge computing applications and new business models which disrupt and advance the industry.

Our Vision

As a global leader in memory and storage solutions, we are transforming how the world uses information to enrich life *for all*. By advancing technologies to collect, store and manage data with unprecedented speed and efficiency, we lead the transformation of data to intelligence. In a world of change, we remain nimble, delivering products that help inspire the world to learn, communicate and advance faster than ever.

Our Commitment

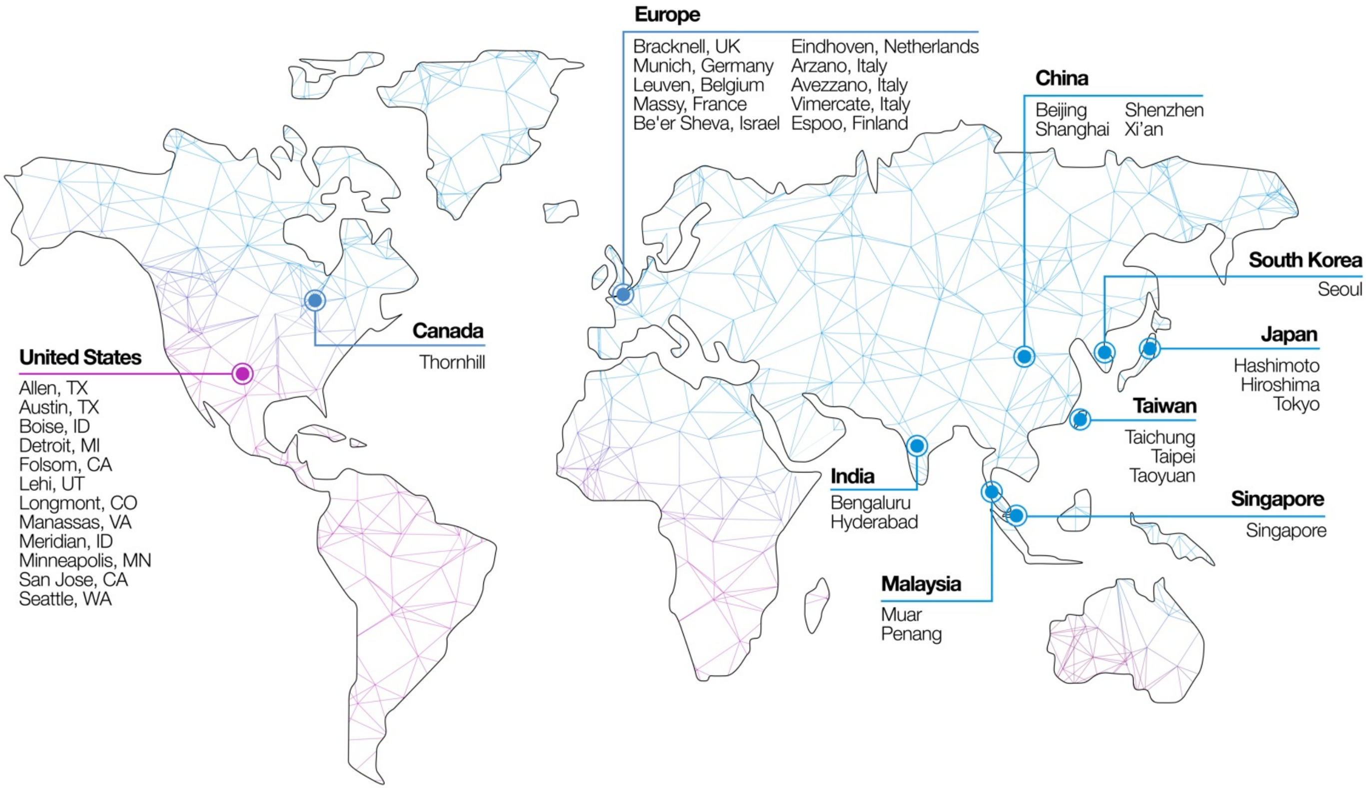
Our customers depend on our innovative solutions every day. We dedicate ourselves to demonstrating our environmental conscience, an inclusive team culture where all voices are heard and respected, and engaging in our communities to enrich life *for all*.

Global Product Portfolio

DRAM | NAND | NOR | Solid-State Drives | Graphics and High Bandwidth Memory (HBM) | Managed NAND and Multichip Packages

Connect with us on micron.com

Micron's Global Footprint



Micron's global footprint map highlights locations that include our manufacturing sites, centers of excellence, customer labs, and large offices. Not all Micron locations are represented on this map.

Vision

Transforming how the world uses information to enrich life *for all*.

Mission

Be a global leader in memory and storage solutions.

Values

We strive to live the following core values with passion and unwavering integrity.

People
We care about each other.

Tenacity
Nothing shakes our resolve.

Innovation
We develop solutions that shape the world's future.

Collaboration
We work as one team.

Customer Focus
We win by knowing our customers.

Micron

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Forward-Looking Statements

This Form 10-K contains trend information and other forward-looking statements that involve a number of risks and uncertainties. Such forward-looking statements may be identified by words such as "anticipate," "expect," "intend," "pledge," "committed," "plans," "opportunities," "future," "believe," "target," "on track," "estimate," "continue," "likely," "may," "will," "would," "should," "could," and variations of such words and similar expressions. However, the absence of these words or similar expressions does not mean that a statement is not forward-looking. Specific forward-looking statements include, but are not limited to, statements such as those made regarding the impact of coronavirus disease 2019 ("COVID-19") to our business; expected bit shipments; the completion of and timing for closing the pending sale of our Lehi facility; the sufficiency of our cash and investments; the payment of future cash dividends; and capital spending in 2022. Our actual results could differ materially from our historical results and those discussed in the forward-looking statements. Factors that could cause actual results to differ materially include, but are not limited to, those identified in "Part I – Item 1A. Risk Factors."

Definitions of Commonly Used Terms

As used herein, "we," "our," "us," and similar terms include Micron Technology, Inc. and our consolidated subsidiaries, unless the context indicates otherwise. Abbreviations, terms, or acronyms are commonly used or found in multiple locations throughout this report and include the following:

Term	Definition	Term	Definition
2023 Notes	2.497% Senior Notes due 2023	LPDDR	Low-Power Double Data Rate DRAM
2024 Notes	4.640% Senior Notes due 2024	LPDRAM	Low-Power DRAM
2024 Term Loan A	Senior Term Loan A due 2024 entered into on May 14, 2021	MCP	Multichip packaged solutions with managed NAND and LPDRAM.
2025 Notes	5.500% Senior Notes due 2025	Micron	Micron Technology, Inc. (Parent Company)
2026 Notes	4.975% Senior Notes due 2026	MTU	Micron Technology Utah, LLC
2027 Notes	4.185% Senior Notes due 2027	NVMe	Hardware interface for SSDs that connect via a PCIe bus.
2029 Notes	5.327% Senior Notes due 2029	OEM	Original Equipment Manufacturer
2030 Notes	4.663% Senior Notes due 2030	PCIe	High-speed motherboard connection for peripheral devices such as storage drives.
2032D Notes	3.125% Convertible Senior Notes due 2032	Qimonda	Qimonda AG
DDR	Double Data Rate DRAM	QLC	Quad-Level Cell (four bits per cell)
EBITDA	Earnings before interest, taxes, depreciation, and amortization	Revolving Credit Facility	$2.5 billion Revolving Credit Facility due May 2026
EUV	Extreme ultraviolet lithography	SATA	Hardware interface for connecting to storage devices such as hard disk drives and SSDs.
Extinguished 2024 Term Loan A	Senior Term Loan A due 2024 repaid on May 14, 2021	SLC	Single-Level Cell (one bit per cell)
GDDR	Graphics Double Data Rate	SOFR	Secured Overnight Financing Rate
IC	Integrated Circuit	SSD	Solid State Drive
IMFT	IM Flash Technologies, LLC	TI	Texas Instruments Incorporated
Inotera	Inotera Memories, Inc.	TLC	Triple-Level Cell (three bits per cell)
Intel	Intel Corporation	UFS	Universal Flash Storage
LIBOR	London Interbank Offered Rate	uMCP	UFS-based MCP

Micron, Crucial, any associated logos, and all other Micron trademarks are the property of Micron. Intel and 3D XPoint are trademarks of Intel Corporation or its subsidiaries. Other product names or trademarks that are not owned by Micron are for identification purposes only and may be the trademarks of their respective owners.

All period references are to our fiscal periods unless otherwise indicated. Our fiscal year is the 52 or 53-week period ending on the Thursday closest to August 31. Fiscal 2021 contained 52 weeks, fiscal 2020 contained 53 weeks, and fiscal 2019 contained 52 weeks. Our fourth quarter of fiscal 2020 contained 14 weeks and all other fiscal quarters in the years presented contained 13 weeks.

PART I
ITEM 1. BUSINESS

Overview

Micron Technology, Inc., including its consolidated subsidiaries, is an industry leader in innovative memory and storage solutions transforming how the world uses information to enrich life *for all*. With a relentless focus on our customers, technology leadership, and manufacturing and operational excellence, Micron delivers a rich portfolio of high-performance DRAM, NAND, and NOR memory and storage products through our Micron® and Crucial® brands. Every day, the innovations that our people create fuel the data economy, enabling advances in artificial intelligence and 5G applications that unleash opportunities — from the data center to the intelligent edge and across the client and mobile user experience.

We manufacture our products at wholly-owned facilities and also utilize subcontractors to perform certain manufacturing processes. We make significant investments to develop proprietary product and process technology, which are implemented in our manufacturing facilities. Advancements in product and process technology generally increase the density per wafer and reduce manufacturing costs of each generation of product. We continue to introduce new generations of products that offer improved performance characteristics, including higher data transfer rates, advanced packaging solutions, lower power consumption, improved read/write reliability, and increased memory density.

The introduction of 176-layer NAND and 1α (1-alpha) DRAM represent major technology breakthroughs for our company and the first time in our history that we have achieved industry leadership across these two flagship technologies. In 2021, we introduced our industry leading 1α memory node, the world's most advanced memory node in high-volume production. This advancement has been realized across our standard compute DRAM and LPDRAM product lines. We are shipping these products in volume, and we have partnered with customers to provide value-added innovation, speed market adoption of our new solutions, and prepare the ecosystem for broad adoption of our offerings across markets. We also launched 176-layer NAND based solutions into the market in 2021. Our managed NAND and SSD products incorporate NAND, a controller, firmware, and in some cases, DRAM. An increasing portion of our SSDs incorporate proprietary controllers and firmware that we have developed. Development of advanced technologies enables us to diversify our product portfolio toward a richer mix of differentiated, high-value solutions and to target high-growth markets and specific customer requirements across data center, intelligent edge, client, and mobile environments.

We face intense competition in the semiconductor memory and storage markets and to remain competitive we must continuously develop and implement new products and technologies and decrease manufacturing costs. Our success is largely dependent on obtaining returns on our research and development ("R&D") investments, efficient utilization of our manufacturing infrastructure, development and integration of advanced product and process technologies, market acceptance of our diversified portfolio of semiconductor-based memory and storage solutions, and efficient capital spending.

Lehi, Utah Fab and 3D XPoint

In the second quarter of 2021, we updated our portfolio strategy to further strengthen our focus on memory and storage innovations for the data center market. In connection therewith, we determined that there was insufficient market validation to justify the ongoing investments required to commercialize 3D XPoint at scale. Accordingly, we ceased development of 3D XPoint technology and engaged in discussions with potential buyers for the sale of our facility located in Lehi that was dedicated to 3D XPoint production. As a result, we classified the property, plant, and equipment as held for sale and ceased depreciating the assets. On June 30, 2021, we announced that we entered into a definitive agreement to sell our Lehi facility to TI for cash consideration of $900 million. The sale is anticipated to close in the first quarter of 2022. Select tools and other equipment will be retained for redeployment to our other manufacturing sites or for resale to other buyers.

In the third quarter of 2021, we recognized a charge of $435 million included in restructure and asset impairments (and a tax benefit of $104 million included in income tax (provision) benefit) to write down the assets held for sale to the expected consideration, net of estimated selling costs, to be realized from the sale of these assets and liabilities. In the second quarter of 2021, we also recognized a charge of $49 million to cost of goods sold to write down 3D XPoint inventory due to our decision to cease further development of this technology. Our 3D XPoint technology development and Lehi facility operations are primarily included in our CNBU segment results.

Impact of COVID-19 on Our Business

Events surrounding the ongoing COVID-19 pandemic initially resulted in a reduction in economic activity across the globe, and the timing and extent of the ongoing economic recovery remains uncertain. As a result, we have experienced volatility in the markets that our products are sold into, driven by the move to a stay-at-home economy and fluctuations in consumer and business spending, which has affected demand for certain of our products. The ultimate extent to which COVID-19 will impact our business depends on future developments, which are highly uncertain and very difficult to predict, including the effectiveness and utilization of vaccines for COVID-19 and its variants, the severity of COVID-19 and its variants, and the effectiveness of the actions to contain or limit their spread.

From the start of the COVID-19 pandemic, we proactively implemented preventative protocols, which we continuously assess and update for changes in conditions and emerging trends. These preventative protocols are intended to safeguard our team members, contractors, suppliers, customers, distributors, and communities, and to ensure business continuity. Government restrictions or severe outbreaks can impact our operations at certain sites. While all our global manufacturing sites are currently operating with close to full staff and at normal capacity levels, our facilities could be required to temporarily curtail production levels or temporarily cease operations based on government mandates or our health and safety protocols. We may be required, or deem it to be in the best interest of our employees, customers, partners, suppliers, and stakeholders, to alter our business operations in order to maintain a healthy and safe environment. It is not clear what potential effects any such alterations or modifications may have on our business, including effects on our customers, employees, or on our financial results. We are following government policies and recommendations designed to slow the spread of COVID-19 and remain committed to the health and safety of our team members, contractors, suppliers, customers, distributors, and communities.

We continuously assess our efforts to respond to the COVID-19 pandemic, which have included the following:

- In locations experiencing continued community COVID-19 infections, we prohibit onsite visitors and are generally requiring team members to work from home where possible or practical. Where work from home is not possible, all on-site team members must complete health questionnaires, pass through thermal scanning equipment to ensure they do not have an elevated body temperature, and adhere to physical distancing requirements, mask protocols, and team member separation protocols. We have also enhanced our contact tracing, significantly decreased business travel, and where possible, made ventilation and other health and safety enhancements at our facilities, and provided COVID-19 testing and vaccinations for our team members.
- Following the U.S. Food and Drug Administration's recent approval of the Pfizer-BioNTech COVID-19 vaccine, we mandated that all U.S. employees and, in addition, contractors that enter our U.S. buildings and certain other locations, be fully vaccinated against COVID-19, subject to disability and religious exemptions, by November 15, 2021.
- We continue to work closely with our customer base to best match our supply to changing market conditions.
- We evaluate our supply chain and communicate with our suppliers to identify supply gaps and have taken steps to provide continuity, to the extent possible, though we expect that constraints within our supply chain for certain IC components may somewhat limit our bit shipments in the near term. In some cases, we have added alternative suppliers and increased our on-hand inventory of raw materials needed in our operations.
- We have added assembly and test capacity to provide redundant manufacturing capability through our network of captive operations and external partners.
- We have evaluated all our construction projects across our global manufacturing operations and enacted protocols to enhance the safety of our team members, suppliers, and contractors.
- We have developed strategies and implemented measures to respond to a variety of potential economic scenarios, such as limitations on new hiring and business travel and reductions of discretionary spending.
- We are working with government authorities in the jurisdictions where we operate and continuing to monitor our operations in an effort to ensure we follow government requirements, relevant regulations, industry

standards, and best practices to help safeguard our team members, while safely continuing operations at our sites across the globe.

We believe these actions are appropriate and prudent to safeguard our team members, contractors, suppliers, customers, and communities, while allowing us to safely continue operations. We cannot predict how the steps we, our team members, government entities, suppliers, or customers take in response to the COVID-19 pandemic will ultimately impact our business, outlook, or results of operations.

Sales, Markets, and Products

Product Technologies

Our product portfolio of memory and storage solutions, advanced solutions, and storage platforms is based on our high-performance semiconductor memory and storage technologies, including DRAM, NAND, NOR, and other technologies. We sell our products into various markets through our business units in numerous forms, including wafers, components, modules, SSDs, managed NAND, and MCP products. Our system-level solutions, including SSDs and managed NAND, combine NAND, a controller, firmware, and in some cases DRAM.

***DRAM*: ** DRAM products are dynamic random access memory semiconductor devices with low latency that provide high-speed data retrieval with a variety of performance characteristics. DRAM products lose content when power is turned off ("volatile") and are most commonly used in client, cloud server, enterprise, networking, graphics, industrial, and automotive markets. LPDRAM products, which are engineered to meet standards for performance and power consumption, are sold into smartphone and other mobile-device markets (including client markets for Chromebooks and notebook PCs), as well as into the automotive, industrial, and consumer markets.

***NAND*:** NAND products are non-volatile, re-writeable semiconductor storage devices that provide high-capacity, low-cost storage with a variety of performance characteristics. NAND is used in SSDs for the enterprise and cloud, client, and consumer markets and in removable storage markets. Managed NAND is used in smartphones and other mobile devices, and in consumer, automotive, and embedded markets. Low-density NAND is ideal for applications like automotive, surveillance, machine-to-machine, automation, printer, and home networking.

***NOR*:** NOR products are non-volatile re-writable semiconductor memory devices that provide fast read speeds. NOR is most commonly used for reliable code storage (e.g., boot, application, operating system, and execute-in-place code in an embedded system) and for frequently changing small data storage and is ideal for automotive, industrial, and consumer applications.

***3D XPoint*:** 3D XPoint is a class of non-volatile technology between DRAM and NAND in the memory and storage hierarchy. In 2021, we ceased development of 3D XPoint technology.

Products by Business Unit and Market

Compute and Networking Business Unit ("CNBU")

CNBU includes memory products and solutions sold into client, cloud server, enterprise, graphics, and networking markets. CNBU reported revenue of $12.28 billion in 2021, $9.18 billion in 2020, and $9.97 billion in 2019. CNBU sales in 2021 consisted primarily of DRAM products produced on 1x, 1y, and 1z technology nodes. In 2021, we were the first to introduce products built using 1α DRAM process technology, which offers major improvements in bit density, power, and performance. Our 1α DRAM is ramping in various products across PC, server, and mobile and accounted for a meaningful portion of our revenue by the fourth quarter of 2021.

<u>*Client*</u>: CNBU sales to the client market in 2021 consisted primarily of DDR4 and LPDDR4 DRAM products. Our products sold to the client market support both commercial and consumer PC growth, with growth driven by the rapid deployment of PCs to support the work-from-home and e-learning environments as the world responded to the COVID-19 pandemic.

Cloud Server: CNBU sales to the cloud market in 2021 consisted primarily of our DDR4 DRAM products. The cloud server market continued to experience healthy demand in 2021 due to work-from-home and e-learning environments, video streaming, and significant increases in e-commerce activity around the world. The cloud server market has also been driven, in part, by intelligent edge devices capable of artificial intelligence and augmented reality that store and access data in the cloud. Cloud servers supporting artificial intelligence and data-centric workloads require significantly increasing quantities of DRAM and, as the number and capabilities of these intelligent edge devices increase, more data is stored, processed, and accessed in the cloud, creating a virtuous cycle between the cloud and edge devices.

Enterprise: CNBU sales to the enterprise market in 2021 consisted primarily of our DDR4 DRAM products. In 2021, we continued to make progress on our transition to DDR5, which doubles bandwidth and reduces power consumption, and we are on track to support customers as they begin to introduce DDR5-enabled platforms in the second half of calendar year 2021. The enterprise market is driven by hybrid cloud growth as part of the ongoing digital transformation.

Graphics: CNBU sales to the graphics market in 2021 consisted primarily of GDDR6 graphics products. In late 2020, we started shipping GDDR6 DRAM products for next-generation gaming consoles and also introduced our GDDR6X graphics memory, which delivers unprecedented speed and bandwidth for high-performance graphics and computing. The graphics market is driven by the need for high-performance, high-bandwidth, and cost-effective memory solutions. Our GDDR6 and GDDR6X DRAM graphics products are incorporated into game consoles, PC graphics cards, and graphics processing unit-based data center solutions, which are the driving force behind applications such as artificial intelligence, virtual and augmented reality, 4K and 8K gaming, and professional design. Our GDDR6X products feature innovative signal transmission technology enabling the industry's fastest GDDR for compute and graphics workloads.

Networking: CNBU sales to the networking market in 2021 consisted primarily of DDR4 and DDR3 DRAM products. In 2021, demand was driven, in part, by increased 5G build-out in certain geographic locations to further support the growth of the advanced 5G networking infrastructure.

3D XPoint: CNBU sales of 3D XPoint memory consisted primarily of wafers sold to Intel.

Mobile Business Unit ("MBU")

MBU includes memory products sold into smartphone and other mobile-device markets and includes discrete NAND, DRAM, and managed NAND. MBU managed NAND includes embedded multi-media controller ("e.MMC") and universal flash storage ("UFS") solutions, each of which combine high-capacity NAND with a high-speed controller and firmware, and eMCP/uMCP products, which combine an e.MMC/UFS solution with LPDRAM. MBU reported revenue of $7.20 billion in 2021, $5.70 billion in 2020, and $6.40 billion in 2019. In the first quarter of 2021, we were the first to market with uMCP5, the industry's first UFS 3.1 multichip package with LPDDR5, which combines high-performance, high-density, and low-power memory and storage in one compact package, equipping smartphones to handle data-intensive 5G workloads with dramatically increased speed and power efficiency. In the second quarter of 2021, we began shipping 1α node-based LPDDR4x DRAM, which provides power-efficiency improvements ideal for preserving battery life in mobile phones with memory intensive use cases like smart photography. In 2021, we also began volume shipments of our 176-layer NAND UFS 3.1 mobile solution, which features improved performance, faster downloads, and smoother application response times, enabling 5G mobile experiences.

Smartphone: MBU sales to the smartphone market in 2021 consisted primarily of LPDDR4, LPDDR5, and managed NAND solutions. In 2021, we achieved record MCP revenue as we benefited from the growth in 5G-enabled smartphones. High-end smartphones incorporate higher levels of NAND and LPDRAM that enable features such as larger 4K displays, multiple high-resolution cameras, and 4K high-dynamic range video recording. Additionally, our smartphone products are utilized by OEMs to enable artificial intelligence, augmented reality, and life-like virtual reality capabilities into high-end phones, including facial and voice recognition, real-time translation, fast image search, and scene detection.

Other: MBU sales in 2021 also included products sold into the feature and disposable phone markets, mobile PC, and tablet markets. Sales primarily consisted of LPDDR4, uMCPs, and eMCPs.

Storage Business Unit ("SBU")

SBU includes SSDs and component-level solutions sold into enterprise and cloud, client, and consumer storage markets and discrete NAND sold in component and wafer forms for usage in various markets. SBU reported revenue of $3.97 billion in 2021, $3.77 billion in 2020, and $3.83 billion in 2019. In 2021, we began volume shipments of the world's first 176-layer 3D NAND flash memory. Based on our second-generation replacement-gate architecture, our 176-layer NAND is the industry's most advanced node in high-volume production. In 2021, we drove an increased mix of our QLC NAND technology. The low cost per bit of our NAND QLC technology enables us to offer SSD products at a price point that drives accelerated replacement of hard disk drives in a number of market segments. QLC SSD adoption continues to grow and the majority of our client SSD bits shipped in the fourth quarter of 2021 included NAND with our QLC technology.

<u>*SSDs*</u>: SSD storage products incorporate NAND, a controller, and firmware and offer significant performance and features over hard disk drives, including smaller form factors, faster read and write speeds, higher reliability, and lower power consumption. We offer SSD solutions utilizing our NAND technology to the enterprise and cloud, client, and consumer markets.

Enterprise and Cloud SSDs: SBU sales to the enterprise and cloud SSD markets in 2021 consisted primarily of our 5210, 5300, 7300, and 9300 series SSDs. In 2021, we enhanced our portfolio of NVMe SSDs and in the first quarter of 2022, we announced the availability of our PCIe Gen4 enterprise SSDs with Micron-designed controllers. The enterprise and cloud storage markets are driven by the growth of applications that store, access, and analyze data in the cloud. Applications such as artificial intelligence servers require fast access to data with low latency, predictable performance, and high storage capacities.

Client SSDs: SBU sales to the client SSD market in 2021 consisted primarily of our 2300 and 2210 series client SSDs. Our client SSDs, targeted for leading personal computer OEMs, have mostly replaced hard disk drives used in notebooks, desktops, workstations, and other consumer applications, and deliver high performance, power efficiency, security, and capacity. In 2021, we announced volume production of our first PCIe Gen4 SSDs, the Micron 2450 and 3400, built with our 176-layer NAND and available in a variety of form factors.

Consumer SSDs: SBU sales to the consumer SSD market in 2021 consisted primarily of our Crucial-branded MX500 and BX500 SATA SSDs and our P1, P2, P5, and P5 Plus PCIe SSDs, which utilize our NAND QLC and TLC technologies. We had record consumer SSD revenue in 2021, assisted by the growth of our QLC SSDs, and we continued to transition our product line of consumer SSDs from SATA to NVMe. In 2021, we began shipping 176-layer NAND based consumer SSDs and announced the availability of our Crucial P5 Plus PCIe SSDs as an expansion of our NVMe SSD portfolio to offer high-performance internal Gen4 storage options to consumers. We also expanded our consumer portable SSD portfolio by introducing the high-capacity 4TB and value-priced 500GB Crucial X6 external SSDs to offer consumers more options for external storage performance, capacity and value at any price point. Our consumer SSD solutions are replacing installed hard disk drives as end users and system builders/integrators seek the higher performance, power savings, and reliability of SSDs.

<u>*Components and Wafers*</u>: SBU sales of components in 2021 consisted primarily of our 96-layer and 176-layer TLC and QLC NAND products.

Embedded Business Unit ("EBU")

EBU includes memory and storage products sold into industrial, automotive, and consumer markets and includes discrete and module DRAM, discrete NAND, managed NAND, SSDs, and NOR. EBU reported revenue of $4.21 billion in 2021, $2.76 billion in 2020, and $3.14 billion in 2019. The embedded market has traditionally been characterized by long life-cycle DRAM and non-volatile products manufactured on mature process technologies. With strong trends of digitization, connectivity, and intelligence in every device, demand continues to grow for leading-edge products from newer process technologies emerging in the embedded market. Our embedded products enable edge devices to store, connect, and transform information in the internet of things ("IoT") market and are utilized in a diverse set of applications in the automotive, industrial, and consumer markets.

Industrial: EBU sales to the industrial market in 2021 consisted primarily of DDR4 and DDR3 DRAM, LPDDR4 DRAM, SLC NAND, NAND MCPs, and NOR. Our products enable applications in the growing industrial IoT market, including machine-to-machine communication, factory automation, transportation, surveillance, retail, and smart infrastructure.

Automotive: EBU sales to the automotive market in 2021 consisted primarily of LPDDR4 DRAM, e.MMC managed NAND, DDR3 DRAM, and LPDDR2 DRAM. In 2021, we began sampling the industry's first automotive-grade LPDDR5 that is hardware-evaluated to meet the most stringent Automotive Safety Integrity Level, ASIL D. We also began sampling the industry's first UFS 3.1 solution for automotive applications. Advancements in autonomous driving, advanced driver-assistance systems, and in-vehicle infotainment systems continue to increase the requirements for high-performing memory and storage products, with higher reliability requirements for leading-edge products. Automotive memory and storage products enable connected, advanced infotainment systems with increasingly larger and higher definition displays and support improved voice and gesture control. In addition, our products enable increasingly advanced vision and sensor based automated systems to support driver assistance solutions and vehicle safety. Our comprehensive and expanding portfolio of DRAM, NAND, and NOR solutions to the automotive market, as well as our extensive customer support network, enable us to maintain our strong leadership position in this market.

Consumer: EBU sales to the consumer market in 2021 consisted primarily of our LPDDR4 DRAM, DDR3 DRAM, and SLC NAND. These embedded memory and storage solutions are used in a diverse set of consumer products, including service provider and IP set-top boxes, digital home assistants, digital still and video cameras, home networking, ultra-high definition televisions, and many more applications. Our embedded memory and storage solutions enable edge devices in the consumer products market to store, connect, and transform information in the IoT.

Marketing and Customers

We seek to build collaborative relationships with our customers to understand their unique opportunities and challenges. By engaging with our customers early in the product life-cycle to identify and design features and performance characteristics into our products, we are able to manufacture products that anticipate and address our customers' changing needs. Collaborating with our customers on their design needs in changing end markets and meeting their timelines for qualifying new products, allows us to differentiate our memory and storage solutions, which provides greater value to our customers.

Our semiconductor memory and storage products are offered under our Micron and Crucial brand names and through private labels. We market our semiconductor memory and storage products primarily through our own direct sales force and maintain sales or representative offices to support our worldwide customer base. Our products are also offered through independent sales representatives, distributors, and retailers. Our independent sales representatives obtain orders, subject to final acceptance by us, and we then make shipments against these orders directly to customers or through our distributors. Our distributors carry our products in inventory and typically sell a variety of other semiconductor products, including competitors' products. We sell our Crucial-branded products through a web-based customer direct sales channel as well as through channel and distribution partners. We maintain inventory at locations in close proximity to certain key customers to facilitate rapid delivery of products.

Due to volatile industry conditions, our customers are generally reluctant to enter into long-term, fixed-price purchase contracts. We typically accept orders with acknowledgment that pricing, quantity, and other terms may be adjusted to reflect market conditions at the time of shipment.

In each of the last three years, approximately one-half of our total revenue was from our top ten customers. For other information regarding our concentrations and customers, see "Part II – Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Certain Concentrations."

Competitive Conditions

We face intense competition in the semiconductor memory and storage markets from a number of companies, including Intel; Kioxia Holdings Corporation (formerly Toshiba Memory Corporation); Samsung Electronics Co., Ltd.; SK hynix Inc.; and Western Digital Corporation. Some of our competitors are large corporations or conglomerates that may have greater resources to invest in technology, capitalize on growth opportunities, and withstand downturns in the semiconductor markets in which we compete. Consolidation of industry competitors could put us at a competitive disadvantage. We and our competitors generally seek to improve yields, reduce die size in product designs, or increase production capacity, which may result in significant increases in worldwide supply and downward pressure on prices. Increases in worldwide supply of semiconductor memory and storage also result from fabrication capacity expansions, either by way of new facilities, increased capacity utilization, or reallocation of other semiconductor production to semiconductor memory and storage production. Our competitors may increase capital expenditures resulting in future increases in worldwide supply. We, and some of our competitors, have plans to ramp, or are constructing or ramping, production at new fabrication facilities. If competitors are more successful at developing or implementing new product or process technology, their products could have cost or performance advantages. Certain of our memory and storage products are manufactured to industry standard specifications and, as such, have similar performance characteristics to those of our competitors. For these products, the principal competitive factors are generally price and performance characteristics including operating speed, power consumption, reliability, compatibility, size, and form factor. Some of our competitors may use aggressive pricing to obtain market share or take business of our key customers.

Some governments may provide, or have provided, and may continue to provide, significant assistance, financial or otherwise, to some of our competitors or to new entrants and may intervene in support of national industries and/or competitors. In particular, we face the threat of increasing competition as a result of significant investment in the semiconductor industry by the Chinese government and various state-owned or affiliated entities that is intended to advance China’s stated national policy objectives. In addition, the Chinese government may restrict us from participating in the China market or may prevent us from competing effectively with Chinese companies. Some of our competitors may benefit from policies and regulations that favor domestic companies or may not be subject to certain regulations or restrictions to which we are subject, which may allow them access to certain sales opportunities from which we may be restricted. In addition, our customers may redirect their business to our competitors based on government policy, national preference, or other factors.

Manufacturing

We manufacture our products within our own facilities located in Taiwan, Singapore, Japan, the United States, Malaysia, and China, and also utilize subcontractors to perform certain manufacturing processes. Our products are manufactured on 300mm wafers in facilities that generally operate 24 hours per day, seven days per week. Semiconductor manufacturing is extremely capital intensive, requiring large investments in sophisticated facilities and equipment. Our DRAM, NAND, and NOR products share a number of common manufacturing processes, enabling us to leverage our product and process technology and certain resources and manufacturing infrastructure across these product lines.

Our process for manufacturing semiconductor products is complex and involves numerous precise steps, including wafer fabrication, assembly, and test. Efficient production of semiconductor products requires utilization of advanced semiconductor manufacturing techniques and effectively deploying those techniques across multiple facilities. The primary determinants of manufacturing cost are process line-width, 3D non-volatile layers, NAND cell levels, process complexity (including the number of mask layers and fabrication steps), and manufacturing yield. Other factors include the cost and sophistication of manufacturing equipment, equipment utilization, cost of raw materials, labor productivity, package type, cleanliness of our manufacturing environment, and utilization of subcontractors to perform certain manufacturing processes. As we continue to increase our production of high value products and solutions, manufacturing costs are increasingly affected by the costs of application-specific integrated circuit (ASIC) controllers and other semiconductors, advanced and complex packaging configurations, and testing at progressively higher performance speeds and quality levels. We continuously enhance our production processes, increase bits per wafer, transition to higher density products, and utilize advanced testing and assembly processes.

Wafer fabrication occurs in a highly-controlled clean environment to minimize yield loss from contaminants. Despite stringent manufacturing controls, individual circuits may be nonfunctional or wafers may be scrapped due to equipment errors, minute impurities in materials, defects in photomasks, circuit design marginalities or defects, or contamination from airborne particles, among other factors. Success of our manufacturing operations depends largely on minimizing defects and improving process margin to maximize yield of high-quality circuits. In this regard, we employ rigorous quality controls throughout the manufacturing, screening, and testing processes. We continue to heighten quality control as our product offerings expand into higher-end segments that require increasing performance targets.

Our products are manufactured and sold in both packaged form and as unpackaged bare die. Our packaged products include packaged die, memory modules, and system-level solutions, such as SSDs, managed NAND, and MCPs. We assemble many products in-house and, in some cases, outsource assembly services for certain packaged die, memory modules, SSDs, and MCPs. We test our products at various stages in the manufacturing process, conduct numerous quality control inspections throughout the entire production flow, and perform high temperature burn-in on finished products. In addition, we use our proprietary AMBYX™ line of intelligent test and burn-in systems to perform simultaneous circuit tests of semiconductor die, capturing quality and reliability data and reducing testing time and cost.

In recent years, we have produced an increasingly broad portfolio of products and system solutions, which enhances our ability to allocate resources to our most profitable products but also increases the complexity of our manufacturing and supply chain operations. Although our product lines generally use similar manufacturing processes, our costs can be affected by frequent conversions to new products; the allocation of manufacturing capacity to more complex, smaller-volume products; and the reallocation of manufacturing capacity across various product lines.

Resources

Supply Chain, Materials, and Third-Party Service Providers

Our supply chain and operations are dependent on the availability of materials that meet exacting standards and the use of third parties to provide us with components and services. We generally have multiple sources of supply for our materials and services. However, only a limited number of suppliers are capable of delivering certain materials and services that meet our standards and, in some cases, materials, components, or services are provided by a single or sole source. Various factors could impact the availability of materials or components such as chemicals, silicon wafers, gases, photoresist, controllers, substrates, lead frames, printed circuit boards, targets, and reticle glass blanks. Shortages or increases in lead times have occurred in the past, are currently occurring with respect to some materials and components, and may occur from time to time in the future.

Our manufacturing processes are also dependent on our relationships with third-party manufacturers of controllers, analog integrated circuits, and other components used in some of our products and with outsourced semiconductor foundries, assembly and test providers, contract manufacturers, logistic carriers, and other service providers. Although we have certain long-term contracts with some of our suppliers, many of these contracts do not provide for long-term capacity commitments. To the extent we do not have firm commitments from our third-party suppliers over a specific time period or for any specific capacity and/or quantity, our suppliers may allocate capacity to their other customers and capacity and/or materials may not be available when we need it or at reasonable prices. Inflationary pressures and shortages may increase costs for materials, supplies, and services. Regardless of contract structure, large swings in demand may exceed our contracted supply and/or our suppliers' capacity to meet those demand changes in the required timeframe resulting in a shortage of parts, materials, or capacity needed to manufacture our products.

Trade disputes or other political conditions, economic conditions, or public health issues, such as COVID-19, may limit our ability to obtain materials necessary to produce Micron products. Certain materials are primarily available in a limited number of countries, including rare earth elements, minerals, and metals available primarily from China. Although these rare earth and other materials are generally available from multiple suppliers, China is the predominant producer of certain of these materials. If China were to restrict or stop exporting these materials, our suppliers' ability to obtain such supply may be constrained and we may be unable to obtain sufficient quantities, or obtain supply in a timely manner, or at a commercially reasonable cost. Constrained supply of rare earth elements, minerals, and metals may restrict our ability to manufacture certain of our products and make it difficult or impossible to compete with other semiconductor memory manufacturers who are able to obtain sufficient quantities of these materials from China.

Patents and Licenses

As of September 2, 2021, we owned approximately 15,400 active U.S. patents and 7,300 active foreign patents. In addition, we have thousands of U.S. and foreign patent applications pending. Our patents have various terms expiring through 2041.

From time to time, we sell and/or license our technology to other parties and continue to pursue opportunities to monetize our investments in our intellectual property through partnering and other arrangements. We have also jointly developed memory and storage product and process technology with third parties on a limited basis.

We have a number of patent and intellectual property license agreements and have, from time to time, licensed or sold our intellectual property to third parties. Some of these license agreements require us to make one-time or periodic payments while others have resulted in us receiving payments. We may need to obtain additional licenses or renew existing license agreements in the future, and we may enter into additional sales or licenses of intellectual property and partnering arrangements. We are unable to predict whether these license agreements can be obtained or renewed on terms acceptable to us.

Research and Development

Our R&D efforts are focused primarily on development of industry leading memory and storage solutions that enable continuous improvement in performance and cost structure for our products. We are focused on developing new fundamentally different memory structures, materials, and packages designed to facilitate our transition to next generation products. Additional R&D efforts focus on the enablement of advanced computing, storage, and mobile memory architectures and the investigation of new opportunities that leverage our core semiconductor expertise. Product design and development efforts include high-density DDR4, DDR5, LPDDR4, LPDDR5, High Bandwidth Memory, Compute Express Link (CXL) based products, and advanced graphics DRAM; 3D NAND (including TLC and QLC technologies); mobile and storage solutions (including firmware and controllers); managed NAND; SSDs; and other memory technologies and systems.

To compete in the semiconductor memory and storage markets, we must continue to develop technologically advanced products and processes. The continued evolution of our semiconductor product offerings is necessary to meet expected customer requirements for memory and storage products and solutions. Our process, design, firmware, controller, package, and system development efforts occur at multiple locations across the world. Our primary R&D centers are located in Boise, Idaho; Singapore; Japan; Taiwan; Italy; China; India; Germany; and other sites in the United States.

R&D expenses vary primarily with the number of development and pre-qualification wafers processed and end-product solutions developed, personnel costs, and the cost of advanced equipment dedicated to new product and process development, such as investments in EUV lithography equipment. Because of the lead times necessary to manufacture our products, we typically begin to process wafers before completion of performance and reliability testing. Development of a product is deemed complete when it is qualified through internal reviews and tests for performance, functionality, and reliability. R&D expenses can vary significantly depending on the timing of product qualification.

Human Capital

We depend on a highly educated and experienced workforce to design, develop, and manufacture high-quality, cutting-edge memory and storage solutions. As of September 2, 2021, we had approximately 43,000 employees located in the following regions:

Region	Percent	Percent Women
Asia	74 %	34 %
United States	24 %	19 %
Europe	2 %	21 %
Total	100 %	30 %

As of September 2, 2021, 30% of our global workforce were women, compared to 29% as of September 3, 2020. 23% of our technical or engineering roles were held by women, as compared to 21% on September 3, 2020. Women comprised 15% of our senior leaders as of September 2, 2021, as compared to 13% as of September 3, 2020.

In 2021, we added one female director to our Board of Directors, resulting in a Board of Directors that is comprised of four men and four women as of September 2, 2021, compared to five men and three women as of September 3, 2020. In addition, as of September 2, 2021, based on self-identification, one member of our Board of Directors is Asian, one member is African-American, and six members are White. One member of our Board of Directors is a veteran of the U.S. military.

Talent Acquisition, Engagement, and Retention

Finding and retaining the best and brightest people in an extremely competitive industry environment is a strategic imperative for our business. We have partnerships with colleges and universities worldwide and through this collaboration, we offer curricula and mentorship programs that reinforce awareness of and engagement with Micron among students and graduates. In addition, we use artificial intelligence to reduce or eliminate the potential for bias from resumes, allowing us to focus on individual merit over personal characteristics.

Periodically, we invite all team members to participate in our internal engagement survey, which covers questions that measure and provide insight into leadership and inclusive behaviors. In April 2021, 88% of our team members participated in the survey. Management uses feedback from the survey to identify and implement continuous improvements to our culture and workplace practices.

Compensation and Benefits

Our compensation programs are designed to support our team members’ financial and personal well-being by providing a valuable return for their contributions to the company. Our total compensation strategy includes base salary, annual bonuses, equity awards, a discounted stock purchase plan, and a comprehensive benefits package.

Diversity, Equality & Inclusion

We have made powerful commitments in 2021 to hold ourselves even more accountable for progress towards diversity, equality, and inclusion (DEI), by setting six global DEI commitments:

- Increase representation of underrepresented groups
- Drive equitable pay and inclusive benefits
- Strengthen our culture of inclusion
- Advocate for racial and LGBTQ+ equality
- Engage with minority-owned financial institutions for cash management
- Increase representation and spend with diverse suppliers

We have a regular review of pay globally, including base pay and stock awards, to drive compensation equitability. In 2021, we achieved comprehensive global pay equity for all employees in total compensation across base, bonuses, and stock rewards. In addition, a portion of our company-wide annual bonus program is based on the achievement of DEI-related goals.

Health, Safety, and Wellness

Proactive efforts to prevent occupational illnesses and injuries allow us to maintain a safe, healthy, and secure workplace. Each of our sites have health and safety committees, which are designed to promote overall operations and communications regarding safety and to help lead and implement secure and compliant work areas. Our safety program creates a unified corporate safety culture by establishing a formal training structure and common safety practices across our global facilities.

In addition to our proactive efforts on safety, we have increased our focus on providing enhanced services to our team members including free mental health and counseling support, providing critical-incident stress management services and emotional support sessions, launching a work-from-home toolkit, and encouraging team members to earn incentives by participating in well-being challenges and measuring their personal progress.

In response to the COVID-19 pandemic, we went well beyond local, state, and federal requirements. With COVID-19 vaccines now available, we have launched a task force to monitor vaccine availability for team members, provided on-site vaccinations where available, provided monetary incentives, and, for U.S. team members, required vaccinations to improve vaccination rates. See "Item 1. Business – Overview – Impact of COVID-19 on Our Business."

We are a member of the Responsible Business Alliance (RBA), a group of leading companies focused on promoting responsible working conditions, ethical business practices, and environmental stewardship throughout our global supply chain. We strive to adhere to both our Code of Business Conduct and Ethics (available on our website) and the RBA code of conduct, which is a demonstration of our commitment to integrity and responsible practices.

Government Regulations

Our worldwide business activities are subject to various federal, state, local, and foreign laws and our products are governed by a number of rules and regulations. Compliance with these laws, rules, and regulations are presently not material to our results of operations, capital expenditures, or competitive position. Nevertheless, compliance with existing or future government laws, including, but not limited to, our operations, products, global trade, business acquisitions, employee health and safety, and taxes could have a material adverse effect on our future results of operations, capital expenditures, or competitive position. See "Item 1A. Risk Factors" for a discussion of these potential impacts.

Environmental Compliance

We approach environmental stewardship and sustainability proactively to ensure we meet all government regulations regarding use of raw materials, discharges, climate change and energy use, emissions, and wastes from our manufacturing processes and address the evolving expectations of our investors, customers, team members, and other stakeholders. Compliance with the law and other compliance obligations is considered a minimum environmental expectation at Micron. Our wafer fabrication facilities continued to conform to the requirements of the International Organization for Standardization ("ISO") 14001 environmental management systems standard to ensure we are continuously improving our performance. As part of the ISO 14001 framework, we have established a global environmental policy and meet requirements in terms of environmental aspects evaluation and control, compliance obligations, commitment, training, communication, control of documented information, operational control, emergency preparedness and response, and management review. While we have not experienced any material adverse effects to our operations from environmental regulations, changes in regulations could necessitate additional capital expenditures, modification of our operations, or other compliance actions.

Trade Regulations

Sales of our memory and storage products, and the transfer of related technical information and know-how, including support, are subject to laws and regulations governing international trade, including, but not limited to, export control, customs, and sanctions regulations administered by U.S. government agencies such as the Bureau of Industry and Security ("BIS") of the U.S. Department of Commerce and the Office of Foreign Asset Control of the U.S. Department of the Treasury. Other jurisdictions, such as the European Union or China, also maintain, or may implement, similar laws and regulations with which we must comply. Any such laws or regulations may require that we either obtain licenses or other authorizations to export certain of our products or sell them to certain countries, companies, or individuals, or, in the absence of such licenses or authorizations, not export or sell the applicable products or transfer the related technical information and know-how to the affected countries, companies, or individuals. In addition, increased tariffs imposed by the countries in which our products are sold can increase the cost of our product to our customers. The laws and regulations that govern international trade change frequently, sometimes without advance notice. See "Item 1A. Risk Factors – Risks Related to Laws and Regulations – Trade regulations have restricted our ability to sell our products to several customers, could restrict our ability to sell our products to other customers or in certain markets, or could otherwise restrict our ability to conduct operations" and " – Risks Related to Our Business, Operations, and Industry – We face geopolitical and other risks associated with our international sales and operations that could materially adversely affect our business, results of operations, or financial condition."

We and/or our suppliers and service providers could be affected by tariffs, embargoes, or other trade restrictions, as well as laws and regulations enacted in response to concerns regarding climate change, conflict minerals, responsible sourcing practices, public health crises, contagious disease outbreaks, or other matters, which could limit the supply of our materials and/or increase the cost. Environmental regulations could limit our ability to procure or use certain chemicals or materials in our operations or products. In addition, disruptions in transportation lines could delay our receipt of materials. Lead times for the supply of materials have been extended in the past. Our ability to procure components to repair equipment essential for our manufacturing processes could also be negatively impacted by various restrictions or disruptions in supply chains, among other items. The disruption of our supply of materials, components, or services, or the extension of our lead times could have a material adverse effect on our business, results of operations, or financial condition. Similarly, if our customers experience disruptions to their supplies, materials, components, or services, or the extension of their lead times, they may reduce, cancel, or alter the timing of their purchases with us, which could have a material adverse effect on our business, results of operations, or financial condition.

Information About Our Executive Officers

Our executive officers are appointed annually by our Board of Directors and our directors are elected annually by our shareholders. All officers serve until their successors are duly chosen or elected and qualified, except in the case of earlier death, resignation, or removal.

The following presents information, as of September 2, 2021, about our executive officers:

Scott R. Allen

Corporate Vice President and Chief Accounting Officer

Mr. Allen, 53, joined us in September 2020 as Corporate Vice President of Accounting. Mr. Allen was named Corporate Vice President and Chief Accounting Officer in October 2020. From August 2016 to September 2020, Mr. Allen held several executive roles at NetApp,Inc. including Senior Vice President, Chief Accounting Officer. Mr. Allen holds a Bachelor of Business Administration in Accounting from Siena College.

April S. Arnzen

Senior Vice President and Chief People Officer

Ms. Arnzen, 50, joined us in December 1996 and has served in various leadership positions since that time. Ms. Arnzen was named Senior Vice President, Human Resources in June 2017 and named Senior Vice President and Chief People Officer in October 2020. Ms. Arnzen holds a BS in Human Resource Management and Marketing from the University of Idaho and is a graduate of the Stanford Graduate School of Business Executive Program.

Manish Bhatia

Executive Vice President, Global Operations

Mr. Bhatia, 49, joined us in October 2017 as our Executive Vice President, Global Operations. From May 2016 to October 2017, Mr. Bhatia served as the Executive Vice President of Silicon Operations at Western Digital Corporation. From March 2010 to May 2016, Mr. Bhatia held several executive roles at SanDisk Corporation including Executive Vice President of Worldwide Operations until it was acquired by Western Digital in May 2016. Mr. Bhatia holds a BS and MS in Mechanical Engineering and an MBA, each from the Massachusetts Institute of Technology.

Michael W. Bokan

Senior Vice President, Worldwide Sales

Mr. Bokan, 60, joined us in 1996 and has served in various leadership positions since that time. Mr. Bokan was named Senior Vice President, Worldwide Sales in October 2018. Mr. Bokan holds a BS in Business Administration from Colorado State University.

Scott J. DeBoer

Executive Vice President, Technology & Products

Dr. DeBoer, 55, joined us in February 1995 and has served in various leadership positions since that time. Dr. DeBoer was named Executive Vice President, Technology Development in June 2017 and named Executive Vice President, Technology & Products in September 2019. Dr. DeBoer holds a PhD in Electrical Engineering and an MS in Physics from Iowa State University. He completed his undergraduate degree at Hastings College.

Sanjay Mehrotra

President, Chief Executive Officer, and Director

Mr. Mehrotra, 63, joined us in May 2017 as our President, Chief Executive Officer, and Director. Mr. Mehrotra co-founded and led SanDisk Corporation as a start-up in 1988 until its eventual sale in May 2016, serving as its President and Chief Executive Officer from January 2011 to May 2016, and as a member of its Board of Directors from July 2010 to May 2016. Mr. Mehrotra served as a member of the Board of Directors for Cavium, Inc. from July 2009 until July 2018 and for Western Digital Corp. from May 2016 to February 2017 and currently serves as a member of the Board of Directors of CDW Corporation. Mr. Mehrotra holds a BS and an MS in Electrical Engineering and Computer Science from the University of California, Berkeley and is a graduate of the Stanford Graduate School of Business Executive Program.

Joel L. Poppen

Senior Vice President, Legal Affairs, General Counsel, and Corporate Secretary

Mr. Poppen, 57, joined us in October 1995 and has held various leadership positions since that time. Mr. Poppen was named Vice President, Legal Affairs, General Counsel, and Corporate Secretary in December 2013 and named Senior Vice President, Legal Affairs, General Counsel, and Corporate Secretary in June 2017. Mr. Poppen holds a BS in Electrical Engineering from the University of Illinois and a JD from the Duke University School of Law.

Sumit Sadana

Executive Vice President and Chief Business Officer

Mr. Sadana, 52, joined us in June 2017 as our Executive Vice President and Chief Business Officer. From April 2010 to May 2016, Mr. Sadana served in various roles at SanDisk Corporation, including Executive Vice President, Chief Strategy Officer, and General Manager, Enterprise Solutions until it was acquired by Western Digital in May 2016. Mr. Sadana currently serves on the Board of Directors of Silicon Laboratories, Inc. Mr. Sadana holds a B.Tech. in Electrical Engineering from the Indian Institute of Technology, Kharagpur, India and an MS in Electrical Engineering from Stanford University.

David A. Zinsner

Senior Vice President and Chief Financial Officer

Mr. Zinsner, 52, joined us in February 2018 as our Senior Vice President and Chief Financial Officer. From April 2017 to February 2018, Mr. Zinsner served as the President and Chief Operating Officer of Affirmed Networks. From January 2009 to April 2017, Mr. Zinsner served as the Senior Vice President of Finance and Chief Financial Officer of Analog Devices. From July 2005 to January 2009, Mr. Zinsner served as the Senior Vice President and Chief Financial Officer of Intersil Corporation. Mr. Zinsner holds an MBA, Finance and Accounting from Vanderbilt University and a BS in Industrial Management from Carnegie Mellon University.

There are no family relationships between any of our directors or executive officers.

Available Information

Our executive offices are located at 8000 South Federal Way, Boise, Idaho 83716-9632 and our telephone number is (208) 368-4000. Information about us is available at our website, www.micron.com. Also available on our website are our Corporate Governance Guidelines, Governance and Sustainability Committee Charter, Compensation Committee Charter, Audit Committee Charter, Finance Committee Charter, Security Committee Charter, and Code of Business Conduct and Ethics. Any amendments or waivers of our Code of Business Conduct and Ethics will also be posted on our website within four business days of the amendment or waiver. Copies of these documents are available to shareholders upon request. Information contained or referenced on our website is not incorporated by reference and does not form a part of this Annual Report on Form 10-K.

Investors and others should note that we announce material financial information about our business and products through a variety of means, including our investor relations website (investors.micron.com), filings with the U.S. Securities and Exchange Commission ("SEC"), press releases, public conference calls, and webcasts. We use these channels to achieve broad, non-exclusionary distribution of information to the public and for complying with our disclosure obligations under Regulation FD. Therefore, we encourage investors, the media, and others interested in our company to review the information we post on such channels.

Our filings are available free of charge on our website as soon as reasonably practicable after they are electronically filed with, or furnished to, the SEC, including our annual and quarterly reports on Forms 10-K and 10-Q and current reports on Form 8-K, our proxy statements, and any amendments to those reports or statements. The SEC's website, www.sec.gov, contains reports, proxy and information statements, and other information regarding issuers that file electronically with the SEC. The content on any website referred to in this Form 10-K is not incorporated by reference in this Form 10-K unless expressly noted.

ITEM 1A. RISK FACTORS

In addition to the factors discussed elsewhere in this Form 10-K, this section discusses important factors which could cause actual results or events to differ materially from those contained in any forward-looking statements made by us. The order of presentation is not necessarily indicative of the level of risk that each factor poses to us. Any of these factors could have a material adverse effect on our business, results of operations, financial condition, or stock price. Our operations could also be affected by other factors that are presently unknown to us or not considered significant.

Risk Factor Summary

Risks Related to Our Business, Operations, and Industry

- the effects of the COVID-19 pandemic;
- volatility in average selling prices of our products;
- our ability to maintain or improve gross margins;
- the highly competitive nature of our industry;
- our ability to develop and produce new and competitive memory and storage technologies, products, and markets;
- dependency on specific customers, concentration of revenue with a select number of customers, and customers who are located internationally;
- our international operations, including geopolitical risks;
- limited availability and quality of materials, supplies, and capital equipment and dependency on third-party service providers for ourselves and our customers;
- products that fail to meet specifications, are defective, or are incompatible with end uses;
- disruptions to our manufacturing operations from natural disasters or other events;
- breaches of our security systems or those of our customers, suppliers, or business partners;
- attracting, retaining, and motivating highly skilled employees;
- achieving or maintaining certain performance obligations associated with incentives from various governments;
- future acquisitions and/or alliances;
- restructure charges;
- customer responsible sourcing requirements and related regulations; and
- a downturn in the worldwide economy.

Risks Related to Intellectual Property and Litigation

- protecting our intellectual property and retaining key employees who are knowledgeable of and develop our intellectual property;
- legal proceedings and claims;
- allegations of anticompetitive conduct;
- risks associated with our former IMFT joint venture with Intel;
- claims that our products or manufacturing processes infringe or otherwise violate the intellectual property rights of others or failure to obtain or renew license agreements covering such intellectual property; and
- alleged patent infringement complaints in Chinese courts.

Risks Related to Laws and Regulations

- compliance with tariffs, trade restrictions, and/or trade regulations;
- tax expense and tax laws in key jurisdictions; and
- compliance with laws, regulations, or industry standards.

Risks Related to Capitalization and Financial Markets

- our ability to generate sufficient cash flows or obtain access to external financing;
- our debt obligations;
- changes in foreign currency exchange rates;
- counterparty default risk;
- volatility in the trading price of our common stock; and
- fluctuations in the amount and timing of our common stock repurchases and payment of cash dividends and resulting impacts.

Risks Related to Our Business, Operations, and Industry

The effects of the COVID-19 pandemic could adversely affect our business, results of operations, and financial condition.

The effects of the public health crisis caused by the COVID-19 pandemic and the measures being taken to limit COVID-19's spread are uncertain and difficult to predict, but may include, and in some cases, have included and may continue to include:

- A decrease in short-term and/or long-term demand and/or pricing for our products and global economic volatility that could reduce demand and/or pricing for our products, resulting from the spread of COVID-19 and/or the actions taken by governments, businesses, and/or the general public in an effort to limit exposure to and the spread of COVID-19, such as travel restrictions, quarantines, and business shutdowns or slowdowns;
- Negative impacts to our operations, including:
  - reductions in production levels, R&D activities, product development, technology transitions, yield enhancement activities, and qualification activities with our customers, resulting from our efforts to mitigate the impact of COVID-19 through measures we have enacted at our locations around the world in an effort to protect our employees' and contractors' health and well-being, including working from home, limiting the number of meeting attendees, reducing the number of people in certain of our sites at any one time, quarantines of team members, contractors, or vendors who are at risk of contracting, or have contracted, COVID-19, and limiting employee travel;
  - increased costs resulting from our efforts to mitigate the impact of COVID-19 through physical-distancing measures, working from home, upgrades to our sites, COVID-19 testing and vaccination, enhanced cleaning measures, and the increased use of personal protective equipment at our sites;
  - increased costs, business disruptions, attrition, and/or reduced employee morale resulting from our mandate that all U.S. employees and, in addition, contractors that enter our U.S. buildings and certain other locations, be fully vaccinated against COVID-19, subject to disability and religious exemptions, by November 15, 2021, as a condition of working for us;
  - increased costs for, or unavailability of, transportation, raw materials, components, electricity and/or other energy sources, or other inputs necessary for the operation of our business;
  - reductions in, or cessation of operations at any site or in any jurisdiction resulting from government restrictions on movement and/or business operations or our measures to prevent and/or mitigate the spread of COVID-19 at one or more of our sites, such as we have experienced at some of our facilities from time to time since the start of the COVID-19 pandemic;
  - our inability to continue, or increased costs of, construction projects due to delays in obtaining materials, equipment, labor, engineering services, government permits, or any other essential aspect of projects, which could impact our ability to introduce new technologies, reduce costs, or meet customer demand; and
  - disruptions to our supply chain in connection with the sourcing and transportation of materials, components, equipment and engineering support, and services from or in geographic areas that have been impacted by COVID-19, by efforts to contain the spread of COVID-19, or by follow-on effects on the worldwide supply chain;

- Deterioration of worldwide credit and financial markets that could: limit our ability to obtain external financing to fund our operations and capital expenditures; result in losses on our holdings of cash and investments due to failures of financial institutions and other parties; or result in a higher rate of losses on our accounts receivable due to credit defaults.

While several COVID-19 vaccines have been approved and are available for use in the United States and certain other countries, we are unable to predict how widely utilized the vaccines ultimately will be, whether they will be effective in preventing the symptoms and spread of COVID-19 (including its variant strains), and when or if normal economic activity and business operations will resume.

These effects, alone or taken together, could have a material adverse effect on our business, results of operations, or financial condition. The continuation of the pandemic or expanded or recurring outbreaks could exacerbate the adverse impact of such measures.

Volatility in average selling prices for our semiconductor memory and storage products may adversely affect our business.

We have experienced significant volatility in our average selling prices, including dramatic declines as noted in the table below, and may continue to experience such volatility in the future. In some prior periods, average selling prices for our products have been below our manufacturing costs and we may experience such circumstances in the future. Average selling prices for our products that decline faster than our costs could have a material adverse effect on our business, results of operations, or financial condition.

	DRAM	NAND
	(percentage change in average selling prices)	
2021 from 2020	8 %	(12)%
2020 from 2019	(34)%	(9)%
2019 from 2018	(30)%	(47)%
2018 from 2017	36 %	(13)%
2017 from 2016	18 %	(10)%

We may be unable to maintain or improve gross margins.

Our gross margins are dependent, in part, upon continuing decreases in per gigabit manufacturing costs achieved through improvements in our manufacturing processes and product designs, including, but not limited to, process line-width, additional 3D memory layers, additional bits per cell (i.e., cell levels), architecture, number of mask layers, number of fabrication steps, and yield. In future periods, we may be unable to reduce our per gigabit manufacturing costs at sufficient levels to maintain or improve gross margins. Factors that may limit our ability to maintain or reduce costs include, but are not limited to, strategic product diversification decisions affecting product mix, the increasing complexity of manufacturing processes, difficulties in transitioning to smaller line-width process technologies or additional 3D memory layers or NAND cell levels, process complexity including number of mask layers and fabrication steps, manufacturing yield, technological barriers, changes in process technologies, new products that may require relatively larger die sizes, and start-up or other costs associated with capacity expansion.

Many factors may result in a reduction of our output or a delay in ramping production, which could lead to underutilization of our production assets. These factors may include, among others, a weak demand environment, industry oversupply, inventory surpluses, difficulties in ramping emerging technologies, declining selling prices, and changes in supply agreements. A significant portion of our manufacturing costs are fixed and do not vary proportionally with changes in production output. As a result, lower utilization and corresponding increases in our per gigabit manufacturing costs may adversely affect our gross margins, business, results of operations, or financial condition.

In addition, per gigabit manufacturing costs may also be affected by a broader product portfolio, which may have smaller production quantities and shorter product lifecycles. Our business and the markets we serve are subject to rapid technological changes and material fluctuations in demand based on end-user preferences. As a result, we may have work in process or finished goods inventories that could become obsolete or in amounts that are in excess of our customers' demand. Consequently, we may incur charges in connection with obsolete or excess inventories. In addition, due to the customized nature of certain of the products we manufacture, we may be unable to sell certain finished goods inventories to alternative customers or manufacture in-process inventory to different specifications, which may result in excess and obsolescence charges in future periods. Our inability to maintain or improve gross margins could have a material adverse effect on our business, results of operations, or financial condition.

The semiconductor memory and storage markets are highly competitive.

We face intense competition in the semiconductor memory and storage markets from a number of companies, including Intel; Samsung Electronics Co., Ltd.; SK hynix Inc.; Kioxia Holdings Corporation; and Western Digital Corporation. Some of our competitors are large corporations or conglomerates that may have greater resources to invest in technology, capitalize on growth opportunities, and withstand downturns in the semiconductor markets in which we compete. Consolidation of industry competitors could put us at a competitive disadvantage as our competitors may benefit from increased manufacturing scale and a stronger product portfolio. In addition, some governments may provide, or have provided and may continue to provide, significant assistance, financial or otherwise, to some of our competitors or to new entrants and may intervene in support of national industries and/or competitors. In particular, we face the threat of increasing competition as a result of significant investment in the semiconductor industry by the Chinese government and various state-owned or affiliated entities that is intended to advance China's stated national policy objectives. In addition, the Chinese government may restrict us from participating in the China market or may prevent us from competing effectively with Chinese companies. Some of our competitors may use aggressive pricing to obtain market share or take business of our key customers.

We and our competitors generally seek to increase wafer capacity, improve yields, and reduce die size in their product designs which may result in significant increases in worldwide supply and downward pressure on prices. Increases in worldwide supply of semiconductor memory and storage also result from fabrication capacity expansions, either by way of new facilities, increased capacity utilization, or reallocation of other semiconductor production to semiconductor memory and storage production. Our competitors may increase capital expenditures resulting in future increases in worldwide supply. We, and some of our competitors, have plans to ramp, or are constructing or ramping, production at new fabrication facilities. Increases in worldwide supply of semiconductor memory and storage, if not accompanied by commensurate increases in demand, could lead to declines in average selling prices for our products and could materially adversely affect our business, results of operations, or financial condition. If competitors are more successful at developing or implementing new product or process technology, their products could have cost or performance advantages.

The competitive nature of our industry could have a material adverse effect on our business, results of operations, or financial condition.

Our future success depends on our ability to develop and produce competitive new memory and storage technologies.

Our key semiconductor memory and storage products and technologies face technological barriers to continue to meet long-term customer needs. These barriers include potential limitations on stacking additional 3D memory layers, increasing bits per cell (i.e., cell levels), meeting higher density requirements, and improving power consumption and reliability. We may face technological barriers to continue to shrink our products at our current or historical rate, which has generally reduced per-unit cost. We have invested and expect to continue to invest in R&D for new and existing products and process technologies, such as EUV lithography, to continue to deliver advanced product requirements. Such new technologies can add complexity and risk to our schedule and may affect our costs and production output. We may be unable to recover our investment in R&D or otherwise realize the economic benefits of reducing die size or increasing memory and storage densities. Our competitors are working to develop new memory and storage technologies that may offer performance and/or cost advantages to existing technologies and render existing technologies obsolete. Accordingly, our future success may depend on our ability to develop and produce viable and competitive new memory and storage technologies. There can be no assurance of the following:

- that we will be successful in developing competitive new semiconductor memory and storage technologies;
- that we will be able to cost-effectively manufacture new products;
- that we will be able to successfully market these technologies; and
- that margins generated from sales of these products will allow us to recover costs of development efforts.

We develop and produce advanced memory and storage technologies and there can be no assurance that our efforts to develop and market new product technologies will be successful. Unsuccessful efforts to develop new memory and storage technologies could have a material adverse effect on our business, results of operations, or financial condition.

A significant portion of our revenue is concentrated with a select number of customers.

In each of the last three years, approximately one-half of our total revenue was from our top ten customers. A disruption in our relationship with any of these customers could adversely affect our business. We could experience fluctuations in our customer base or the mix of revenue by customer as markets and strategies evolve. Our customers' demand for our products may fluctuate due to factors beyond our control. In addition, any consolidation of our customers could reduce the number of customers to whom our products may be sold. Our inability to meet our customers' requirements or to qualify our products with them could adversely impact our revenue. A meaningful change in the inventory strategy of our customers, particularly those in China, could impact our industry bit demand growth outlook. The loss of, or restrictions on our ability to sell to, one or more of our major customers, such as occurred with our former customer, Huawei Technologies, Co. Ltd. ("Huawei"), or any significant reduction in orders from, or a shift in product mix by, customers could have a material adverse effect on our business, results of operations, or financial condition.

We face geopolitical and other risks associated with our international sales and operations that could materially adversely affect our business, results of operations, or financial condition.

In 2021, 56% of our revenue was from sales to customers who have headquarters located outside the United States. We ship our products to the locations specified by our customers. Customers with global supply chains and operations may request we deliver products to countries where they own or operate production facilities or to countries where they utilize third-party subcontractors or warehouses. As a result, 89% of our revenue in 2021 was from products shipped to customer locations outside the United States.

A substantial portion of our operations are conducted in Taiwan, Singapore, Japan, Malaysia, China, and India, and many of our customers, suppliers, and vendors also operate internationally. Our operations, and the global supply chain of the technology industry, are subject to a number of risks, including the effects of actions and policies of various governments across our global operations and supply chain. For example, political, economic, or other actions from China could impact Taiwan and its economy, and may adversely affect our operations in Taiwan, our customers, and the technology industry supply chain. In addition, the U.S. government has in the past restricted American firms from selling products and software to certain of our customers and may in the future impose similar bans or other restrictions on sales to one or more of our significant customers. These restrictions may not prohibit our competitors from selling similar products to our customers, which may result in our loss of sales and market share. Even when such restrictions are lifted, financial or other penalties or continuing export restrictions imposed with respect to our customers could have a continuing negative impact on our future revenue and results of operations, and we may not be able to recover any customers or market share we lose while complying with such restrictions.

Our international sales and operations are subject to a variety of risks, including:

- export and import duties, changes to import and export regulations, customs regulations and processes, and restrictions on the transfer of funds, including currency controls in China, which could negatively affect the amount and timing of payments from certain of our customers and, as a result, our cash flows;
- imposition of bans on sales of goods or services to one or more of our significant foreign customers;
- public health issues (for example, an outbreak of a contagious disease such as COVID-19, Severe Acute Respiratory Syndrome ("SARS-CoV"), avian and swine influenza, measles, or Ebola);
- compliance with U.S. and international laws involving international operations, including the Foreign Corrupt Practices Act of 1977, as amended, export and import laws, and similar rules and regulations;
- theft of intellectual property;
- political and economic instability, including the effects of disputes between China and Taiwan;
- government actions or civil unrest preventing the flow of products, including delays in shipping and obtaining products, cancellation of orders, or loss or damage of products;
- problems with the transportation or delivery of products;
- issues arising from cultural or language differences and labor unrest;

- longer payment cycles and greater difficulty in collecting accounts receivable;
- compliance with trade, technical standards, and other laws in a variety of jurisdictions;
- contractual and regulatory limitations on the ability to maintain flexibility with staffing levels;
- disruptions to manufacturing or R&D activities as a result of actions imposed by foreign governments;
- changes in economic policies of foreign governments; and
- difficulties in staffing and managing international operations.

If we or our customers, suppliers, or vendors are impacted by any of these risks, it could have a material adverse effect on our business, results of operations, or financial condition.

Our business, results of operations, or financial condition could be adversely affected by the limited availability and quality of materials, supplies, and capital equipment, or dependency on third-party service providers.

Our supply chain and operations are dependent on the availability of materials that meet exacting standards and the use of third parties to provide us with components and services. We generally have multiple sources of supply for our materials and services. However, only a limited number of suppliers are capable of delivering certain materials and services that meet our standards and, in some cases, materials, components, or services are provided by a single or sole source. Various factors could impact the availability of materials or components such as chemicals, silicon wafers, gases, photoresist, controllers, substrates, lead frames, printed circuit boards, targets, and reticle glass blanks. Shortages or increases in lead times have occurred in the past, are currently occurring with respect to some materials and components, and may occur from time to time in the future. As a result, we expect that constraints within our supply chain for certain IC components may somewhat limit our bit shipments in the near term, which could have a material adverse effect on our business, results of operations, or financial condition.

Our manufacturing processes are also dependent on our relationships with third-party manufacturers of controllers, analog integrated circuits, and other components used in some of our products and with outsourced semiconductor foundries, assembly and test providers, contract manufacturers, logistic carriers, and other service providers. Although we have certain long-term contracts with some of our suppliers, many of these contracts do not provide for long-term capacity commitments. To the extent we do not have firm commitments from our third-party suppliers over a specific time period or for any specific capacity and/or quantity, our suppliers may allocate capacity to their other customers and capacity and/or materials may not be available when we need it or at reasonable prices. As mentioned in the preceding paragraph, we are currently experiencing constraints within our supply chain for certain IC components. Inflationary pressures and shortages, such as those the market is currently experiencing, may increase costs for materials, supplies, and services. Regardless of contract structure, large swings in demand may exceed our contracted supply and/or our suppliers' capacity to meet those demand changes resulting in a shortage of parts, materials, or capacity needed to manufacture our products.

Certain materials are primarily available in a limited number of countries, including rare earth elements, minerals, and metals available primarily from China. Trade disputes or other political conditions, economic conditions, or public health issues, such as COVID-19, may limit our ability to obtain such materials. Although these rare earth and other materials are generally available from multiple suppliers, China is the predominant producer of certain of these materials. If China were to restrict or stop exporting these materials, our suppliers' ability to obtain such supply may be constrained and we may be unable to obtain sufficient quantities, or obtain supply in a timely manner, or at a commercially reasonable cost. Constrained supply of rare earth elements, minerals, and metals may restrict our ability to manufacture certain of our products and make it difficult or impossible to compete with other semiconductor memory manufacturers who are able to obtain sufficient quantities of these materials from China.

We and/or our suppliers and service providers could be affected by tariffs, embargoes, or other trade restrictions, as well as laws and regulations enacted in response to concerns regarding climate change, conflict minerals, responsible sourcing practices, public health crises, contagious disease outbreaks, or other matters, which could limit the supply of our materials and/or increase the cost. Environmental regulations could limit our ability to procure or use certain chemicals or materials in our operations or products. In addition, disruptions in transportation lines could delay our receipt of materials. Lead times for the supply of materials have been extended in the past. Our ability to procure components to repair equipment essential for our manufacturing processes could also be negatively impacted by various restrictions or disruptions in supply chains, among other items. The disruption of our supply of materials, components, or services, or the extension of our lead times could have a material adverse effect on our business, results of operations, or financial condition. Similarly, if our customers experience disruptions to their supplies, materials, components, or services, or the extension of their lead times, they may reduce, cancel, or alter the timing of their purchases with us. For example, currently, some PC customers are adjusting their memory and storage purchases due to shortages of non-memory components that are needed to complete PC builds. Reduction, cancellation, or alteration of the timing of customer purchases could have a material adverse effect on our business, results of operations, or financial condition.

Our operations are dependent on our ability to procure advanced semiconductor manufacturing equipment that enables the transition to lower cost manufacturing processes. For certain key types of equipment, including photolithography tools, we are sometimes dependent on a single supplier. From time to time, we have experienced difficulties in obtaining some equipment on a timely basis due to suppliers' limited capacity. Our inability to obtain equipment on a timely basis could adversely affect our ability to transition to next generation manufacturing processes and reduce our costs. Delays in obtaining equipment could also impede our ability to ramp production at new facilities and could increase our overall costs of a ramp. Our inability to obtain advanced semiconductor manufacturing equipment in a timely manner could have a material adverse effect on our business, results of operations, or financial condition.

Our construction projects to expand production and R&D capacity are highly dependent on available sources of labor, materials, equipment, and services. Increasing demand, supply constraints, inflation, and other market conditions could result in increasing shortages and higher costs for these items. Difficulties in obtaining these resources could result in significant delays in completion of our construction projects and cost increases, which could have a material adverse effect on our business, results of operations, or financial condition.

Our inability to source materials, supplies, capital equipment, or third-party services could affect our overall production output and our ability to fulfill customer demand. Significant or prolonged shortages of our products could halt customer manufacturing and damage our relationships with these customers. For example, recently several automotive manufacturers have experienced shortages of non-memory semiconductor-based components from other suppliers, forcing a curtailment of production lines. Any damage to our customer relationships as a result of a shortage of our products could have a material adverse effect on our business, results of operations, or financial condition.

New product and market development may be unsuccessful.

We are developing new products, including system-level memory and storage products and solutions, which complement our traditional products or leverage their underlying design or process technology. We have made significant investments in product and process technology and anticipate expending significant resources for new semiconductor product and system-level solution development over the next several years. Additionally, we are increasingly differentiating our products and solutions to meet the specific demands of our customers, which increases our reliance on our customers' ability to accurately forecast the needs and preferences of their customers. As a result, our product demand forecasts may be impacted significantly by the strategic actions of our customers.

It is important that we deliver products in a timely manner with increasingly advanced performance characteristics at the time our customers are designing and evaluating samples for their products. If we do not meet their product design schedules, our customers may exclude us from further consideration as a supplier for those products. The process to develop new products requires us to demonstrate advanced functionality, performance, and reliability, often well in advance of a planned ramp of production, in order to secure design wins with our customers. The effects of the public health crisis caused by the COVID-19 pandemic and the measures being taken to limit COVID-19's spread has negatively impacted, and could in the future negatively impact, our ability to meet anticipated timelines and/or expected or required quality standards with respect to the development of certain of our products. In addition, some of our components have long lead-times, requiring us to place orders up to a year in advance of anticipated demand. Such long lead-times increase the risk of excess inventory or loss of sales in the event our forecasts vary substantially from actual demand. There can be no assurance that:

- our product development efforts will be successful;
- we will be able to cost-effectively manufacture new products;
- we will be able to successfully market these products;
- we will be able to establish or maintain key relationships with customers, or that we will not be prohibited from working with certain customers, for specific chip set or design requirements;

- we will be able to introduce new products into the market and qualify them with our customers on a timely basis; or
- margins generated from sales of these products will allow us to recover costs of development efforts.

Our unsuccessful efforts to develop new products and solutions could have a material adverse effect on our business, results of operations, or financial condition.

Increases in sales of system solutions may increase our dependency upon specific customers and our costs to develop and qualify our system solutions.

Our development of system-level memory and storage products is dependent, in part, upon successfully identifying and meeting our customers' specifications for those products. Developing and manufacturing system-level products with specifications unique to a customer increases our reliance upon that customer for purchasing our products at sufficient volumes and prices in a timely manner. If we fail to identify or develop products on a timely basis, or at all, that comply with our customers' specifications or achieve design wins with our customers, we may experience a significant adverse impact on our revenue and margins. Even if our products meet customer specifications, our sales of system-level solutions are dependent upon our customers choosing our products over those of our competitors and purchasing our products at sufficient volumes and prices. Our competitors' products may be less costly, provide better performance, or include additional features when compared to our products. Our long-term ability to sell system-level memory and storage products is reliant upon our customers' ability to create, market, and sell their products containing our system-level solutions at sufficient volumes and prices in a timely manner. If we fail to successfully develop and market system-level products, our business, results of operations, or financial condition may be materially adversely affected.

Even if we are successful in selling system-level solutions to our customers in sufficient volume, we may be unable to generate sufficient profit if our per-unit manufacturing costs exceed our per-unit selling prices. Manufacturing system-level solutions to customer specifications requires a longer development cycle, as compared to discrete products, to design, test, and qualify, which may increase our costs. Some of our system solutions are increasingly dependent on sophisticated firmware that may require significant customization to meet customer specifications, which increases our costs and time to market. Additionally, we may need to update our controller and hardware design as well as our firmware or develop new firmware as a result of new product introductions or changes in customer specifications and/or industry standards, which increases our costs. System complexities and extended warranties for system-level products could also increase our warranty costs. Our failure to cost-effectively manufacture system-level solutions and/or controller, hardware design, and firmware in a timely manner may result in reduced demand for our system-level products and could have a material adverse effect on our business, results of operations, or financial condition.

Products that fail to meet specifications, are defective, or that are otherwise incompatible with end uses could impose significant costs on us.

Products that do not meet specifications or that contain, or are perceived by our customers to contain, defects or that are otherwise incompatible with end uses could impose significant costs on us or otherwise materially adversely affect our business, results of operations, or financial condition. From time to time, we experience problems with nonconforming, defective, or incompatible products after we have shipped such products. In recent periods, we have further diversified and expanded our product offerings, which could potentially increase the chance that one or more of our products could fail to meet specifications in a particular application. Our products and solutions may be deemed fully or partially responsible for functionality in our customers' products and may result in sharing or shifting of product or financial liability from our customers to us for costs incurred by the end user as a result of our customers' products failing to perform as specified. In addition, if our products and solutions perform critical functions in our customers' products or are used in high-risk consumer end products, such as autonomous driver assistance programs, home and enterprise security, smoke and noxious gas detectors, medical monitoring equipment, or wearables for child and elderly safety, our potential liability may increase. We could be adversely affected in several ways, including the following:

- we may be required or agree to compensate customers for costs incurred or damages caused by defective or incompatible products and to replace products;
- we could incur a decrease in revenue or adjustment to pricing commensurate with the reimbursement of such costs or alleged damages; and

- we may encounter adverse publicity, which could cause a decrease in sales of our products or harm our reputation or relationships with existing or potential customers.

Any of the foregoing items could have a material adverse effect on our business, results of operations, or financial condition.

If our manufacturing process is disrupted by operational issues, natural disasters, or other events, our business, results of operations, or financial condition could be materially adversely affected.

We and our subcontractors manufacture products using highly complex processes that require technologically advanced equipment and continuous modification to improve yields and performance. Difficulties in the manufacturing process or the effects from a shift in product mix can reduce yields or disrupt production and may increase our per gigabit manufacturing costs. We and our subcontractors maintain operations and continuously implement new product and process technology at manufacturing facilities, which are widely dispersed in multiple locations in several countries including the United States, Singapore, Taiwan, Japan, Malaysia, and China. As a result of the necessary interdependence within our network of manufacturing facilities, an operational disruption at one of our or a subcontractor's facilities may have a disproportionate impact on our ability to produce many of our products.

From time to time, there have been disruptions in our manufacturing operations as a result of power outages, improperly functioning equipment, disruptions in supply of raw materials or components, or equipment failures. We have manufacturing and other operations in locations subject to natural occurrences and possible climate changes, such as severe and variable weather and geological events, including droughts, earthquakes, tsunamis, or other occurrences, such as the recent Taiwan drought, that could disrupt operations, resulting in increased costs, or disruptions to our or our suppliers' or customers' manufacturing operations. In addition, our suppliers and customers also have operations in such locations. Other events, including political or public health crises, such as an outbreak of contagious diseases like COVID-19, SARS-CoV, avian and swine influenza, measles, or Ebola, may also affect our production capabilities or that of our suppliers, including as a result of quarantines, closures of production facilities, lack of supplies, or delays caused by restrictions on travel or shipping. For example, previously in response to increasing positive cases of COVID-19 in Johor State, Malaysia, we reduced our workforce on-site at our Muar facility, which reduced output levels from that facility, though it is now operating at normal levels. In addition, climate change may pose physical risks to our manufacturing facilities or our suppliers' facilities, including increased extreme weather events that could result in supply delays or disruptions. The events noted above have occurred from time to time and may occur in the future. As a result, in addition to disruptions to operations, our insurance premiums may increase or we may not be able to fully recover any sustained losses through insurance.

If production is disrupted for any reason, manufacturing yields may be adversely affected, or we may be unable to meet our customers' requirements and they may purchase products from other suppliers. This could result in a significant increase in manufacturing costs, loss of revenue, or damage to customer relationships, any of which could have a material adverse effect on our business, results of operations, or financial condition.

Breaches of our security systems, or those of our customers, suppliers, or business partners, could expose us to losses.

We maintain a system of controls over the physical security of our facilities. We also manage and store various proprietary information and sensitive or confidential data relating to our operations. In addition, we process, store, and transmit large amounts of data relating to our customers and employees, including sensitive personal information. Unauthorized persons or employees may gain access to our facilities or network systems to steal trade secrets or other proprietary information, compromise confidential information, create system disruptions, or cause shutdowns, including through cyberattacks. These parties may also be able to develop and deploy viruses, worms, and other malicious software programs that disrupt our operations and create security vulnerabilities. Breaches of our physical security, attacks on our network systems, or breaches or attacks on our customers, suppliers, or business partners who have confidential or sensitive information regarding us and our customers and suppliers, could result in significant losses and damage our reputation with customers and suppliers and may expose us to litigation if the confidential information of our customers, suppliers, or employees is compromised. The foregoing could have a material adverse effect on our business, results of operations, or financial condition.

We must attract, retain, and motivate highly skilled employees.

To remain competitive, we must attract, retain, and motivate executives and other highly skilled, diverse employees, as well as effectively manage or plan for succession for key employees. Competition for experienced employees in our industry continues to be intense. Hiring and retaining qualified executives, engineers, technical staff, sales representatives, and other employees is critical to our business. If other employers are perceived as offering a greater degree of workplace flexibility or other employment benefits to employees than us, we may experience difficulty in attracting, retaining, and motivating the employees needed for our business operations. Our inability to attract, retain, and motivate executives and other employees or effectively manage or plan for succession of key employees may inhibit our ability to maintain or expand our business operations. In September 2021, we mandated that all U.S. employees and, in addition, contractors that enter our U.S. buildings and certain other locations, be fully vaccinated against COVID-19, subject to disability and religious exemptions, by November 15, 2021 as a condition of working for us, which could result in increased attrition, loss of critical skills, and reduced employee morale, potentially resulting in business disruptions or increased expenses to address any disruptions. Additionally, changes to immigration policies in the numerous countries in which we operate, including the United States, as well as restrictions on global travel as a result of local or global public health crises requiring quarantines or other precautions to limit exposure to infectious diseases, may limit our ability to hire and/or retain talent in, or transfer talent to, specific locations. If our total compensation programs and workplace culture cease to be viewed as competitive and inclusive, our ability to attract, retain, and motivate employees could be weakened, which could have a material adverse effect on our business, results of operations, or financial condition.

Our incentives from various governments are conditional upon achieving or maintaining certain performance obligations and are subject to reduction, termination, or clawback.

We have received, and may in the future continue to receive, benefits and incentives from national, state, and local governments in various regions of the world designed to encourage us to establish, maintain, or increase investment, workforce, or production in those regions. These incentives may take various forms, including grants, loan subsidies, and tax arrangements, and typically require us to perform or maintain certain levels of investment, capital spending, employment, technology deployment, or research and development activities to qualify for such incentives. We may be unable to obtain significant future incentives to continue to fund a portion of our capital expenditures and operating costs, without which our cost structure would be adversely impacted. We also cannot guarantee that we will successfully achieve performance obligations required to qualify for these incentives or that the granting agencies will provide such funding. These incentive arrangements typically provide the granting agencies with rights to audit our compliance with their terms and obligations. Such audits could result in modifications to, or termination of, the applicable incentive program. The incentives we receive could be subject to reduction, termination, or clawback, and any decrease or clawback of government incentives could have a material adverse effect on our business, results of operations, or financial condition.

We may make future acquisitions and/or alliances, which involve numerous risks.

Acquisitions and the formation or operation of alliances, such as joint ventures and other partnering arrangements, involve numerous risks, including the following:

- integrating the operations, technologies, and products of acquired or newly formed entities into our operations;
- increasing capital expenditures to upgrade and maintain facilities;
- increased debt levels;
- the assumption of unknown or underestimated liabilities;
- the use of cash to finance a transaction, which may reduce the availability of cash to fund working capital, capital expenditures, R&D expenditures, and other business activities;
- diverting management's attention from daily operations;
- managing larger or more complex operations and facilities and employees in separate and diverse geographic areas;
- hiring and retaining key employees;
- requirements imposed by government authorities in connection with the regulatory review of a transaction, which may include, among other things, divestitures or restrictions on the conduct of our business or the acquired business;
- inability to realize synergies or other expected benefits;

- failure to maintain customer, vendor, and other relationships;
- inadequacy or ineffectiveness of an acquired company's internal financial controls, disclosure controls and procedures, compliance programs, and/or environmental, health and safety, anti-corruption, human resource, or other policies or practices; and
- impairment of acquired intangible assets, goodwill, or other assets as a result of changing business conditions, technological advancements, or worse-than-expected performance of the acquired business.

The global memory and storage industry has experienced consolidation and may continue to consolidate. We engage, from time to time, in discussions regarding potential acquisitions and similar opportunities. To the extent we are successful in completing any such transactions, we could be subject to some or all of the risks described above, including the risks pertaining to funding, assumption of liabilities, integration challenges, and increases in debt that may accompany such transactions. Acquisitions of, or alliances with, technology companies are inherently risky and may not be successful and could have a material adverse effect on our business, results of operations, or financial condition.

We may incur restructuring charges in future periods.

From time to time, we have, and may in the future, enter into restructure initiatives in order to, among other items, streamline our operations, respond to changes in business conditions, our markets or product offerings, or to centralize certain key functions. We may not realize expected savings or other benefits from our restructure activities and may incur additional restructure charges or other losses in future periods associated with other initiatives.

We have ceased development of 3D XPoint technology and on June 30, 2021, we announced that we have entered into a definitive agreement to sell our Lehi facility that was dedicated to 3D XPoint production to TI for cash consideration of $900 million. There is no assurance that we will be able to close the sale to TI in a timely manner or at all. The net assets and liabilities of the Lehi facility were classified as held for sale and are carried at the net consideration expected to be realized from the sale. We recognized a $435 million impairment charge in the third quarter of 2021 and could recognize additional losses as a result of changes in the assets and liabilities prior to the closing date of the transaction. Our inability to close the transaction in a timely manner or additional impairment losses could adversely affect our business, results of operations, or financial condition.

In connection with any restructure initiatives, we could incur restructure charges, loss of production output, loss of key personnel, disruptions in our operations, and difficulties in the timely delivery of products, which could have a material adverse effect on our business, results of operations, or financial condition.

Compliance with customer responsible sourcing requirements and any related regulations could increase our operating costs, or limit the supply and increase the cost of certain materials, supplies, and services, and if we fail to comply, customers may reduce purchases from us or disqualify us as a supplier.

Many of our customers have adopted responsible sourcing programs that require us to periodically report on our environmental, social, and governance efforts to ensure that our performance and the materials, supplies, and services we use and incorporate into the products we sell are consistent with their programs. Some of our customers may elect to disqualify us as a supplier or reduce purchases from us if we are unable to verify that our performance or products meet the specifications of their responsible sourcing programs. Meeting customer requirements may increase operating requirements and costs or limit the sourcing and availability of some of the materials, supplies, and services we use, particularly when the availability of such materials, supplies, and services is concentrated to a limited number of suppliers. From time to time we remove suppliers based on our responsible sourcing requirements and may be unable to replace them in a timely or cost effective manner. This may affect our ability and/or the cost to obtain sufficient quantities of materials, supplies, and services necessary for the manufacture of our products. Our inability to comply with customers' responsible sourcing requirements or with any related regulations could have a material adverse effect on our business, results of operations, or financial condition.

A downturn in the worldwide economy may harm our business.

The health crisis caused by COVID-19 has adversely affected economic conditions and caused a downturn in the worldwide economy. Downturns in the worldwide economy, including the downturn and subsequent volatility driven by the COVID-19 pandemic, have adversely affected our business in the past. Adverse economic conditions affect demand for devices that incorporate our products, such as personal computers, smartphones, automobiles, and servers. Reduced demand for these or other products could result in significant decreases in our average selling prices and product sales. Future downturns could also adversely affect our business. In addition, to the extent our customers or distributors have elevated inventory levels, we may experience a decrease in short-term and/or long-term demand and/or pricing for our products.

A deterioration of conditions in worldwide credit markets could limit our ability to obtain external financing to fund our operations and capital expenditures. In addition, we may experience losses on our holdings of cash and investments due to failures of financial institutions and other parties. Difficult economic conditions may also result in a higher rate of losses on our accounts receivable due to credit defaults. As a result, downturns in the worldwide economy could have a material adverse effect on our business, results of operations, or financial condition.

Risks Related to Intellectual Property and Litigation

We may be unable to protect our intellectual property or retain key employees who are knowledgeable of and develop our intellectual property.

We maintain a system of controls over our intellectual property, including U.S. and foreign patents, trademarks, copyrights, trade secrets, licensing arrangements, confidentiality procedures, non-disclosure agreements with employees, consultants, and vendors, and a general system of internal controls. Despite our system of controls over our intellectual property, it may be possible for our current or future competitors to obtain, copy, use, or disclose, illegally or otherwise, our product and process technology or other proprietary information. The laws of some foreign countries may not protect our intellectual property to the same degree as do U.S. laws, and our confidentiality, non-disclosure, and non-compete agreements may be unenforceable or difficult and costly to enforce.

Additionally, our ability to maintain and develop intellectual property is dependent upon our ability to attract, develop, and retain highly skilled employees. Global competition for such skilled employees in our industry is intense. A decline in our operating results and/or stock price may adversely affect our ability to retain key employees whose compensation is dependent, in part, upon the market price of our common stock, achieving certain performance metrics, levels of company profitability, or other financial or company-wide performance. If our competitors or future entrants into our industry are successful in hiring our employees, they may directly benefit from the knowledge these employees gained while they were under our employment.

Our inability to protect our intellectual property or retain key employees who are knowledgeable of and develop our intellectual property could have a material adverse effect on our business, results of operations, or financial condition.

Legal proceedings and claims could have a material adverse effect on our business, results of operations, or financial condition.

From time to time we are subject to various legal proceedings and claims that arise out of the ordinary conduct of our business or otherwise, both domestically and internationally. See “Part II – Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Contingencies.” Any claim, with or without merit, could result in significant legal fees that could negatively impact our financial results, disrupt our operations, and require significant attention from our management. We may be associated with and subject to litigation, claims, or arbitration disputes arising from, or as a result of:

- our relationships with vendors or customers, supply agreements, or contractual obligations with our subcontractors or business partners;
- the actions of our vendors, subcontractors, or business partners;
- our indemnification obligations, including obligations to defend our customers against third-party claims asserting infringement of certain intellectual property rights, which may include patents, trademarks, copyrights, or trade secrets; and
- the terms of our product warranties or from product liability claims.

As we continue to focus on developing system solutions with manufacturers of consumer products, including autonomous driving, augmented reality, and others, we may be exposed to greater potential for personal liability claims against us as a result of consumers' use of those products. We, our officers, or our directors could also be subject to claims of alleged violations of securities laws. There can be no assurance that we are adequately insured to protect against all claims and potential liabilities, and we may elect to self-insure with respect to certain matters. Exposures to various legal proceedings and claims could lead to significant costs and expenses as we defend claims, are required to pay damage awards, or enter into settlement agreements, any of which could have a material adverse effect on our business, results of operations, or financial condition.

We are subject to allegations of anticompetitive conduct.

On April 27, 2018, a complaint was filed against Micron and other DRAM suppliers in the U.S. District Court for the Northern District of California. Subsequently, two substantially identical cases were filed in the same court. The lawsuits purported to be on behalf of a nationwide class of indirect purchasers of DRAM products. On September 3, 2019, the District Court granted Micron's motion to dismiss and allowed the plaintiffs the opportunity to file a consolidated, amended complaint. On October 28, 2019, the plaintiffs filed a consolidated, amended complaint that purported to be on behalf of a nationwide class of indirect purchasers of DRAM products. The amended complaint asserted claims based on alleged price-fixing of DRAM products under federal and state law during the period from June 1, 2016 to at least February 1, 2018, and sought treble monetary damages, costs, interest, attorneys' fees, and other injunctive and equitable relief. On December 21, 2020, the District Court dismissed the plaintiffs' claims and entered judgment against them. On January 19, 2021, the plaintiffs filed a notice of appeal to the U.S. Court of Appeals for the Ninth Circuit. On May 3, 2021, several plaintiffs filed a substantially identical complaint in the U.S. District Court for the Northern District of California purportedly on behalf of a nationwide class of indirect purchasers of DRAM products. On July 19, 2021, the District Court dismissed the May 3, 2021 complaint pursuant to an agreement between the plaintiffs and Micron providing that the plaintiffs may refile the complaint if the District Court's December 21, 2020 dismissal order is not affirmed on appeal.

On June 26, 2018, a complaint was filed against Micron and other DRAM suppliers in the U.S. District Court for the Northern District of California. Subsequently, four substantially identical cases were filed in the same court. On October 28, 2019, the plaintiffs filed a consolidated, amended complaint. The consolidated complaint purported to be on behalf of a nationwide class of direct purchasers of DRAM products. The consolidated complaint asserted claims based on alleged price-fixing of DRAM products under federal and state law during the period from June 1, 2016 through at least February 1, 2018, and sought treble monetary damages, costs, interest, attorneys' fees, and other injunctive and equitable relief. On December 21, 2020, the District Court granted Micron's motion to dismiss and granted the plaintiffs permission to file a further amended complaint. On January 11, 2021, the plaintiffs filed a further amended complaint asserting substantially the same claims and seeking the same relief. On September 3, 2021, the District Court granted Micron's motion to dismiss the further amended complaint with prejudice.

Additionally, six cases have been filed in the following Canadian courts: Superior Court of Quebec, the Federal Court of Canada, the Ontario Superior Court of Justice, and the Supreme Court of British Columbia. The substantive allegations in these cases are similar to those asserted in the cases filed in the United States.

On May 15, 2018, the Chinese State Administration for Market Regulation ("SAMR") notified Micron that it was investigating potential collusion and other anticompetitive conduct by DRAM suppliers in China. On May 31, 2018, SAMR made unannounced visits to our sales offices in Beijing, Shanghai, and Shenzhen to seek certain information as part of its investigation. We are cooperating with SAMR in its investigation.

We are unable to predict the outcome of these matters and therefore cannot estimate the range of possible loss. The final resolution of these matters could result in significant liability and could have a material adverse effect on our business, results of operations, or financial condition.

We face risks associated with our former IMFT joint venture with Intel.

We face risks from our arbitration proceeding with Intel in connection with our former IMFT joint venture, in which we and Intel have made claims against each other for damages relating to the joint venture. For information regarding the arbitration proceeding, see "Part II – Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Contingencies." The foregoing could have a material adverse effect on our business, results of operations, or financial condition.

Claims that our products or manufacturing processes infringe or otherwise violate the intellectual property rights of others, or failure to obtain or renew license agreements covering such intellectual property, could materially adversely affect our business, results of operations, or financial condition.

As is typical in the semiconductor and other high technology industries, from time to time others have asserted, and may in the future assert, that our products or manufacturing processes infringe upon, misappropriate, misuse, or otherwise violate their intellectual property rights. We are unable to predict the outcome of these assertions made against us. Any of these types of claims, regardless of the merits, could subject us to significant costs to defend or resolve such claims and may consume a substantial portion of management's time and attention. As a result of these claims, we may be required to:

- pay significant monetary damages, fines, royalties, or penalties;
- enter into license or settlement agreements covering such intellectual property rights;
- make material changes to or redesign our products and/or manufacturing processes; and/or
- cease manufacturing, having made, selling, offering for sale, importing, marketing, or using products and/or manufacturing processes in certain jurisdictions.

We may not be able to take any of the actions described above on commercially reasonable terms and any of the foregoing results could have a material adverse effect on our business, results of operations, or financial condition. (See "Part II – Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Contingencies.")

We have a number of intellectual property license agreements. Some of these license agreements require us to make one-time or periodic payments. We may need to obtain additional licenses or renew existing license agreements in the future. We are unable to predict whether these license agreements can be obtained or renewed on terms acceptable to us. The failure to obtain or renew licenses as necessary could have a material adverse effect on our business, results of operations, or financial condition.

We have been served with complaints in Chinese courts alleging patent infringement.

We have been served with complaints in Chinese courts alleging that we infringe certain Chinese patents by manufacturing and selling certain products in China. The complaints seek orders requiring us to destroy inventory of the accused products and equipment for manufacturing the accused products in China; to stop manufacturing, using, selling, and offering for sale the accused products in China; and to pay damages plus court fees.

We are unable to predict the outcome of these assertions of infringement made against us and cannot make a reasonable estimate of the potential loss or range of possible losses. A determination that our products or manufacturing processes infringe the intellectual property rights of others or entering into a license agreement covering such intellectual property could result in significant liability and/or require us to make material changes to our operations in China, products, and/or manufacturing processes. Any of the foregoing could have a material adverse effect on our business, results of operations, or financial condition. (See "Part II – Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Contingencies.")

The acquisition of our ownership interest in Inotera from Qimonda AG ("Qimonda") has been challenged by the administrator of the insolvency proceedings for Qimonda.

In January 2011, Dr. Michael Jaffé, administrator for Qimonda's insolvency proceedings, filed suit against Micron and Micron Semiconductor B.V. ("Micron B.V."), in the District Court of Munich, Civil Chamber. The complaint seeks to void a share purchase agreement between Micron B.V. and Qimonda signed in 2008, pursuant to which Micron B.V. purchased substantially all of Qimonda's shares of Inotera, representing approximately 18% of Inotera's outstanding shares at that time, and seeks an order requiring us to re-transfer those shares to the Qimonda estate. The complaint also seeks, among other things, to recover damages for the alleged value of the joint venture relationship with Inotera and to terminate a patent cross-license between us and Qimonda entered into at the same time as the share purchase agreement. See "Part II – Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Contingencies" for further information regarding the matter.

We are unable to predict the outcome of the matter and cannot make a reasonable estimate of the potential loss or range of possible losses. The final resolution of this lawsuit could result in the loss of the Inotera shares or monetary damages, unspecified damages based on the benefits derived by Micron B.V. from the ownership of the Inotera shares, and/or the termination of the patent cross-license, which could have a material adverse effect on our business, results of operations, or financial condition.

Risks Related to Laws and Regulations

Increases in tariffs or other trade restrictions or taxes on our or our customers' products or equipment and supplies could have an adverse impact on our operations.

In 2021, 89% of our revenue was from products shipped to customer locations outside the United States. We also purchase a significant portion of equipment and supplies from suppliers outside the United States. Additionally, a significant portion of our facilities are located outside the United States, including in Taiwan, Singapore, Japan, Malaysia, and China.

The United States and other countries have levied tariffs and taxes on certain goods. General trade tensions between the United States and China have been escalating since 2018, with U.S. tariffs on Chinese goods and retaliatory Chinese tariffs on U.S. goods. Some of our products are included in these tariffs. Higher duties on existing tariffs and further rounds of tariffs have been announced or threatened by U.S. and Chinese leaders. Additionally, the United States has threatened to impose tariffs on goods imported from other countries, which could also impact certain of our customers' or our operations. If the United States were to impose current or additional tariffs on components that we or our suppliers source, our cost for such components would increase. We may also incur increases in manufacturing costs and supply chain risks due to our efforts to mitigate the impact of tariffs on our customers and our operations. Additionally, tariffs on our customers' products could impact their sales of such end products, resulting in lower demand for our products.

We cannot predict what further actions may ultimately be taken with respect to tariffs or trade relations between the United States and other countries, what products may be subject to such actions, or what actions may be taken by other countries in retaliation. Further changes in trade policy, tariffs, additional taxes, restrictions on exports or other trade barriers, or restrictions on supplies, equipment, and raw materials including rare earth minerals, may limit our ability to produce products, increase our selling and/or manufacturing costs, decrease margins, reduce the competitiveness of our products, or inhibit our ability to sell products or purchase necessary equipment and supplies, which could have a material adverse effect on our business, results of operations, or financial condition.

Trade regulations have restricted our ability to sell our products to several customers, could restrict our ability to sell our products to other customers or in certain markets, or could otherwise restrict our ability to conduct operations.

International trade disputes have led, and may continue to lead, to new and increasing trade barriers and other protectionist measures that can increase our manufacturing costs, make our products less competitive, reduce demand for our products, limit our ability to sell to certain customers or markets, limit our ability to procure components or raw materials, impede or slow the movement of our goods across borders, impede our ability to perform R&D activities, or otherwise restrict our ability to conduct operations. Increasing protectionism, economic nationalism, and national security concerns may lead to further changes in trade policy, domestic sourcing initiatives, or other formal and informal measures that could make it more difficult to sell our products in, or restrict our access to, some markets and/or customers.

Escalating tensions between the United States and China have led to increased trade restrictions and have affected customer ordering patterns. For example, the U.S. Bureau of Industry and Security ("BIS") has enacted increasingly broad trade restrictions with respect to Huawei (which represented approximately 10% of our revenue in the fourth quarter of 2020), culminating with restrictions that took effect on September 15, 2020 and that prevent us and many other companies from shipping products to Huawei. We cannot predict the duration these restrictions will remain in place, whether the BIS will grant us or others licenses to ship products to Huawei, or whether the BIS or other U.S. or foreign government entities will enact similar restrictions with respect to other customers, markets, or products. We may not be able to replace the lost revenue opportunities associated with such restrictions.

The United States has also imposed other restrictions on the export of U.S. regulated products and technology to certain Chinese technology companies, including certain of our customers. These restrictions have reduced our sales, and continuing or future restrictions could adversely affect our financial results, result in reputational harm to us due to our relationship with such companies, or lead such companies to develop or adopt technologies that compete with our products. It is difficult to predict what further trade-related actions governments may take, and we may be unable to quickly and effectively react to such actions. For example, U.S. legislation has expanded the power of the U.S. Department of Commerce to restrict the export of "emerging and foundational technologies" yet to be identified, which could impact our current or future products.

Trade disputes and protectionist measures, or continued uncertainty about such matters, could result in declining consumer confidence and slowing economic growth or recession, and could cause our customers to reduce, cancel, or alter the timing of their purchases with us. Sustained trade tensions could lead to long-term changes in global trade and technology supply chains, which could adversely affect our business and growth prospects. Trade restrictions that may be imposed by the United States, China, or other countries may impact our business in ways we cannot reasonably quantify, including that some of our customers' products which incorporate our solutions may also be impacted. In addition, further increases in trade restrictions or barriers may negatively impact our revenue, and any licenses we have received or could receive in the future could be rendered ineffective. Any such changes may have an adverse effect on our business, results of operations, or financial condition.

The technology industry is subject to intense media, political, and regulatory scrutiny, which can increase our exposure to government investigations, legal actions, and penalties. Although we have policies, controls, and procedures designed to help ensure compliance with applicable laws, there can be no assurance that our employees, contractors, suppliers, or agents will not violate such laws or our policies. Violations of trade laws, restrictions, or regulations can result in fines; criminal sanctions against us or our officers, directors, or employees; prohibitions on the conduct of our business; and damage to our reputation.

We may incur additional tax expense or become subject to additional tax exposure.

We operate in a number of locations outside the United States, including Singapore, where we have tax incentive arrangements that are conditional, in part, upon meeting certain business operations and employment thresholds. Our domestic and international taxes are dependent upon the geographic mix of our earnings among these jurisdictions. Our provision for income taxes and cash tax liabilities in the future could be adversely affected by numerous factors, including challenges by tax authorities to our tax positions and intercompany transfer pricing arrangements, failure to meet performance obligations with respect to tax incentive agreements, expanding our operations in various countries, and changes in tax laws and regulations. Additionally, we file income tax returns with the U.S. federal government, various U.S. states, and various other jurisdictions throughout the world and certain tax returns may remain open to examination for several years. The results of audits and examinations of previously filed tax returns and continuing assessments of our tax exposures may have an adverse effect on our provision for income taxes and cash tax liability. The foregoing items could have a material adverse effect on our business, results of operations, or financial condition.

A change in tax laws in key jurisdictions could materially increase our tax expense.

We are subject to income taxes in the United States and many foreign jurisdictions. Changes to income tax laws and regulations, or the interpretation of such laws, in any of the jurisdictions in which we operate could significantly increase our effective tax rate and ultimately reduce our cash flows from operating activities and otherwise have a material adverse effect on our financial condition. For example, our effective tax rate increased from 1.2% for 2018 to 9.8% for 2019 primarily as a result of tax reform by the United States. Additionally, various levels of government are increasingly focused on tax reform and other legislative actions to increase tax revenue. The current administration has various proposals that, if enacted, would increase U.S. federal income taxes on corporations. Further changes in the tax laws of foreign jurisdictions could arise as a result of the base erosion and profit shifting project undertaken by the Organisation for Economic Co-operation and Development, which represents a coalition of member countries and recommended changes to numerous long-standing tax principles. If implemented by taxing authorities, such changes, as well as changes in U.S. federal and state tax laws or in taxing jurisdictions' administrative interpretations, decisions, policies, and positions, could have a material adverse effect on our business, results of operations, or financial condition.

We and others are subject to a variety of laws, regulations, or industry standards, including with respect to climate change, that may have a material adverse effect on our business, results of operations, or financial condition.

The manufacturing of our products requires the use of facilities, equipment, and materials that are subject to a broad array of laws and regulations in numerous jurisdictions in which we operate. Additionally, we are subject to a variety of other laws and regulations relative to the construction, maintenance, and operations of our facilities. Any changes in laws, regulations, or industry standards could cause us to incur additional direct costs, as well as increased indirect costs related to our relationships with our customers and suppliers, and otherwise harm our operations and financial condition. Any failure to comply with laws, regulations, or industry standards could adversely impact our reputation and our financial results. Additionally, we engage various third parties as sales channel partners or to represent us or otherwise act on our behalf who are also subject to a broad array of laws, regulations, and industry standards. Our engagement with these third parties may also expose us to risks associated with their respective compliance with laws and regulations.

Climate change concerns and the potential resulting environmental impact may result in new environmental, health, and safety laws and regulations that may affect us, our suppliers, and our customers. Such laws or regulations could cause us to incur additional direct costs for compliance, as well as increased indirect costs resulting from our customers, suppliers, or both incurring additional compliance costs that are passed on to us. These costs may adversely impact our results of operations and financial condition.

As a result of the items detailed in this risk factor, we could experience the following:

- suspension of production or sales of our products;
- remediation costs;
- alteration of our manufacturing processes;
- regulatory penalties, fines, and legal liabilities; and
- reputational challenges.

Compliance with, or our failure, or the failure of our third-party sales channel partners or agents, to comply with, laws, regulations, or industry standards could have a material adverse effect on our business, results of operations, or financial condition.

Risks Related to Capitalization and Financial Markets

We may be unable to generate sufficient cash flows or obtain access to external financing necessary to fund our operations, make scheduled debt payments, pay our dividend, and make adequate capital investments.

Our cash flows from operations depend primarily on the volume of semiconductor memory and storage products sold, average selling prices, and manufacturing costs. To develop new product and process technology, support future growth, achieve operating efficiencies, and maintain product quality, we must make significant capital investments in manufacturing technology, capital equipment, facilities, R&D, and product and process technology.

We estimate capital expenditures in 2022 for property, plant, and equipment, net of partner contributions, will be between approximately $11 billion and $12 billion. Investments in capital expenditures may not generate expected returns or cash flows. In addition, we invest our capital in areas that we believe best align with our business strategy and will yield future profitability. Significant judgment is required to determine which capital investments will result in optimal returns, and we could invest in projects that are ultimately less profitable than those projects we do not select. Delays in completion and ramping of new production facilities, or failure to optimize our investment choices, could significantly impact our ability to realize expected returns on our capital expenditures, which could have a material adverse effect on our business, results of operations, or financial condition.

In the past we have utilized external sources of financing when needed. As a result of our debt levels, expected debt amortization, and general economic conditions, it may be difficult for us to obtain financing on terms acceptable to us or at all. We have experienced volatility in our cash flows and operating results and may continue to experience such volatility in the future, which may negatively affect our credit rating. Our credit rating may also be affected by our liquidity, financial results, economic risk, or other factors, which may increase the cost of future borrowings and make it difficult for us to obtain financing on terms acceptable to us or at all. There can be no assurance that we will be able to generate sufficient cash flows, access capital or credit markets, or find other sources of financing to fund our operations, make debt payments, pay our quarterly dividend, and make adequate capital investments to remain competitive in terms of technology development and cost efficiency. Our inability to do any of the foregoing could have a material adverse effect on our business, results of operations, or financial condition.

Debt obligations could adversely affect our financial condition.

We have incurred in the past, and expect to incur in the future, debt to finance our capital investments, business acquisitions, and restructure of our capital structure. As of September 2, 2021 we had debt with a carrying value of $6.78 billion and $2.50 billion of our Revolving Credit Facility was available to us. Our debt obligations could adversely impact us as follows:

- require us to use a large portion of our cash flow to pay principal and interest on debt, which will reduce the amount of cash flow available to fund working capital, capital expenditures, acquisitions, R&D expenditures, payment of dividends, and other business activities;
- result in certain of our debt instruments being accelerated to be immediately due and payable or being deemed to be in default if certain terms of default are triggered, such as applicable cross payment default and/or cross-acceleration provisions;
- adversely impact our credit rating, which could increase future borrowing costs;
- limit our future ability to raise funds for capital expenditures, strategic acquisitions or business opportunities, R&D, and other general corporate requirements;
- restrict our ability to incur specified indebtedness, create or incur certain liens, and enter into sale-leaseback financing transactions;
- increase our vulnerability to adverse economic and semiconductor memory and storage industry conditions; and
- increase our exposure to interest rate risk from variable rate indebtedness.

Our ability to meet our payment obligations under our debt instruments depends on our ability to generate significant cash flows or obtain external financing in the future. This, to some extent, is subject to market, economic, financial, competitive, legislative, and regulatory factors as well as other factors that are beyond our control. There can be no assurance that our business will generate cash flow from operations, or that additional capital will be available to us, in amounts sufficient to enable us to meet our debt payment obligations and to fund other liquidity needs. Additionally, events and circumstances may occur which would cause us to not be able to satisfy applicable draw-down conditions and utilize our Revolving Credit Facility. If we are unable to generate sufficient cash flows to service our debt payment obligations, we may need to refinance or restructure our debt, sell assets, reduce or delay capital investments, or seek to raise additional capital. If we are unable to implement one or more of these alternatives, we may be unable to meet our debt payment obligations, which could have a material adverse effect on our business, results of operations, or financial condition.

Changes in foreign currency exchange rates could materially adversely affect our business, results of operations, or financial condition.

Across our global operations, significant transactions and balances are denominated in currencies other than the U.S. dollar (our reporting currency), primarily the euro, Malaysian ringgit, Singapore dollar, New Taiwan dollar, and yen. In addition, a significant portion of our manufacturing costs are denominated in foreign currencies. Exchange rates for some of these currencies against the U.S. dollar have been volatile and may be volatile in future periods. If these currencies strengthen against the U.S. dollar, our manufacturing costs could significantly increase. Exchange rates for the U.S. dollar that adversely change against our foreign currency exposures could have a material adverse effect on our business, results of operations, or financial condition.

We are subject to counterparty default risks.

We have numerous arrangements with financial institutions that subject us to counterparty default risks, including cash deposits, investments, and derivative instruments. Additionally, we are subject to counterparty default risk from our customers for amounts receivable from them. As a result, we are subject to the risk that the counterparty will default on its performance obligations. A counterparty may not comply with its contractual commitments which could then lead to its defaulting on its obligations with little or no notice to us, which could limit our ability to mitigate our exposure. Additionally, our ability to mitigate our exposures may be constrained by the terms of our contractual arrangements or because market conditions prevent us from taking effective action. If one of our counterparties becomes insolvent or files for bankruptcy, our ability to recover any losses suffered as a result of that counterparty's default may be limited by the liquidity of the counterparty or the applicable laws governing the bankruptcy proceedings. In the event of such default, we could incur significant losses, which could have a material adverse effect on our business, results of operations, or financial condition.

The trading price of our common stock has been and may continue to be volatile.

Our common stock has experienced substantial price volatility in the past and may continue to do so in the future. Additionally, we, the technology industry, and the stock market as a whole have on occasion experienced extreme stock price and volume fluctuations that have affected stock prices in ways that may have been unrelated to the specific operating performance of individual companies. The trading price of our common stock may fluctuate widely due to various factors, including, but not limited to, actual or anticipated fluctuations in our financial condition and operating results, changes in financial estimates by us or financial or other market estimates and ratings by securities and other analysts, changes in our capital structure, including issuance of additional debt or equity to the public, interest rate changes, regulatory changes, news regarding our products or products of our competitors, and broad market and industry fluctuations.

Our operating results have fluctuated in the past and will continue to do so, sometimes materially. Many of the matters discussed in this Risk Factors section could impact our operating results in any fiscal quarter or year. If our operating results fall below our forecasts and the expectations of public market analysts and investors, the trading price of our common stock may decline.

For these reasons, investors should not rely on recent or historical trends to predict future trading prices of our common stock, financial condition, results of operations, or cash flows. Investors in our common stock may not realize any return on their investment in us and may lose some or all of their investment. Volatility in the trading price of our common stock could also result in the filing of securities class action litigation matters, which could result in substantial costs and the diversion of management time and resources.

The amount and frequency of our share repurchases may fluctuate, and we cannot guarantee that we will fully consummate our share repurchase authorization, or that it will enhance long-term shareholder value. Share repurchases could also increase the volatility of the trading price of our stock and will diminish our cash reserves.

The amount, timing, and execution of our share repurchases pursuant to our share repurchase authorization may fluctuate based on our operating results, cash flows, and priorities for the use of cash for other purposes. For example, we repurchased 66.4 million shares for $2.66 billion in 2019, 3.6 million shares for $176 million in 2020, and 15.6 million shares for $1.20 billion in 2021.These other purposes include, but are not limited to, operational spending, capital spending, acquisitions, and repayment of debt. Other factors, including changes in tax laws, could also impact our share repurchases. Although our Board of Directors has authorized share repurchases of up to $10 billion of our outstanding common stock, the authorization does not obligate us to repurchase any common stock.

We cannot guarantee that our share repurchase authorization will be fully consummated or that it will enhance long-term shareholder value. The repurchase authorization could affect the trading price of our stock and increase volatility, and any announcement of a pause in, or termination of, this program may result in a decrease in the trading price of our stock. In addition, this program will diminish our cash reserves.

There can be no assurance that we will continue to declare cash dividends in any particular amounts or at all.

Our Board of Directors has adopted a dividend policy pursuant to which we currently pay a cash dividend on our common shares on a quarterly basis. The declaration and payment of any dividend is subject to the approval of our Board of Directors and our dividend may be discontinued or reduced at any time. There can be no assurance that we will declare cash dividends in the future in any particular amounts, or at all.

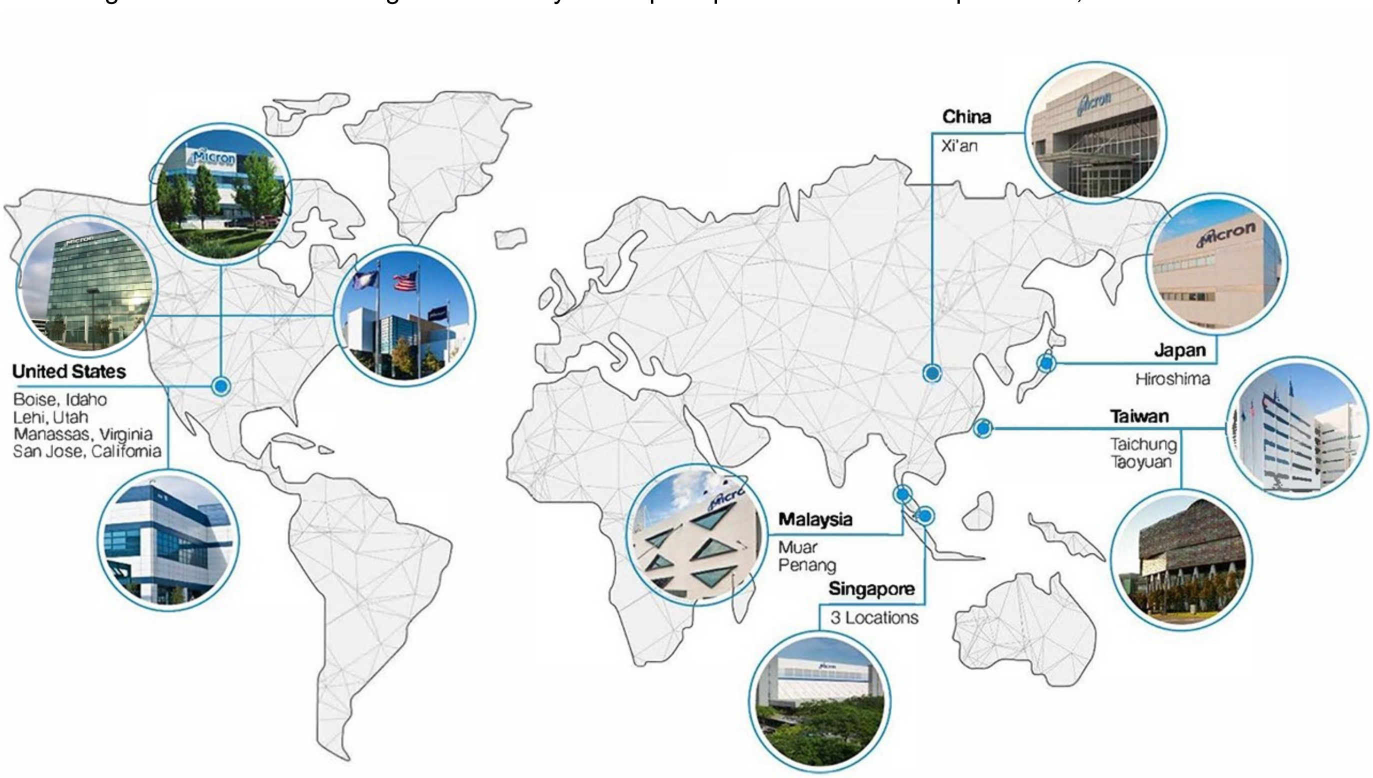
Future dividends, if any, and their timing and amount, may be affected by, among other factors: our financial condition, results of operations, capital requirements, business conditions, debt service obligations, contractual restrictions, industry practice, legal requirements, regulatory constraints, and other factors that our Board of Directors may deem relevant. A reduction in or elimination of our dividend payments could have a negative effect on the trading price of our stock.

ITEM 1B. UNRESOLVED STAFF COMMENTS

None.

ITEM 2. PROPERTIES

Our corporate headquarters are located in Boise, Idaho. In addition to our principal facilities described below, we own or lease numerous other facilities in locations throughout the world used for design, R&D, and sales and marketing activities. The following is a summary of our principal facilities as of September 2, 2021:



Location	Principal Operations
Taiwan	R&D, wafer fabrication, component assembly and test, module assembly and test
Singapore	R&D, wafer fabrication, component assembly and test, module assembly and test
Japan	R&D, wafer fabrication
United States	R&D, wafer fabrication, reticle manufacturing
Malaysia	Component assembly and test, module assembly and test
China	Component assembly and test, module assembly and test

We generally utilize all of our manufacturing capacity; however, a portion of our MTU facility was underutilized for 2021, 2020, and 2019 and was classified as held for sale as of September 2, 2021. We believe that our existing facilities are suitable and adequate for our present purposes. We do not identify or allocate assets by operating segment, other than goodwill. (See “Part II – Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Lehi, Utah Fab and 3D XPoint” and “ – Geographic Information.”)

ITEM 3. LEGAL PROCEEDINGS

For a discussion of legal proceedings, see “Part II – Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Contingencies” and “Item 1A. Risk Factors” of this Annual Report on Form 10-K.

SEC regulations require disclosure of certain proceedings related to environmental matters unless we reasonably believe that the related monetary sanctions, if any, will be less than a specified threshold. We use a threshold of $1 million for this purpose.

ITEM 4. MINE SAFETY DISCLOSURES

Not applicable.

PART II

ITEM 5. MARKET FOR REGISTRANT’S COMMON EQUITY, RELATED STOCKHOLDER MATTERS, AND ISSUER PURCHASES OF EQUITY SECURITIES

Market Information

Our common stock is listed on The Nasdaq Global Select Market under the trading symbol “MU.”

Holders of Record

As of October 1, 2021, there were 1,844 shareholders of record of our common stock.

Dividends

On August 2, 2021, we announced that our Board of Directors had declared a quarterly dividend of $0.10 per share, payable in cash on October 18, 2021, to shareholders of record as of the close of business on October 1, 2021.

We currently expect quarterly dividends to continue in future periods and aim to grow our dividend payments over time. However, the declaration and payment of any future cash dividends are at the discretion and subject to the approval of our Board of Directors. Our Board of Directors' decisions regarding the amount and payment of dividends will depend on many factors, such as our financial condition, results of operations, capital requirements, business conditions, debt service obligations, contractual restrictions, industry practice, legal requirements, regulatory constraints, and other factors that our Board of Directors may deem relevant. We cannot guarantee that we will continue to pay a dividend in any future period.

Equity Compensation Plan Information

The information required by this item is incorporated by reference from the information to be included in our 2021 Proxy Statement under the section entitled “Equity Compensation Plan Information,” which will be filed with the SEC within 120 days after September 2, 2021.

Issuer Purchase of Equity Securities

Common Stock Repurchase Authorization

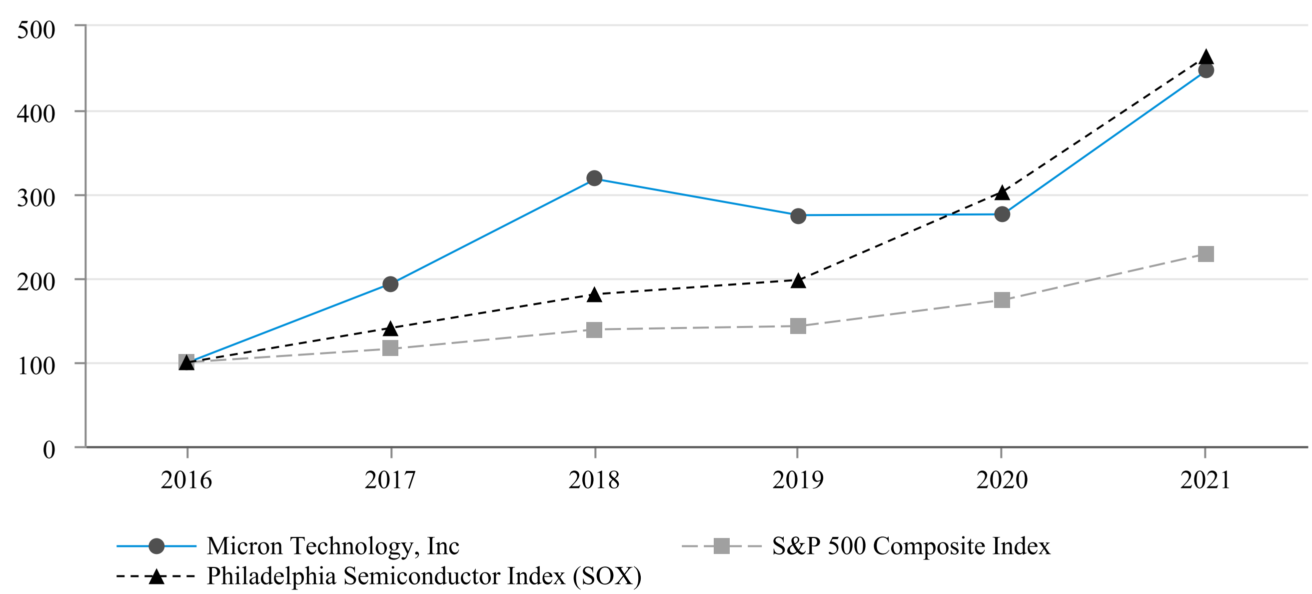
In May 2018, we announced that our Board of Directors authorized the discretionary repurchase of up to $10 billion of our outstanding common stock through open-market purchases, block trades, privately-negotiated transactions, derivative transactions, and/or pursuant to Rule 10b5-1 trading plans. The repurchase authorization has no expiration date, does not obligate us to acquire any common stock, and is subject to market conditions and our ongoing determination of the best use of available cash.

Period		Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced plans or programs	Approximate dollar value of shares that may yet be purchased under publicly announced plans or programs (in millions)
June 4, 2021	– July 8, 2021	1,872,825	$ 80.48	1,872,825	
July 9, 2021	– August 5, 2021	7,735,146	76.63	7,735,146	
August 6, 2021	– September 2, 2021	4,242,303	72.29	4,242,303	
		13,850,274	$ 75.82	13,850,274	$5,962

Shares of common stock withheld as payment of withholding taxes and exercise prices in connection with the vesting or exercise of equity awards are also treated as common stock repurchases. Those withheld shares of common stock are not required to be disclosed under Item 703 of Regulation S-K and accordingly are excluded from the amounts in the table above.

Performance Graph

The following graph illustrates a five-year comparison of cumulative total returns for our common stock, the S&P 500 Composite Index, and the Philadelphia Semiconductor Index (SOX) from August 31, 2016, through August 31, 2021. We operate on a 52 or 53 week fiscal year which ends on the Thursday closest to August 31. Accordingly, the last day of our fiscal year varies. For consistent presentation and comparison to the industry indices shown herein, we have calculated our stock performance graph assuming an August 31 year end.



Note: Management cautions that the stock price performance information shown in the graph above may not be indicative of current stock price levels or future stock price performance.

The performance graph above assumes $100 was invested on August 31, 2016 in common stock of Micron Technology, Inc., the S&P 500 Composite Index, and the Philadelphia Semiconductor Index (SOX). Any dividends paid during the period presented were assumed to be reinvested. The performance was plotted using the following data:

	2016	2017	2018	2019	2020	2021
Micron Technology, Inc.	$ 100	$ 194	$ 318	$ 275	$ 276	$ 447
S&P 500 Composite Index	100	116	139	143	174	229
Philadelphia Semiconductor Index (SOX)	100	141	181	198	303	464

ITEM 6. [RESERVED]

ITEM 7. MANAGEMENT'S DISCUSSION AND ANALYSIS OF FINANCIAL CONDITION AND RESULTS OF OPERATIONS

This discussion should be read in conjunction with the consolidated financial statements and accompanying notes for the year ended September 2, 2021. All period references are to our fiscal periods unless otherwise indicated. Our fiscal year is the 52 or 53-week period ending on the Thursday closest to August 31. Fiscal 2021 contained 52 weeks, fiscal 2020 contained 53 weeks, and fiscal 2019 contained 52 weeks. Our fourth quarter of fiscal 2020 contained 14 weeks and all other fiscal quarters in the years presented contained 13 weeks. All tabular dollar amounts are in millions, except per share amounts.

For an overview of our business and certain related trends, see "Part I – Item 1. Business – Overview."

Results of Operations

Consolidated Results

For the year ended	2021		2020		2019	
Revenue	$ 27,705	100 %	$ 21,435	100 %	$ 23,406	100 %
Cost of goods sold	17,282	62 %	14,883	69 %	12,704	54 %
Gross margin	10,423	38 %	6,552	31 %	10,702	46 %
Research and development	2,663	10 %	2,600	12 %	2,441	10 %
Selling, general, and administrative	894	3 %	881	4 %	836	4 %
Restructure and asset impairments	488	2 %	60	— %	(29)	— %
Other operating (income) expense, net	95	— %	8	— %	78	— %
Operating income	6,283	23 %	3,003	14 %	7,376	32 %
Interest income (expense), net	(146)	(1)%	(80)	— %	77	— %
Other non-operating income (expense), net	81	— %	60	— %	(405)	(2)%
Income tax (provision) benefit	(394)	(1)%	(280)	(1)%	(693)	(3)%
Equity in net income (loss) of equity method investees	37	— %	7	— %	3	— %
Net income attributable to noncontrolling interests	—	— %	(23)	— %	(45)	— %
Net income attributable to Micron	$ 5,861	21 %	$ 2,687	13 %	$ 6,313	27 %

Total Revenue: Total revenue for 2021 increased 29% as compared to 2020 primarily due to increases in DRAM and NAND sales. Sales of DRAM products for 2021 increased 38% as compared to 2020 primarily due to growth in bit shipments in the high-20% range and a high single-digit percent increase in average selling prices. Sales of NAND products for 2021 increased 14% as compared to 2020 primarily due to increases in bit shipments in the high-20% range, partially offset by a low-10% range decline in average selling prices. In the first quarter of 2022, we expect that our bit shipments may be adversely impacted as some customers are adjusting their memory and storage purchases due to shortages of non-memory components and due to constraints within our supply chain for certain IC components.

Total revenue for 2020 decreased 8% as compared to 2019 primarily due to a decline in DRAM sales partially offset by an increase in NAND sales. Sales of DRAM products for 2020 decreased 14% as compared to 2019 as average selling prices declined in the mid-30% range due to challenging market conditions, partially offset by growth in bit shipments in the low-30% range driven by cloud server, enterprise server, and mobile markets. Sales of NAND products for 2020 increased 14% as compared to 2019 primarily due to increases in bit shipments in the mid-20% range driven by sales of SSDs to data center customers and sales of managed NAND products, partially offset by a high-single-digit percent decline in average selling prices.

***Overall Gross Margin*:** Our overall gross margin percentage increased to 38% for 2021 from 31% for 2020, primarily due to the increases in DRAM average selling prices and cost reductions resulting from strong execution in delivering products featuring advanced technologies, partially offset by the declines in NAND average selling prices. Our gross margins included the impact of underutilization costs at MTU of $335 million for 2021, $557 million for 2020, and $384 million for 2019. Underutilization costs at MTU declined in 2021 primarily due to the plan to sell MTU's Lehi facility and classification of assets as held for sale at the end of the second quarter of 2021, which resulted in the cessation of depreciation on those assets (See "Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Lehi, Utah Fab and 3D XPoint"). Effective as of the beginning of the second quarter of 2021, we changed our method of inventory costing from average cost to first-in, first-out ("FIFO"). Concurrently, as of the beginning of the second quarter of 2021, we modified our inventory cost absorption processes used to estimate inventory values, which affects the timing of when costs are recognized. These changes resulted in a one-time increase to cost of goods sold of approximately $293 million in 2021.

Our overall gross margin percentage decreased to 31% for 2020 from 46% for 2019, primarily due to declines in average selling prices, partially offset by the effect of decreases in non-cash depreciation expense from the revision in estimated useful lives of equipment in our NAND wafer fabrication facilities, cost reductions resulting from strong execution in delivering products featuring advanced technologies, and continuous improvement initiatives to reduce production costs. Based on our assessment of planned technology node transitions, capital spending, and re-use rates, we revised the estimated useful lives of the existing equipment in our NAND wafer fabrication facilities and our research and development facilities from five years to seven years as of the beginning of the first quarter of 2020. The revision in estimated useful lives reduced NAND manufacturing depreciation expense and benefited cost of goods sold by approximately $400 million for 2020.

Revenue by Business Unit

For the year ended	2021		2020		2019	
CNBU	$ 12,280	44 %	$ 9,184	43 %	$ 9,968	43 %
MBU	7,203	26 %	5,702	27 %	6,403	27 %
SBU	3,973	14 %	3,765	18 %	3,826	16 %
EBU	4,209	15 %	2,759	13 %	3,137	13 %
All Other	40	— %	25	— %	72	— %
	$ 27,705		$ 21,435		$ 23,406	

Percentages of total revenue may not total 100% due to rounding.

Changes in revenue for each business unit for 2021 as compared to 2020 were as follows:

- CNBU revenue increased 34% primarily due to broad-based increases in bit shipments across markets and higher average selling prices for DRAM.
- MBU revenue increased 26% primarily due to increases in bit shipments for high-value mobile MCP products.

- SBU revenue increased 6% as increases in bit shipments for NAND products outpaced declines in average selling prices.
- EBU revenue increased 53% primarily due to increases in bit shipments driven by strong demand growth in automotive, industrial, and consumer markets and improved pricing in industrial and consumer markets.

Changes in revenue for each business unit for 2020 as compared to 2019 were as follows:

- CNBU revenue decreased 8% primarily due to DRAM price declines driven by imbalances in supply and demand, partially offset by bit sales growth across key markets, particularly in the cloud server and graphics markets. In addition, in the second quarter of 2020, we determined that the 3D XPoint technology and product roadmap were more closely aligned with our CNBU strategy than our SBU strategy and 3D XPoint became an integral part of CNBU. Accordingly, we began to report all 3D XPoint activities within CNBU from that date.
- MBU revenue decreased 11% primarily due to price declines, partially offset by bit sales growth for high-value mobile MCP products.
- SBU revenue decreased 2% primarily due to the decline in 3D XPoint revenue in SBU after the first quarter of 2020 as noted above and NAND selling price declines, partially offset by bit sales growth for SSDs. SBU revenue included products manufactured and sold to Intel under a long-term supply agreement at prices approximating cost, which included 3D XPoint memory and NAND, aggregating $124 million for 2020 and $682 million for 2019.
- EBU revenue decreased 12% primarily due to price declines resulting from the impact of the global COVID-19 pandemic on automotive, industrial, and consumer segments partially offset by bit sales growth from transitions to an increasing mix of high-density DRAM and NAND products.

Operating Income (Loss) by Business Unit

For the year ended	2021		2020		2019	
CNBU	$ 4,295	35 %	$ 2,010	22 %	$ 4,645	47 %
MBU	2,173	30 %	1,074	19 %	2,606	41 %
SBU	173	4 %	36	1 %	(386)	(10)%
EBU	1,006	24 %	301	11 %	923	29 %
All Other	20	50 %	(2)	(8)%	13	18 %
	$ 7,667		$ 3,419		$ 7,801	

Percentages reflect operating income (loss) as a percentage of revenue for each business unit.

Changes in operating income or loss for each business unit for 2021 as compared to 2020 were as follows:

- CNBU operating income increased primarily due to increases in bit shipments, higher average selling prices, manufacturing cost reductions, and lower MTU underutilization costs.
- MBU operating income increased primarily due to increases in sales of high-value MCP products, manufacturing cost reductions for low-power DRAM, and increases in DRAM bit shipments.
- SBU operating income increased primarily due to lower manufacturing costs and increases in bit shipments, partially offset by decreases in selling prices and higher R&D costs.
- EBU operating income increased primarily due to improved pricing in industrial and consumer markets, cost reductions from an increasing mix of leading edge bits, and higher bit shipments.

Changes in operating income or loss for each business unit for 2020 as compared to 2019 were as follows:

- CNBU operating income decreased primarily due to declines in DRAM pricing and MTU underutilization costs in 2020 related to 3D XPoint.
- MBU operating income decreased primarily due to declines in low-power DRAM and NAND pricing, partially offset by increases in sales of high-value MCP products and manufacturing cost reductions.
- SBU operating margin improved primarily due to lower 3D XPoint underutilization costs, manufacturing cost reductions, increases in sales volumes, and improved product mix, partially offset by declines in selling prices.

- EBU operating income decreased as a result of declines in pricing, partially offset by increases in sales volumes to the automotive and industrial markets.

Operating Expenses and Other

Research and Development: R&D expenses vary primarily with the number of development and pre-qualification wafers processed, the cost of advanced equipment dedicated to new product and process development, and personnel costs. Because of the lead times necessary to manufacture our products, we typically begin to process wafers before completion of performance and reliability testing. Development of a product is deemed complete when it is qualified through internal reviews and tests for performance and reliability. R&D expenses can vary significantly depending on the timing of product qualification.

R&D expenses for 2021 increased 2% as compared to 2020 primarily due to increases in employee compensation and depreciation expense resulting from higher capital spending, partially offset by lower volumes of development and prequalification wafers. R&D expenses for 2020 were 7% higher as compared to 2019 primarily due to increases in volumes of development and pre-qualification wafers, a reduction of R&D reimbursements from our partners, increases in employee compensation, and increases in subcontractor expense, partially offset by lower depreciation expense from the revision of the estimated useful lives of equipment.

Selling, General, and Administrative: SG&A expenses for 2021 were relatively unchanged as compared to 2020. SG&A expenses for 2020 were 5% higher as compared to 2019 due to increases in employee compensation and legal costs, partially offset by a reduction in consulting fees.

Restructure and Asset Impairments: In 2021, we ceased development of 3D XPoint technology and classified our Lehi facility assets as held for sale. We recognized a restructure charge of $435 million to write down the assets held for sale to the expected consideration to be received under our agreement with TI. For further discussion see "Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Lehi, Utah Fab and 3D XPoint."

Other Operating and Non-Operating Income (Expense): See "Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Other Operating (Income) Expense, Net" and " – Other Non-Operating Income (Expense), Net."

Interest Income (Expense): Net interest expense for 2021 increased by $66 million as compared to 2020 primarily due a decrease of $77 million in interest income as a result of decreases in interest rates on our cash and investments. Net interest expense for 2020 was $80 million, as compared to $77 million of net interest income for 2019 (a change of $157 million), primarily due to (1) a $91 million decrease in interest income as a result of decreases in interest rates, partially offset by higher average levels of cash and investment balances and (2) a $66 million increase in interest expense primarily due to an increase in our average debt outstanding and a reduction in the amount of interest expense capitalized in 2020.

Income Taxes: Our income tax (provision) benefit consisted of the following:

For the year ended	2021	2020	2019
Income before taxes	$ 6,218	$ 2,983	$ 7,048
Income tax (provision) benefit	(394)	(280)	(693)
Effective tax rate	6.3 %	9.4 %	9.8 %

Our effective tax rate decreased in 2021 as compared to 2020 primarily as a result of a $104 million tax benefit recorded for the discrete $435 million charge to write down the Lehi assets held for sale to the estimated consideration to be realized from the sale of these assets, less expected selling costs. Other changes to our effective tax rate in the periods presented were primarily due to the geographic mix of our earnings. Our income tax provision decreased in 2020 as compared to 2019 primarily as a result of reductions in our profit before tax.

We operate in a number of jurisdictions outside the United States, including Singapore, where we have tax incentive arrangements. These incentives expire, in whole or in part, at various dates through 2034 and are conditional, in part, upon meeting certain business operations and employment thresholds. The effect of tax incentive arrangements reduced our tax provision by $758 million (benefiting our diluted earnings per share by $0.66) for 2021, by $215 million ($0.19 per diluted share) for 2020, and by $756 million ($0.66 per diluted share) for 2019.

See “Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Income Taxes.”

Liquidity and Capital Resources

Our primary sources of liquidity are cash generated from operations and financing obtained from capital markets and financial institutions. Cash generated from operations is highly dependent on selling prices for our products, which can vary significantly from period to period. We are continuously evaluating alternatives for efficiently funding our capital expenditures and ongoing operations. We expect, from time to time, to engage in a variety of financing transactions for such purposes, including the issuance of securities. As of September 2, 2021, $2.50 billion was available to draw under our Revolving Credit Facility. We expect to receive $900 million of proceeds from the sale of our Lehi facility to TI in the first quarter of 2022.

Cash and marketable investments totaled $10.40 billion as of September 2, 2021 and $9.19 billion as of September 3, 2020. Our investments consist primarily of bank deposits, money market funds, and liquid investment-grade, fixed-income securities, which are diversified among industries and individual issuers. To mitigate credit risk, we invest through high-credit-quality financial institutions and by policy generally limit the concentration of credit exposure by restricting the amount of investments with any single obligor. As of September 2, 2021, $3.69 billion of our cash and marketable investments was held by our foreign subsidiaries.

To develop new product and process technology, support future growth, achieve operating efficiencies, and maintain product quality, we must continue to invest in manufacturing technologies, facilities and equipment, and R&D. We estimate capital expenditures in 2022 for property, plant, and equipment, net of partner contributions, to be between $11 billion and $12 billion, and we expect the timing of our capital expenditures to be weighted more toward the first half of 2022. Capital expenditures for 2022 are driven by our continued 176-layer NAND transition, pilot line enablement for next generation NAND and DRAM, and continued infrastructure and prepayments to support the introduction of EUV lithography. Actual amounts for 2022 will vary depending on market conditions. As of September 2, 2021, we had purchase obligations of approximately $2.87 billion for the acquisition of property, plant, and equipment, of which approximately $2.56 billion is expected to be paid within one year.

For a description of contractual obligations, such as debt, leases, and purchase obligations, see “Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Debt,” “ – Leases,” and “ – Commitments.”

Our Board of Directors has authorized the discretionary repurchase of up to $10 billion of our outstanding common stock through open-market purchases, block trades, privately-negotiated transactions, derivative transactions, and/or pursuant to a Rule 10b5-1 trading plan. The repurchase authorization has no expiration date, does not obligate us to acquire any common stock, and is subject to market conditions and our ongoing determination of the best use of available cash. Through September 2, 2021, we have repurchased an aggregate of $4.04 billion of the authorized amount. See “Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Equity.”

On August 2, 2021, we announced that our Board of Directors had declared a quarterly dividend of $0.10 per share, payable in cash on October 18, 2021, to shareholders of record as of the close of business on October 1, 2021. The declaration and payment of any future cash dividends are at the discretion and subject to the approval of our Board of Directors. Our Board of Directors' decisions regarding the amount and payment of dividends will depend on many factors, such as our financial condition, results of operations, capital requirements, business conditions, debt service obligations, contractual restrictions, industry practice, legal requirements, regulatory constraints, and other factors that our Board of Directors may deem relevant.

We expect that our cash and investments, cash flows from operations, and available financing will be sufficient to meet our requirements at least through the next 12 months and thereafter for the foreseeable future.

***Cash Flows*:**

For the year ended		2021		2020		2019
Net cash provided by operating activities	$	12,468	$	8,306	$	13,189
Net cash provided by (used for) investing activities		(10,589)		(7,589)		(10,085)
Net cash provided by (used for) financing activities		(1,781)		(317)		(2,438)
Effect of changes in currency exchange rates on cash, cash equivalents, and restricted cash		41		11		26
Net increase in cash, cash equivalents, and restricted cash	$	139	$	411	$	692

Operating Activities: Cash provided by operating activities reflects net income adjusted for certain non-cash items, including depreciation expense, amortization of intangible assets, asset impairments, and stock-based compensation, and the effects of changes in operating assets and liabilities. The increase in cash provided by operating activities for 2021 as compared to 2020 was primarily due to higher net income adjusted for non-cash items compared with the prior period and the effect of lower inventories, partially offset by an increase in receivables due to a higher level of sales. The decrease in cash provided by operating activities for 2020 compared with 2019 was primarily due to lower net income and changes in working capital.

Investing Activities: For 2021, net cash used for investing activities consisted primarily of $10.03 billion of expenditures for property, plant, and equipment, partially offset by inflows of $502 million of partner contributions for capital expenditures, and $1.06 billion of net outflows from purchases, sales, and maturities of available-for-sale securities.

For 2020, net cash used for investing activities consisted primarily of $8.22 billion of expenditures for property, plant, and equipment, partially offset by inflows of $272 million of partner contributions for capital expenditures, and $415 million of net inflows from purchases, sales, and maturities of available-for-sale securities.

For 2019, net cash used for investing activities consisted primarily of $9.78 billion of expenditures for property, plant, and equipment, partially offset by inflows of $754 million of partner contributions for capital expenditures. Net cash used for investing activities also included $1.17 billion of net outflows from purchases, sales, and maturities of available-for-sale securities.

Financing Activities: For 2021, net cash used for financing activities consisted primarily of $1.20 billion for the acquisition of 15.6 million shares of our common stock under our $10 billion share repurchase authorization, $295 million of payments on equipment purchase contracts, $185 million of cash payments to settle conversions of our 2032D Notes, and $147 million of repayments of finance leases and other debt. In addition, we received proceeds of $1.19 billion under an unsecured 2024 Term Loan A and used the proceeds to repay the $1.19 billion Extinguished 2024 Term Loan A.

For 2020, net cash used for financing activities consisted primarily of $4.37 billion of cash payments to reduce our debt, including $2.50 billion to pay down borrowings under our Revolving Credit Facility, $621 million for repayments of IMFT's debt obligations to Intel, $534 million to prepay our 2025 Notes, $266 million to settle conversions of notes, and $248 million for scheduled repayment of finance leases; $744 million for the acquisition of Intel's noncontrolling interest in IMFT; and $176 million for the acquisition of 3.6 million shares of our common stock under our share repurchase authorization. Cash used for financing activities was partially offset by proceeds of $2.50 billion from our Revolving Credit Facility, $1.25 billion from the 2023 Notes, and $1.25 billion from the Extinguished 2024 Term Loan A.

For 2019, net cash used for financing activities consisted primarily of $2.66 billion for the acquisition of 67 million shares of treasury stock under our share repurchase authorization and cash payments to reduce our debt, including $1.65 billion to settle conversions of notes, $728 million to prepay the 2022 Term Loan B, $316 million for repayments of IMFT's debt obligations to Intel, and $643 million for scheduled repayment of other notes and capital leases. Cash used for financing activities was partially offset by net proceeds of $3.53 billion from the aggregate issuance of the 2024 Notes, 2026 Notes, 2027 Notes, 2029 Notes, and 2030 Notes.

See "Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Debt."

Critical Accounting Estimates

The preparation of financial statements and related disclosures in conformity with U.S. GAAP requires management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues, expenses, and related disclosures. Estimates and judgments are based on historical experience, forecasted events, and various other assumptions that we believe to be reasonable under the circumstances. Estimates and judgments may vary under different assumptions or conditions. We evaluate our estimates and judgments on an ongoing basis. Our management believes the accounting policies below are critical in the portrayal of our financial condition and results of operations and require management's most difficult, subjective, or complex judgments.

***Contingencies*:** We are subject to the possibility of losses from various contingencies. Significant judgment is necessary to estimate the probability and amount of a loss, if any, from such contingencies. An accrual is made when it is probable that a liability has been incurred or an asset has been impaired and the amount of loss can be reasonably estimated. In accounting for the resolution of contingencies, significant judgment may be necessary to estimate amounts pertaining to periods prior to the resolution that are charged to operations in the period of resolution and amounts related to future periods.

***Goodwill*:** We test goodwill for impairment in our fourth quarter each year, or more frequently if indicators of an impairment exist, to determine whether it is more likely than not that the fair value of the reporting unit with goodwill is less than its carrying value. For reporting units for which this assessment concludes that it is more likely than not that the fair value is more than its carrying value, goodwill is considered not impaired and we are not required to perform the goodwill impairment test. Qualitative factors considered in this assessment include industry and market considerations, overall financial performance, and other relevant events and factors affecting the fair value of the reporting unit. For reporting units for which this assessment concludes that it is more likely than not that the fair value is below the carrying value, goodwill is tested for impairment by determining the fair value of each reporting unit and comparing it to the carrying value of the net assets assigned to the reporting unit. If the fair value of the reporting unit exceeds its carrying value, goodwill is considered not impaired. If the carrying value of the reporting unit exceeds its fair value, we would record an impairment loss up to the difference between the carrying value and implied fair value. For 2021, our qualitative assessment indicated that the fair value for all of our reporting units substantially exceeded their carrying value and that a quantitative assessment was unnecessary.

Determining when to test for impairment, the reporting units, the assets and liabilities of the reporting unit, and the fair value of the reporting unit requires significant judgment and involves the use of significant estimates and assumptions. These estimates and assumptions include revenue growth rates, forecasted manufacturing costs, and other expenses and are developed as part of our long-range planning process. The same estimates are used in business planning, forecasting, and capital budgeting as part of our long-term manufacturing capacity analysis. We test the reasonableness of the output of our long-range planning process by calculating an implied value per share and comparing that to current stock prices, analysts' consensus pricing, and management's expectations. These estimates and assumptions are used to calculate projected future cash flows for the reporting unit, which are discounted using a risk-adjusted rate to estimate a fair value. The discount rate requires determination of appropriate market comparables. We base fair value estimates on assumptions we believe to be reasonable but that are unpredictable and inherently uncertain. Actual future results may differ from those estimates.

***Income taxes*:** We are required to estimate our provision for income taxes and amounts ultimately payable or recoverable in numerous tax jurisdictions around the world. These estimates involve significant judgment and interpretations of regulations and are inherently complex. Resolution of income tax treatments in individual jurisdictions may not be known for many years after completion of the applicable year. We are also required to evaluate the realizability of our deferred tax assets on an ongoing basis in accordance with U.S. GAAP, which requires the assessment of our performance and other relevant factors. Realization of deferred tax assets is dependent on our ability to generate future taxable income. Our income tax provision or benefit is dependent, in part, on our ability to forecast future taxable income in Japan, the United States, and other jurisdictions. Such forecasts are inherently difficult and involve significant judgments including, among others, projecting future average selling prices and sales volumes, manufacturing and overhead costs, levels of capital spending, and other factors that significantly impact our analyses of the amount of net deferred tax assets that are more likely than not to be realized.

***Inventories*:** Inventories are stated at the lower of cost or net realizable value, with cost being determined on a FIFO basis. Effective as of the beginning of the second quarter of 2021, we changed our method of inventory costing from average cost to FIFO. Cost includes depreciation, labor, material, and overhead costs, including product and process technology costs. Determining net realizable value of inventories involves significant judgments, including projecting future average selling prices and future sales volumes. To project average selling prices and sales volumes, we review recent sales volumes, existing customer orders, current contract prices, industry analyses of supply and demand, seasonal factors, general economic trends, and other information. Actual selling prices and volumes may vary significantly from projected prices and volumes due to the volatile nature of the semiconductor memory and storage markets. When these analyses reflect estimated net realizable values below our manufacturing costs, we record a charge to cost of goods sold in advance of when inventories are actually sold. As a result, the timing of when product costs are charged to costs of goods sold can vary significantly. Differences in forecasted average selling prices used in calculating lower of cost or net realizable value adjustments can result in significant changes in the estimated net realizable value of product inventories and accordingly the amount of write-down recorded. For example, a 5% variance in the estimated selling prices would have changed the estimated net realizable value of our inventory by approximately $301 million as of September 2, 2021. Due to the volatile nature of the semiconductor memory and storage markets, actual selling prices and volumes often vary significantly from projected prices and volumes; as a result, the timing of when product costs are charged to operations can vary significantly.

U.S. GAAP provides for products to be grouped into categories in order to compare costs to net realizable values. The amount of any inventory write-down can vary significantly depending on the determination of inventory categories. We review the major characteristics of product type and markets in determining the unit of account for which we perform the lower of average cost or net realizable value analysis and categorize all inventories (including DRAM, NAND, and other memory) as a single group.

***Property, plant, and equipment*:** We periodically assess the estimated useful lives of our property, plant, and equipment based on technology node transitions, capital spending, and equipment re-use rates. We also review the carrying value of property, plant, and equipment for impairment when events and circumstances indicate that the carrying value of an asset or group of assets may not be recoverable from the estimated future cash flows expected to result from its use and/or disposition. In cases where undiscounted expected future cash flows are less than the carrying value, an impairment loss is recognized equal to the amount by which the carrying value exceeds the estimated fair value of the assets. The estimate of future cash flows involves numerous assumptions which require significant judgment by us, including, but not limited to, future use of the assets for our operations versus sale or disposal of the assets, future selling prices for our products, and future production and sales volumes. In addition, significant judgment is required in determining the groups of assets for which impairment tests are separately performed.

***Revenue recognition*:** Revenue is primarily recognized at a point in time when control of the promised goods is transferred to our customers in an amount that reflects the consideration we expect to be entitled to in exchange for those goods. Contracts with our customers are generally short-term in duration at fixed, negotiated prices with payment generally due shortly after delivery. We estimate a liability for returns using the expected value method based on historical returns. In addition, we generally offer price protection to our distributors, which is a form of variable consideration that decreases the transaction price. We use the expected value method, based on historical price adjustments and current pricing trends, to estimate the amount of revenue recognized from sales to distributors. Differences between the estimated and actual amounts are recognized as adjustments to revenue.

Recently Adopted Accounting Standards

See "Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Recently Adopted Accounting Standards."

Recently Issued Accounting Standards

No material items.

ITEM 7A. QUANTITATIVE AND QUALITATIVE DISCLOSURES ABOUT MARKET RISK

Interest Rate Risk

We are exposed to interest rate risk related to our indebtedness and our investment portfolio. As of September 2, 2021 and September 3, 2020, we had fixed-rate debt of $3.9 billion and $4.9 billion, respectively, and as a result, the fair value of our debt fluctuates with changes in market interest rates. We estimate that, as of September 2, 2021 and September 3, 2020, a decrease in market interest rates of 1% would increase the fair value of our fixed-rate debt by approximately $200 million and $300 million, respectively. As of September 2, 2021, we had variable-rate debt of $2.09 billion and, therefore, a 1% increase in the interest rates of our variable-rate debt would result in an increase in annual interest expense of approximately $21 million. As of September 3, 2020, we had variable-rate debt of $1.25 billion and, therefore, a 1% increase in the interest rates of our variable-rate debt would result in an increase in annual interest expense of approximately $13 million.

Foreign Currency Exchange Rate Risk

The information in this section should be read in conjunction with the information related to changes in the currency exchange rates in “Part I – Item 1A. Risk Factors.” Changes in currency exchange rates could materially adversely affect our results of operations or financial condition.

The functional currency for all of our operations is the U.S. dollar. The substantial majority of our sales are transacted in the U.S. dollar; however, significant amounts of our operating expenditures and capital purchases, and certain assets and liabilities, are incurred in or exposed to other currencies, primarily the euro, Malaysian ringgit, New Taiwan dollar, Singapore dollar, and yen. We have established currency risk management programs for our monetary assets and liabilities denominated in foreign currencies to hedge against fluctuations in the fair value and volatility of future cash flows caused by changes in currency exchange rates. We generally utilize currency forward contracts in these hedging programs, which reduce, but do not always entirely eliminate, the impact of currency exchange rate movements. We do not use derivative financial instruments for trading or speculative purposes.

Based on monetary assets and liabilities denominated in foreign currencies, we estimate that a 10% adverse change in exchange rates versus the U.S. dollar would result in losses of approximately $122 million as of September 2, 2021 and $98 million as of September 3, 2020. We hedge our exposure to changes in currency exchange rates by utilizing a rolling hedge strategy for our primary currency exposures with currency forward contracts that generally mature within three months. The effectiveness of our hedges is dependent, among other factors, upon our ability to accurately measure exposures on a timely basis. To hedge the exposure of changes in cash flows from changes in currency exchange rates for certain capital expenditures and manufacturing costs, we may utilize currency forward contracts that generally mature within two years. (See “Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Derivative Instruments.”)

ITEM 8. FINANCIAL STATEMENTS AND SUPPLEMENTARY DATA

Micron Technology, Inc.
Consolidated Statements of Operations

(in millions, except per share amounts)

For the year ended	September 2, 2021	September 3, 2020	August 29, 2019
Revenue	$ 27,705	$ 21,435	$ 23,406
Cost of goods sold	17,282	14,883	12,704
Gross margin	10,423	6,552	10,702
Research and development	2,663	2,600	2,441
Selling, general, and administrative	894	881	836
Restructure and asset impairments	488	60	(29)
Other operating (income) expense, net	95	8	78
Operating income	6,283	3,003	7,376
Interest income	37	114	205
Interest expense	(183)	(194)	(128)
Other non-operating income (expense), net	81	60	(405)
	6,218	2,983	7,048
Income tax (provision) benefit	(394)	(280)	(693)
Equity in net income (loss) of equity method investees	37	7	3
Net income	5,861	2,710	6,358
Net income attributable to noncontrolling interests	—	(23)	(45)
Net income attributable to Micron	$ 5,861	$ 2,687	$ 6,313
Earnings per share			
Basic	$ 5.23	$ 2.42	$ 5.67
Diluted	5.14	2.37	5.51
Number of shares used in per share calculations			
Basic	1,120	1,110	1,114
Diluted	1,141	1,131	1,143

See accompanying notes to consolidated financial statements.

Micron Technology, Inc.
Consolidated Statements of Comprehensive Income

(in millions)

For the year ended	September 2, 2021	September 3, 2020	August 29, 2019
Net income	$ 5,861	$ 2,710	$ 6,358
Other comprehensive income (loss), net of tax			
Gains (losses) on derivative instruments	(67)	46	(3)
Gains (losses) on investments	(7)	1	9
Pension liability adjustments	3	15	(6)
Foreign currency translation adjustments	2	—	(1)
Other comprehensive income (loss)	(69)	62	(1)
Total comprehensive income	5,792	2,772	6,357
Comprehensive income attributable to noncontrolling interests	—	(23)	(45)
Comprehensive income attributable to Micron	$ 5,792	$ 2,749	$ 6,312

See accompanying notes to consolidated financial statements.

Micron Technology, Inc.
Consolidated Balance Sheets

(in millions, except par value amounts)

As of	September 2, 2021	September 3, 2020
Assets		
Cash and equivalents	$ 7,763	$ 7,624
Short-term investments	870	518
Receivables	5,311	3,912
Inventories	4,487	5,373
Assets held for sale	974	—
Other current assets	502	538
Total current assets	19,907	17,965
Long-term marketable investments	1,765	1,048
Property, plant, and equipment	33,213	31,031
Operating lease right-of-use assets	551	584
Intangible assets	349	334
Deferred tax assets	782	707
Goodwill	1,228	1,228
Other noncurrent assets	1,054	781
Total assets	$ 58,849	$ 53,678
Liabilities and equity		
Accounts payable and accrued expenses	$ 5,325	$ 5,817
Current debt	155	270
Other current liabilities	944	548
Total current liabilities	6,424	6,635
Long-term debt	6,621	6,373
Noncurrent operating lease liabilities	504	533
Noncurrent unearned government incentives	808	643
Other noncurrent liabilities	559	498
Total liabilities	14,916	14,682
Commitments and contingencies		
Micron shareholders' equity		
Common stock, $0.10 par value, 3,000 shares authorized, 1,216 shares issued and 1,119 outstanding (1,194 shares issued and 1,113 outstanding as of September 3, 2020)	122	119
Additional capital	9,453	8,917
Retained earnings	39,051	33,384
Treasury stock, 97 shares held (81 shares as of September 3, 2020)	(4,695)	(3,495)
Accumulated other comprehensive income (loss)	2	71
Total equity	43,933	38,996
Total liabilities and equity	$ 58,849	$ 53,678

See accompanying notes to consolidated financial statements.

Micron Technology, Inc.
Consolidated Statements of Changes in Equity

(in millions, except per share amounts)

	Micron Shareholders								
	Common Stock								
	Number of Shares	Amount	Additional Capital	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income (Loss)	Total Micron Shareholders' Equity	Noncontrolling Interests in Subsidiaries	Total Equity
Balance at August 30, 2018	1,170	$ 117	$ 8,201	$ 24,395	$ (429)	$ 10	$ 32,294	$ 870	$33,164
Cumulative effect from adoption of new accounting standards	—	—	—	92	—	—	92	—	92
Net income	—	—	—	6,313	—	—	6,313	36	6,349
Other comprehensive income (loss), net	—	—	—	—	—	(1)	(1)	—	(1)
Stock issued under stock plans	14	1	178	—	—	—	179	—	179
Stock-based compensation expense	—	—	243	—	—	—	243	—	243
Repurchase of stock	(2)	—	103	(39)	(2,792)	—	(2,728)	—	(2,728)
Acquisitions of noncontrolling interest	—	—	1	—	—	—	1	(17)	(16)
Reclassification of redeemable convertible notes, net	—	—	3	—	—	—	3	—	3
Cash settlement of convertible notes	—	—	(515)	—	—	—	(515)	—	(515)
Balance at August 29, 2019	1,182	$ 118	$ 8,214	$ 30,761	$ (3,221)	$ 9	$ 35,881	$ 889	$36,770
Net income	—	—	—	2,687	—	—	2,687	15	2,702
Other comprehensive income (loss), net	—	—	—	—	—	62	62	—	62
Stock issued under stock plans	14	1	224	—	—	—	225	—	225
Stock-based compensation expense	—	—	328	—	—	—	328	—	328
Repurchase of stock	(2)	—	(11)	(64)	(176)	—	(251)	—	(251)
Settlement of capped calls	—	—	98	—	(98)	—	—	—	—
Acquisitions of noncontrolling interest	—	—	120	—	—	—	120	(904)	(784)
Cash settlement of convertible notes	—	—	(56)	—	—	—	(56)	—	(56)
Balance at September 3, 2020	1,194	$ 119	$ 8,917	$ 33,384	$ (3,495)	$ 71	$ 38,996	$ —	$38,996
Net income	—	—	—	5,861	—	—	5,861	—	5,861
Other comprehensive income (loss), net	—	—	—	—	—	(69)	(69)	—	(69)
Stock issued under stock plans	13	2	223	—	—	—	225	—	225
Stock-based compensation expense	—	—	378	—	—	—	378	—	378
Repurchase of stock	(2)	—	(12)	(82)	(1,200)	—	(1,294)	—	(1,294)
Stock issued for convertible notes	11	1	(1)	—	—	—	—	—	—
Cash settlement of convertible notes	—	—	(52)	—	—	—	(52)	—	(52)
Cash dividends declared ($0.10 per share)	—	—	—	(112)	—	—	(112)	—	(112)
Balance at September 2, 2021	1,216	$ 122	$ 9,453	$ 39,051	$ (4,695)	$ 2	$ 43,933	$ —	$43,933

See accompanying notes to consolidated financial statements.

Micron Technology, Inc.
Consolidated Statements of Cash Flows

(in millions)

For the year ended	September 2, 2021	September 3, 2020	August 29, 2019
Cash flows from operating activities			
Net income	$ 5,861	$ 2,710	$ 6,358
Adjustments to reconcile net income to net cash provided by operating activities			
Depreciation expense and amortization of intangible assets	6,214	5,650	5,424
Amortization of debt discount and other costs	30	26	49
Restructure and asset impairments	454	40	(97)
Stock-based compensation	378	328	243
(Gains) losses on debt prepayments, repurchases, and conversions	1	(40)	396
Change in operating assets and liabilities			
Receivables	(1,446)	(723)	2,431
Inventories	866	(435)	(1,489)
Accounts payable and accrued expenses	210	725	(174)
Deferred income taxes, net	(50)	79	150
Other	(50)	(54)	(102)
Net cash provided by operating activities	12,468	8,306	13,189
Cash flows from investing activities			
Expenditures for property, plant, and equipment	(10,030)	(8,223)	(9,780)
Purchases of available-for-sale securities	(3,163)	(1,857)	(4,218)
Proceeds from maturities of available-for-sale securities	1,250	814	1,541
Proceeds from sales of available-for-sale securities	856	1,458	1,504
Proceeds from government incentives	495	262	748
Other	3	(43)	120
Net cash provided by (used for) investing activities	(10,589)	(7,589)	(10,085)
Cash flows from financing activities			
Repayments of debt	(1,520)	(4,366)	(3,340)
Payments to acquire treasury stock	(1,294)	(251)	(2,729)
Payments on equipment purchase contracts	(295)	(63)	(75)
Acquisition of noncontrolling interest in IMFT	—	(744)	—
Proceeds from issuance of debt	1,188	5,000	3,550
Other	140	107	156
Net cash provided by (used for) financing activities	(1,781)	(317)	(2,438)
Effect of changes in currency exchange rates on cash, cash equivalents, and restricted cash	41	11	26
Net increase (decrease) in cash, cash equivalents, and restricted cash	139	411	692
Cash, cash equivalents, and restricted cash at beginning of period	7,690	7,279	6,587
Cash, cash equivalents, and restricted cash at end of period	$ 7,829	$ 7,690	$ 7,279
Supplemental disclosures			
Income taxes paid, net	$ (361)	$ (167)	$ (524)
Interest paid, net of amounts capitalized	(171)	(165)	(53)
Noncash equipment acquisitions on contracts payable and finance leases	684	278	119

See accompanying notes to consolidated financial statements.

Significant Accounting Policies

Basis of Presentation

Micron Technology, Inc., including its consolidated subsidiaries, is an industry leader in innovative memory and storage solutions transforming how the world uses information to enrich life *for all*. With a relentless focus on our customers, technology leadership, and manufacturing and operational excellence, Micron delivers a rich portfolio of high-performance DRAM, NAND, and NOR memory and storage products through our Micron® and Crucial® brands. Every day, the innovations that our people create fuel the data economy, enabling advances in artificial intelligence and 5G applications that unleash opportunities — from the data center to the intelligent edge and across the client and mobile user experience.

The accompanying consolidated financial statements include the accounts of Micron Technology, Inc. and our consolidated subsidiaries and have been prepared in accordance with accounting principles generally accepted in the United States of America. Intercompany balances and transactions have been eliminated in consolidation. Certain reclassifications have been made to prior period amounts to conform to current period presentation. See "Inventories" below for changes to our significant accounting policies, and the "Inventories" note for additional information.

Our fiscal year is the 52 or 53-week period ending on the Thursday closest to August 31. Fiscal 2021 contained 52 weeks, fiscal 2020 contained 53 weeks, and fiscal 2019 contained 52 weeks. Our fourth quarter of fiscal 2020 contained 14 weeks and all other fiscal quarters in the years presented contained 13 weeks. All period references are to our fiscal periods unless otherwise indicated.

Derivative and Hedging Instruments

We use derivative instruments to manage our exposure to changes in currency exchange rates from (1) our monetary assets and liabilities denominated in currencies other than the U.S. dollar and (2) forecasted cash flows for certain capital expenditures and manufacturing costs. We also use derivative instruments to manage our exposure to changes in commodity prices for manufacturing supplies and to minimize certain exposures to changes in the fair value of fixed-rate debt that result from fluctuations in benchmark interest rates. Derivative instruments are measured at their fair values and recognized as either assets or liabilities.

The accounting for changes in the fair value of derivative instruments is based on the intended use of the derivative and the resulting designation. For derivative instruments that are not designated for hedge accounting, gains or losses from changes in fair values are recognized in other non-operating income (expense). For derivative instruments designated as cash flow hedges, gains or losses are included as a component of accumulated other comprehensive income and reclassified into earnings in the same line items and in the same periods in which the underlying transactions affect earnings. For derivative instruments designated as cash flow hedges, time value is excluded from the assessment of effectiveness and the gains and losses attributable to time value are recognized in earnings. For derivative instruments designated as fair value hedges, changes in the fair values of the derivative instruments and the offsetting changes in the fair values of the underlying hedged items are both recognized in earnings.

We enter into master netting arrangements with our counterparties to mitigate credit risk in derivative hedge transactions. These master netting arrangements allow us and our counterparties to net settle amounts owed to each other. Derivative assets and liabilities that can be net settled with each counterparty have been presented in our consolidated balance sheet on a net basis.

Financial Instruments

Cash equivalents include highly liquid short-term investments with original maturities to us of three months or less that are readily convertible to known amounts of cash. Other investments with remaining maturities of less than one year are included in short-term investments. Investments with remaining maturities greater than one year are included in long-term marketable investments. The carrying value of investment securities sold is determined using the specific identification method.

Functional Currency

The U.S. dollar is the functional currency for us and all of our consolidated subsidiaries.

Goodwill

We perform an annual impairment assessment for goodwill in our fourth quarter each year.

Government Incentives

We receive incentives from governmental entities related to expenses, assets, and other activities. Our government incentives may require that we meet or maintain specified spending levels and other operational metrics and may be subject to reimbursement if such conditions are not met or maintained. Government incentives are recorded in the financial statements in accordance with their purpose: as a reduction of expenses, a reduction of asset costs, or other income. Incentives related to specific operating activities are offset against the related expense in the period the expense is incurred. Incentives related to the acquisition or construction of fixed assets are recognized as a reduction in the carrying amounts of the related assets and reduce depreciation expense over the useful lives of the assets. Other incentives are recognized as other operating income. Government incentives received prior to being earned are recognized in current or noncurrent deferred income, whereas government incentives earned prior to being received are recognized in current or noncurrent receivables. Cash received from government incentives related to operating expenses is included as an operating activity in the statement of cash flows, whereas cash received from incentives related to the acquisition of property, plant, and equipment is included as an investing activity.

Inventories

Effective as of the beginning of the second quarter of 2021, we changed the method of inventory costing from average cost to FIFO. The difference between average cost and FIFO was not material to any previously reported financial statements. Therefore, we have recognized the cumulative effect of the change as a reduction of inventories and a charge to cost of goods sold of $133 million as of the beginning of the second quarter of 2021.

Inventories are stated at the lower of cost or net realizable value, with cost being determined on a FIFO basis. Cost includes depreciation, labor, material, and overhead costs, including product and process technology costs. When net realizable value (which requires projecting future average selling prices, sales volumes, and costs to complete products in work in process inventories) is below cost, we record a charge to cost of goods sold to write down inventories to their estimated net realizable value in advance of when inventories are actually sold. We review the major characteristics of product type and markets in determining the unit of account for which we perform the lower of cost or net realizable value analysis and categorize all inventories (including DRAM, NAND, and other memory) as a single group. We remove amounts from inventory and charge such amounts to cost of goods sold on a FIFO basis.

Leases

We adopted ASC 842 in the first quarter of 2020 under the modified retrospective method and elected to not recast prior periods. We determine if an arrangement is a lease, or contains a lease, at the inception of the arrangement and evaluate whether the lease is an operating lease or a finance lease at the commencement date. We recognize right-of-use assets and lease liabilities for operating and finance leases with terms greater than 12 months. Right-of-use assets represent our right to use an asset for the lease term, while lease liabilities represent our obligation to make lease payments. We do not separate lease and non-lease components for real-estate and gas plant leases. Sublease income is presented within lease expense.

Product and Process Technology

Costs incurred to (1) acquire product and process technology, (2) patent technology, and (3) maintain patent technology, are capitalized and amortized on a straight-line basis over periods ranging up to 12.5 years. We capitalize a portion of costs incurred to patent technology based on historical data of patents issued as a percent of patents we file. Product and process technology costs are amortized over the shorter of (1) the estimated useful life of the technology, (2) the patent term, or (3) the term of the technology agreement. Fully-amortized assets are removed from product and process technology and accumulated amortization.

Product Warranty

We generally provide a limited warranty that our products are in compliance with applicable specifications existing at the time of delivery. Under our standard terms and conditions of sale, liability for certain failures of product during a stated warranty period is usually limited to repair or replacement of defective items or return of, or a credit with respect to, amounts paid for such items. Under certain circumstances, we provide more extensive limited warranty coverage than that provided under our standard terms and conditions. Our warranty obligations are not material.

Property, Plant, and Equipment

Property, plant, and equipment is stated at cost and depreciated using the straight-line method over estimated useful lives of generally 10 to 30 years for buildings, 5 to 7 years for equipment, and 3 to 5 years for software. Assets held for sale are carried at the lower of estimated fair value or carrying value and are included in current assets. When property, plant, or equipment is retired or otherwise disposed, the net book value is removed and we recognize any gain or loss in results of operations.

We capitalize interest on borrowings during the period of time we carry out the activities necessary to bring assets to the condition of their intended use and location. Capitalized interest becomes part of the cost of assets.

Research and Development

Costs related to the conceptual formulation and design of products and processes are charged to R&D expense as incurred. Development of a product is deemed complete when it is qualified through reviews and tests for performance and reliability. Subsequent to product qualification, product costs are included in cost of goods sold. Amounts from cost-sharing arrangements are reflected as a reduction of R&D expense.

Revenue Recognition

Revenue is primarily recognized at a point in time when control of the promised goods is transferred to our customers in an amount that reflects the consideration we expect to be entitled to in exchange for those goods. Contracts with our customers are generally short-term in duration at fixed, negotiated prices with payment generally due shortly after delivery. We estimate a liability for returns using the expected value method based on historical returns. In addition, we generally offer price protection to our distributors, which is a form of variable consideration that decreases the transaction price. We use the expected value method, based on historical price adjustments and current pricing trends, to estimate the amount of revenue recognized from sales to distributors. Differences between the estimated and actual amounts are recognized as adjustments to revenue.

Stock-based Compensation

Stock-based compensation is measured at the grant date, based on the fair value of the award, and recognized as expense under the straight-line attribution method over the requisite service period. We account for forfeitures as they occur. We issue new shares upon the exercise of stock options or conversion of share units.

Treasury Stock

Treasury stock is carried at cost. When we retire our treasury stock, any excess of the repurchase price paid over par value is allocated between additional capital and retained earnings.

Use of Estimates

The preparation of financial statements and related disclosures in conformity with accounting principles generally accepted in the United States of America requires our management to make estimates and judgments that affect the reported amounts of assets, liabilities, revenues, expenses, and related disclosures. Estimates and judgments are based on historical experience, forecasted events, and various other assumptions that we believe to be reasonable under the circumstances. Estimates and judgments may differ under different assumptions or conditions. We evaluate our estimates and judgments on an ongoing basis. Actual results could differ from estimates.

Recently Adopted Accounting Standards

In November 2018, the Financial Accounting Standards Board ("FASB") issued ASU 2018-18 – *Collaborative Arrangements*, which clarifies that certain transactions between collaborative arrangement participants should be accounted for as revenue when the collaborative arrangement participant is a customer in the context of a unit of account and precludes recognizing as revenue consideration received from a collaborative arrangement participant if the participant is not a customer. We adopted ASU 2018-18 in the first quarter of 2021 under the retrospective adoption method to the date we adopted ASC 606, which was August 31, 2018. The adoption of this ASU did not have a significant impact on our financial statements.

In June 2016, the FASB issued ASU 2016-13 – *Measurement of Credit Losses on Financial Instruments*, which requires a financial asset (or a group of financial assets) measured on the basis of amortized cost to be presented at the net amount expected to be collected. This ASU requires that the income statement reflect the measurement of credit losses for newly recognized financial assets as well as the increases or decreases of expected credit losses that have taken place during the period. This ASU requires that credit losses of debt securities designated as available-for-sale be recorded through an allowance for credit losses and limits the credit loss to the amount by which fair value is below amortized cost. We adopted ASU 2016-13 in the first quarter of 2021 under the modified retrospective adoption method. The adoption of this ASU did not have a significant impact on our financial statements.

Lehi, Utah Fab and 3D XPoint

In the second quarter of 2021, we updated our portfolio strategy to further strengthen our focus on memory and storage innovations for the data center market. In connection therewith, we determined that there was insufficient market validation to justify the ongoing investments required to commercialize 3D XPoint at scale. Accordingly, we ceased development of 3D XPoint technology and engaged in discussions with potential buyers for the sale of our facility located in Lehi that was dedicated to 3D XPoint production. As a result, we classified the property, plant, and equipment as held for sale and ceased depreciating the assets. On June 30, 2021, we announced a definitive agreement to sell our Lehi facility to TI for cash consideration of $900 million. The sale is anticipated to close in the first quarter of 2022.

In the third quarter of 2021, we recognized a charge of $435 million included in restructure and asset impairments (and a tax benefit of $104 million included in income tax (provision) benefit) to write down the assets held for sale to the expected consideration, net of estimated selling costs, to be realized from the sale of these assets and liabilities. The impairment charge was based on Level 3 inputs including expected consideration and the composition of assets included in the sale, which were derived from the agreement with TI. In the second quarter of 2021, we also recognized a charge of $49 million to cost of goods sold to write down 3D XPoint inventory due to our decision to cease further development of this technology.

As of September 2, 2021, the significant balances of assets held for sale in connection with our Lehi facility were as follows:

As of		September 2, 2021
Property, plant, and equipment	$	1,334
Other current assets		50
Impairment		(435)
Lehi assets held for sale	$	949

As of September 2, 2021, we also had a $50 million finance lease obligation included in the current portion of long-term debt and $11 million of other liabilities that we expect to transfer with the sale. The expected cash consideration, net of estimated selling expenses, approximates the carrying value of the net assets and liabilities expected to transfer in the sale, after giving effect to the impairment charge discussed above.

Variable Interest Entities

We have interests in entities that are variable interest entities ("VIEs"). If we are the primary beneficiary of a VIE, we are required to consolidate it. To determine if we are the primary beneficiary, we evaluate whether we have the power to direct the activities that most significantly impact the VIE's economic performance and the obligation to absorb losses or the right to receive benefits of the VIE that could potentially be significant to the VIE. Our evaluation includes identification of significant activities and an assessment of our ability to direct those activities based on governance provisions and arrangements to provide or receive product and process technology, product supply, operations services, equity funding, financing, and other applicable agreements and circumstances. Our assessments of whether we are the primary beneficiary of our VIEs require significant assumptions and judgments.

Through October 31, 2019, IMFT was a VIE because all of its costs were passed to us and its other member, Intel, through product purchase agreements and because IMFT was dependent upon us or Intel for additional cash requirements. The primary activities of IMFT were driven by the constant introduction of product and process technology. Because we performed a significant majority of the technology development, we had the power to direct its key activities. We consolidated IMFT due to this power and our obligation to absorb losses and the right to receive benefits from IMFT that could have been potentially significant to it.

On October 31, 2019, we paid $1.25 billion to acquire Intel's noncontrolling interest in IMFT and settle IMFT's debt obligations to Intel, at which time IMFT (now known as MTU) became a wholly-owned subsidiary. In connection therewith, we recognized a $160 million adjustment to equity for the difference between the $744 million of cash consideration allocated to Intel's noncontrolling interest and its $904 million carrying value.

IMFT manufactured semiconductor products exclusively for its members under a long-term supply agreement at prices approximating cost. In 2018, IMFT discontinued production of NAND and subsequent to that time manufactured 3D XPoint memory. IMFT sales to Intel were $158 million through the date of our purchase of Intel's noncontrolling interest in 2020, and $731 million in 2019.

Cash and Investments

Substantially all of our marketable debt and equity investments were classified as available-for-sale as of the dates noted below. Cash and equivalents and the fair values of our available-for-sale investments, which approximated amortized costs, were as follows:

	2021				2020			
As of	Cash and Equivalents	Short-term Investments	Long-term Marketable Investments[1]	Total Fair Value	Cash and Equivalents	Short-term Investments	Long-term Marketable Investments[1]	Total Fair Value
Cash	$ 5,796	$ —	$ —	$ 5,796	$ 3,996	$ —	$ —	$ 3,996
Level 1[2]								
Money market funds	38	—	—	38	1,828	—	—	1,828
Level 2[3]								
Certificates of deposits	1,907	69	—	1,976	1,740	10	2	1,752
Corporate bonds	9	429	1,134	1,572	3	266	592	861
Asset-backed securities	8	95	509	612	1	31	211	243
Government securities	1	190	122	313	6	115	243	364
Commercial paper	4	87	—	91	50	96	—	146
	7,763	$ 870	$ 1,765	$ 10,398	7,624	$ 518	$ 1,048	$ 9,190
Restricted cash[4]	66				66			
Cash, cash equivalents, and restricted cash	$ 7,829				$ 7,690			

(1) The maturities of long-term marketable securities range from one to four years.

(2) The fair value of Level 1 securities is measured based on quoted prices in active markets for identical assets.

(3) The fair value of Level 2 securities is measured using information obtained from pricing services, which obtain quoted market prices for similar instruments, non-binding market consensus prices that are corroborated by observable market data, or various other methodologies, to determine the appropriate value at the measurement date. We perform supplemental analysis to validate information obtained from these pricing services. No adjustments were made to the fair values indicated by such pricing information as of September 2, 2021 or September 3, 2020.

(4) Restricted cash is included in other noncurrent assets and primarily relates to certain government incentives received prior to being earned and for which restrictions lapse upon achieving certain performance conditions.

Gross realized gains and losses from sales of available-for-sale securities were not significant for any period presented.

In addition to the amounts included in the table above, we had $153 million and $92 million of non-marketable equity investments without a readily determinable fair value that were included in other noncurrent assets as of September 2, 2021 and September 3, 2020, respectively. We recognized gains in other non-operating income on these non-marketable investments of $70 million and $13 million for 2021 and 2020, respectively. These gains primarily resulted from adjustments of these investments to the value indicated by transactions in the same or similar investments.

Receivables

As of	2021	2020
Trade receivables	$ 4,920	$ 3,494
Income and other taxes	264	232
Other	127	186
	$ 5,311	$ 3,912

Inventories

As of	2021	2020
Finished goods	$ 513	$ 1,001
Work in process	3,469	3,854
Raw materials and supplies	505	518
	$ 4,487	$ 5,373

Effective as of the beginning of the second quarter of 2021, we changed our method of inventory costing from average cost to FIFO. This change in accounting principle is preferable because in an environment with continuously changing production costs FIFO more closely matches the actual cost of goods sold with the revenues from sales of those specific units, better represents the actual cost of inventories remaining on hand at any period-end, and improves comparability with our semiconductor industry peers. The change to FIFO was not material to any prior periods, nor was the cumulative effect of $133 million material to the second quarter of 2021. As such, prior periods were not retrospectively adjusted, and the cumulative effect was reported as an increase to cost of goods sold for the second quarter of 2021 of $133 million, with an offsetting reduction to beginning inventories. This charge resulted in a corresponding reduction to operating income, a $128 million reduction to net income, and an $0.11 reduction to diluted earnings per share for both the second quarter and the year ended 2021.

Beginning in the second quarter of 2021, we changed the classification of spare parts for equipment to better align with the manner in which they are used in operations. As a result, we now present spare parts as other current assets and no longer as a component of raw materials inventories. This reclassification was applied on a retrospective basis. As a result, $254 million of spare parts were presented in other current assets as of September 2, 2021, and we reclassified $234 million of spare parts from inventories to other current assets in the accompanying balance sheet as of September 3, 2020.

Property, Plant, and Equipment

As of	2021	2020
Land	$ 280	$ 352
Buildings	14,776	13,981
Equipment(1)	51,902	48,525
Construction in progress(2)	1,517	1,600
Software	987	873
	69,462	65,331
Accumulated depreciation	(36,249)	(34,300)
	$ 33,213	$ 31,031

(1) *Includes costs related to equipment not placed into service of $1.99 billion as of September 2, 2021 and $1.63 billion as of September 3, 2020.*

(2) *Includes building-related construction, tool installation, and software costs for assets not placed into service.*

Depreciation expense was $6.13 billion, $5.57 billion, and $5.34 billion for 2021, 2020, and 2019, respectively. Interest capitalized as part of the cost of property, plant, and equipment was $66 million, $77 million, and $103 million for 2021, 2020, and 2019, respectively.

We periodically assess the estimated useful lives of our property, plant, and equipment. Based on our assessment of planned technology node transitions, capital spending, and re-use rates, we revised the estimated useful lives of the existing equipment in our NAND wafer fabrication facilities and our research and development ("R&D") facilities from five years to seven years as of the beginning of the first quarter of 2020. This revision reduced our aggregate depreciation expense by approximately $675 million in 2020, of which approximately $165 million remained capitalized in inventory as of the end of 2020. After adjusting for the effect of the reduced amount of depreciation expense remaining in inventory, the revision in estimated useful lives benefited both operating income and net income by approximately $510 million and diluted earnings per share by approximately $0.45 for 2020.

Intangible Assets and Goodwill

	2021		2020	
As of	**Gross Amount**	**Accumulated Amortization**	**Gross Amount**	**Accumulated Amortization**
Product and process technology	$ 633	$ (284)	$ 616	$ (282)
Goodwill	1,228		1,228	

In 2021, 2020, and 2019, we capitalized $106 million, $73 million, and $91 million, respectively, for product and process technology with weighted-average useful lives of 9 years, 10 years, and 8 years, respectively. Amortization expense was $82 million, $78 million, and $82 million for 2021, 2020, and 2019, respectively. Expected amortization expense is $72 million for 2022, $61 million for 2023, $55 million for 2024, $34 million for 2025, and $26 million for 2026.

Leases

We have finance and operating leases through which we obtain the right to use equipment and facilities in our manufacturing operations and R&D activities as well as office space and other facilities used in our SG&A functions. Our finance leases consist primarily of gas or other supply agreements that are deemed to contain embedded leases in which we effectively control the underlying gas plants or other assets used to fulfill the supply agreements. Our operating leases consist primarily of offices, other facilities, and land used in SG&A, R&D, and certain of our manufacturing operations. Certain of our operating leases include one or more options to extend the lease term for periods from one year to 10 years for real estate and one year to 30 years for land.

Certain supply or service agreements require us to exercise significant judgment to determine whether the agreement contains a lease of a right-of-use asset. Our assessment includes determining whether we or the supplier control the assets used to fulfill the supply or service agreement by identifying whether we or the supplier have the right to change the type, quantity, timing, or location of the output of the assets. Our gas supply arrangements generally are deemed to contain a lease because we have the right to substantially all of the output of the assets used to produce the supply and we have the right to change the quantity and timing of the output of those assets. In determining the lease term, we assess whether we are reasonably certain to exercise options to renew or terminate a lease, and when or whether we would exercise an option to purchase the right-of-use asset. Measuring the present value of the initial lease liability requires judgment to determine the discount rate, which we base on interest rates for borrowings with similar terms and collateral issued by entities with credit ratings similar to ours.

Operating lease costs include short-term and variable lease expenses. Short-term, variable leases, and sublease income are not material for the periods presented. The components of lease expense are presented below:

For the year ended	2021	2020
Finance lease cost		
Amortization of right-of-use asset	$ 69	$ 140
Interest on lease liability	20	22
Operating lease cost	108	102
	$ 197	$ 264

Operating lease expense under the previous ASC 840 lease accounting guidance was $93 million for 2019.

Supplemental cash flow information related to leases was as follows:

For the year ended	2021	2020
Cash flows used for operating activities		
Finance leases	$ 21	$ 24
Operating leases[1]	106	39
Cash flows used for financing activities from financing leases	85	248
Noncash acquisitions of right-of-use assets		
Finance leases	395	107
Operating leases	27	11

[1] Includes $48 million of reimbursements received for tenant improvements for 2020.

Supplemental balance sheet information related to leases was as follows:

As of	2021	2020
Finance lease right-of-use assets (included in property, plant, and equipment and assets held for sale)	$ 766	$ 426
Current operating lease liabilities (included in accounts payable and accrued expenses)	55	54
Weighted-average remaining lease term (in years)		
Finance leases	5	5
Operating leases	7	7
Weighted-average discount rate		
Finance leases	3.14 %	4.51 %
Operating leases	2.63 %	2.67 %

Maturities of lease liabilities existing as of September 2, 2021 were as follows:

For the year ending	Finance Leases	Operating Leases
2022	$ 127	$ 68
2023	115	69
2024	89	61
2025	74	50
2026	74	47
2027 and thereafter	454	372
Less imputed interest	(130)	(108)
	$ 803	$ 559

The table above excludes any lease liabilities for leases that have been executed but have not yet commenced. As of September 2, 2021, we had such lease liabilities relating to (1) operating lease payment obligations of $147 million for the initial 10-year lease term for a building, which may, at our election, be terminated after 3 years or extended for an additional 10 years, and (2) finance lease obligations of $553 million over a weighted-average period of 15 years for gas supply arrangements deemed to contain embedded leases. We will recognize right-of-use assets and associated lease liabilities at the time such assets become available for our use.

Accounts Payable and Accrued Expenses

As of	2021	2020
Accounts payable	$ 1,744	$ 2,191
Property, plant, and equipment	1,887	2,374
Salaries, wages, and benefits	984	849
Income and other taxes	364	237
Other	346	166
	$ 5,325	$ 5,817

Debt

	2021						2020			
				Net Carrying Amount				Net Carrying Amount		
As of	Stated Rate	Effective Rate	Principal	Current	Long-Term	Total	Principal	Current	Long-Term	Total
Finance lease obligations	N/A	3.14 %	$ 803	$ 154	$ 649	$ 803	$ 486	$ 76	$ 410	$ 486
2023 Notes	2.497 %	2.64 %	1,250	—	1,247	1,247	1,250	—	1,245	1,245
2024 Notes	4.640 %	4.76 %	600	—	598	598	600	—	598	598
2024 Term Loan A	0.975 %	1.01 %	1,188	—	1,186	1,186	—	—	—	—
2026 Notes	4.975 %	5.07 %	500	—	498	498	500	—	498	498
2027 Notes[(1)]	4.185 %	4.27 %	900	—	901	901	900	—	895	895
2029 Notes	5.327 %	5.40 %	700	—	696	696	700	—	696	696
2030 Notes	4.663 %	4.73 %	850	—	846	846	850	—	845	845
2032D Notes	N/A	N/A	—	—	—	—	134	131	—	131
Extinguished 2024 Term Loan A	N/A	N/A	—	—	—	—	1,250	62	1,186	1,248
Other	N/A	N/A	1	1	—	1	1	1	—	1
			$ 6,792	$ 155	$ 6,621	$ 6,776	$ 6,671	$ 270	$ 6,373	$ 6,643

(1) *In 2021, we entered into fixed-to-floating interest rate swaps on the 2027 Notes with an aggregate $900 million notional amount equal to the principal amount of the 2027 Notes. The resulting variable interest paid is at a rate equal to SOFR plus approximately 3.33%. The fixed-to-floating interest rate swaps are accounted for as fair value hedges, as a result, the carrying value of our 2027 Notes reflects adjustments in fair value.*

As of September 2, 2021, all of our debt, other than our finance leases, are unsecured obligations that rank equally in right of payment with all of our other existing and future unsecured indebtedness and are effectively subordinated to all of our other existing and future secured indebtedness, to the extent of the value of the assets securing such indebtedness. As of September 2, 2021, Micron had $5.97 billion of unsecured debt (net of unamortized discount and debt issuance costs) that was structurally subordinated to all liabilities of its subsidiaries, including trade payables. The terms of our indebtedness generally contain cross payment default and cross acceleration provisions. Micron’s guarantees of its subsidiary debt obligations are unsecured obligations ranking equally in right of payment with all of Micron’s other existing and future unsecured indebtedness.

Senior Unsecured Notes

Our 2023 Notes, 2024 Notes, 2026 Notes, 2027 Notes, 2029 Notes, and 2030 Notes (the “Senior Unsecured Notes”) each contain covenants that, among other things, limit, in certain circumstances, our ability and/or the ability of our restricted subsidiaries (which are generally domestic subsidiaries in which we own at least 80% of the voting stock and which own principal property, as defined in the indenture governing such notes) to (1) create or incur certain liens; (2) enter into certain sale and lease-back transactions; and (3) consolidate with or merge with or into, or convey, transfer, or lease all or substantially all of our properties and assets, to another entity. These covenants are subject to a number of limitations and exceptions. Additionally, if a change of control triggering event occurs, as defined in the indentures governing our senior unsecured notes, we will be required to offer to purchase such notes at 101% of the outstanding aggregate principal amount plus accrued interest up to the purchase date.

Revolving Credit Facility

On May 14, 2021, we terminated our existing undrawn credit facility and entered into a new five-year unsecured Revolving Credit Facility. Under the Revolving Credit Facility, we can draw up to $2.50 billion which would generally bear interest at a rate equal to LIBOR plus 1.00% to 1.75%, depending on our corporate credit ratings. Any amounts outstanding under the Revolving Credit Facility would mature in May 2026 and amounts borrowed may be prepaid without penalty. As of September 2, 2021, no amounts were outstanding under the Revolving Credit Facility and $2.50 billion was available to us.

Under the terms of the Revolving Credit Facility, we must maintain a leverage ratio, calculated as of the last day of each fiscal quarter, of total indebtedness to adjusted EBITDA not to exceed 3.25 to 1.00. The Revolving Credit Facility contains other covenants that, among other things, limit, in certain circumstances, our ability and/or the ability of our restricted subsidiaries to (1) create or incur certain liens and enter into sale and lease-back transactions, (2) create, assume, incur, or guarantee certain additional secured indebtedness and unsecured indebtedness of our restricted subsidiaries, and (3) consolidate with or merge with or into, or convey, transfer, lease, or otherwise dispose of all or substantially all of our assets, to another entity. These covenants are subject to a number of limitations, exceptions, and qualifications.

2024 Term Loans

On May 14, 2021, we drew $1.19 billion under an unsecured 2024 Term Loan A and used the proceeds to repay the $1.19 billion Extinguished 2024 Term Loan A. The 2024 Term Loan A bears interest at a rate equal to LIBOR plus 0.625% to 1.375% based on our current corporate credit ratings. The principal amount is due October 2024 and may be prepaid without penalty. The 2024 Term Loan A contains the same leverage ratio and substantially the same other covenants as the Revolving Credit Facility.

Debt Activity

The table below presents the effects of issuances, prepayments, and settlements of debt conversions in 2021.

	Increase (Decrease) in Principal	Increase (Decrease) in Carrying Value	Increase (Decrease) in Cash	Decrease in Equity	Gain (Loss)
Issuance of 2024 Term Loan A	$ 1,188	$ 1,186	$ 1,186	$ —	$ —
Prepayment of Extinguished 2024 Term Loan A	(1,188)	(1,186)	(1,188)	—	(2)
Settlement of Conversions of 2032D Notes[(1)]	(134)	(134)	(185)	(52)	1
	$ (134)	$ (134)	$ (187)	$ (52)	$ (1)

[(1)] *In 2021, substantially all holders of our 2032D Notes converted their notes. We settled these conversions and all remaining 2032D Notes with $185 million in cash and 11.1 million shares of our stock.*

In 2020, we recognized aggregate non-operating gains of $40 million in connection with debt prepayments and conversions of $3.77 billion of principal amount of notes (carrying value of $3.90 billion) for an aggregate of $3.92 billion in cash.

In 2019, we recognized aggregate non-operating losses of $396 million in connection with debt prepayments, repurchases, and conversions of $1.80 billion of principal amount of notes (carrying value of $1.60 billion) for an aggregate of $2.38 billion in cash.

Maturities of Notes Payable

As of September 2, 2021, maturities of notes payable were as follows:

2022	$ 1
2023	1,250
2024	600
2025	1,188
2026	500
2027 and thereafter	2,450
Unamortized discounts	(21)
	$ 5,968

Commitments

As of September 2, 2021, we had commitments of approximately $6.5 billion for purchase obligations, of which approximately $5.0 billion will be due within one year. Purchase obligations include payments for the acquisition of property, plant, and equipment, and other goods or services of either a fixed or minimum quantity and exclude any lease payments for leases that have been executed but have not yet commenced.

Contingencies

We are currently a party to legal actions other than those described below arising from the normal course of business, none of which are expected to have a material adverse effect on our business, results of operations, or financial condition.

Patent Matters

As is typical in the semiconductor and other high-tech industries, from time to time, others have asserted, and may in the future assert, that our products or manufacturing processes infringe upon their intellectual property rights.

On August 12, 2014, MLC Intellectual Property, LLC filed a patent infringement action against Micron in the U.S. District Court for the Northern District of California. The complaint alleges that Micron infringes a single U.S. patent and seeks damages, attorneys' fees, and costs.

On November 21, 2014, Elm 3DS Innovations, LLC ("Elm") filed a patent infringement action against Micron; Micron Semiconductor Products, Inc.; and Micron Consumer Products Group, Inc. in the U.S. District Court for the District of Delaware. On March 27, 2015, Elm filed an amended complaint against the same entities. The amended complaint alleges that unspecified semiconductor products of ours that incorporate multiple stacked die infringe 13 U.S. patents and seeks damages, attorneys' fees, and costs. On July 14, 2021, the action was dismissed with prejudice pursuant to a stipulation of dismissal filed by the parties.

On December 15, 2014, Innovative Memory Solutions, Inc. filed a patent infringement action against Micron in the U.S. District Court for the District of Delaware. The complaint alleges that a variety of our NAND products infringe eight U.S. patents and seeks damages, attorneys' fees, and costs. Subsequently, six patents were invalidated or withdrawn, leaving two asserted patents in the District Court.

On March 19, 2018, Micron Semiconductor (Xi'an) Co., Ltd. ("MXA") was served with a patent infringement complaint filed by Fujian Jinhua Integrated Circuit Co., Ltd. ("Jinhua") in the Fuzhou Intermediate People's Court in Fujian Province, China (the "Fuzhou Court"). On April 3, 2018, Micron Semiconductor (Shanghai) Co. Ltd. ("MSS") was served with the same complaint. The complaint alleges that MXA and MSS infringe a Chinese patent by manufacturing and selling certain Crucial DDR4 DRAM modules. The complaint seeks an order requiring MXA and MSS to destroy inventory of the accused products and equipment for manufacturing the accused products in China;

to stop manufacturing, using, selling, and offering for sale the accused products in China; and to pay damages of 98 million Chinese yuan plus court fees incurred.

On March 21, 2018, MXA was served with a patent infringement complaint filed by United Microelectronics Corporation ("UMC") in the Fuzhou Court. On April 3, 2018, MSS was served with the same complaint. The complaint alleges that MXA and MSS infringe a Chinese patent by manufacturing and selling certain Crucial DDR4 DRAM modules. The complaint seeks an order requiring MXA and MSS to destroy inventory of the accused products and equipment for manufacturing the accused products in China; to stop manufacturing, using, selling, and offering for sale the accused products in China; and to pay damages of 90 million Chinese yuan plus court fees incurred.

On April 3, 2018, MSS was served with another patent infringement complaint filed by Jinhua and an additional complaint filed by UMC in the Fuzhou Court. The additional complaints allege that MSS infringes two Chinese patents by manufacturing and selling certain Crucial MX300 SSDs. The complaint filed by UMC seeks an order requiring MSS to destroy inventory of the accused products and equipment for manufacturing the accused products in China; to stop manufacturing, using, selling, and offering for sale the accused products in China; and to pay damages of 90 million Chinese yuan plus court fees incurred. The complaint filed by Jinhua seeks an order requiring MSS to destroy inventory of the accused products and equipment for manufacturing the accused products in China; to stop manufacturing, using, selling, and offering for sale the accused products in China; and to pay damages of 98 million Chinese yuan plus court fees incurred.

On July 5, 2018, MXA and MSS were notified that the Fuzhou Court granted a preliminary injunction against those entities that enjoins them from manufacturing, selling, or importing certain Crucial and Ballistix-branded DRAM modules and solid-state drives in China. The affected products made up slightly more than 1% of our annualized revenue in 2018. We are complying with the ruling and have requested the Fuzhou Court to reconsider or stay its decision.

On May 4, 2020, Flash-Control, LLC filed a patent infringement action against Micron in the U.S. District Court for the Western District of Texas. The complaint alleges that four U.S. patents are infringed by unspecified DDR4 SDRAM, NVRDIMM, NVDIMM, 3D XPoint, and/or SSD products that incorporate memory controllers and flash memory. The complaint seeks damages, attorneys' fees, and costs. On July 21, 2020, in a separate matter, the District Court ruled that two of the four asserted patents are invalid, and on July 14, 2021, the U.S. Court of Appeals for the Federal Circuit affirmed the ruling of invalidity.

On April 28, 2021, Netlist, Inc. filed two patent infringement actions against Micron, Micron Semiconductor Products, Inc. and Micron Technology Texas, LLC in the U.S. District Court for the Western District of Texas. The first complaint alleges that a single U.S. patent is infringed by certain of our non-volatile dual in-line memory modules. The second complaint alleges that three U.S. patents are infringed by certain of our load-reduced dual in-line memory modules. Each complaint seeks injunctive relief, damages, attorneys' fees, and costs.

On May 10, 2021, Vervain, LLC filed a patent infringement action against Micron, Micron Semiconductor Products, Inc., and Micron Technology Texas, LLC in the U.S. District Court for the Western District of Texas. The complaint alleges that four U.S. patents are infringed by certain SSD products. The complaint seeks injunctive relief, damages, attorneys' fees, and costs.

Among other things, the above lawsuits pertain to substantially all of our DRAM, NAND, and other memory and storage products we manufacture, which account for substantially all of our revenue.

Qimonda

On January 20, 2011, Dr. Michael Jaffé, administrator for Qimonda's insolvency proceedings, filed suit against Micron and Micron Semiconductor B.V. ("Micron B.V."), in the District Court of Munich, Civil Chamber. The complaint seeks to void, under Section 133 of the German Insolvency Act, a share purchase agreement between Micron B.V. and Qimonda signed in fall 2008, pursuant to which Micron B.V. purchased substantially all of Qimonda's shares of Inotera (the "Inotera Shares"), representing approximately 18% of Inotera's outstanding shares at that time, and seeks an order requiring us to re-transfer those shares to the Qimonda estate. The complaint also seeks, among other things, to recover damages for the alleged value of the joint venture relationship with Inotera and to terminate, under Sections 103 or 133 of the German Insolvency Code, a patent cross-license between us and Qimonda entered into at the same time as the share purchase agreement.

Following a series of hearings with pleadings, arguments, and witnesses on behalf of the Qimonda estate, on March 13, 2014, the court issued judgments: (1) ordering Micron B.V. to pay approximately $1 million in respect of certain Inotera Shares sold in connection with the original share purchase; (2) ordering Micron B.V. to disclose certain information with respect to any Inotera Shares sold by it to third parties; (3) ordering Micron B.V. to disclose the benefits derived by it from ownership of the Inotera Shares, including in particular, any profits distributed on the Inotera Shares and all other benefits; (4) denying Qimonda's claims against Micron for any damages relating to the joint venture relationship with Inotera; and (5) determining that Qimonda's obligations under the patent cross-license agreement are canceled. In addition, the court issued interlocutory judgments ordering, among other things: (1) that Micron B.V. transfer to the Qimonda estate the Inotera Shares still owned by Micron B.V. and pay to the Qimonda estate compensation in an amount to be specified for any Inotera Shares sold to third parties; and (2) that Micron B.V. pay the Qimonda estate as compensation an amount to be specified for benefits derived by Micron B.V. from ownership of the Inotera Shares. The interlocutory judgments had no immediate, enforceable effect and Micron, accordingly, has been able to continue to operate with full control of the Inotera Shares subject to further developments in the case. On April 17, 2014, Micron and Micron B.V. filed a notice of appeal with the German Appeals Court challenging the District Court's decision. After opening briefs, the Appeals Court held a hearing on the matter on July 9, 2015, and thereafter appointed an independent expert to perform an evaluation of Dr. Jaffé's claims that the amount Micron paid for Qimonda was less than fair market value. On January 25, 2018, the court-appointed expert issued a report concluding that the amount paid by Micron was within an acceptable fair-value range. The Appeals Court held a subsequent hearing on April 30, 2019, and on May 28, 2019, the Appeals Court remanded the case to the expert for supplemental expert opinion. On March 31, 2020, the expert presented a revised opinion to the Appeals Court which reaffirmed the earlier view that the amount paid by Micron was still within an acceptable range of fair value. On March 4, 2021, the Appeals Court issued an order setting forth a new legal view that whether the 2008 sale of Inotera Shares is voidable depends on the question whether, in October 2008, Qimonda had a restructuring plan in place, and whether Micron was aware of and reasonably relied on that restructuring plan sufficient to form a belief that Qimonda was not imminently illiquid.

Antitrust Matters

On April 27, 2018, a complaint was filed against Micron and other DRAM suppliers in the U.S. District Court for the Northern District of California. Subsequently, two substantially identical cases were filed in the same court. The lawsuits purported to be on behalf of a nationwide class of indirect purchasers of DRAM products. On September 3, 2019, the District Court granted Micron's motion to dismiss and allowed the plaintiffs the opportunity to file a consolidated, amended complaint. On October 28, 2019, the plaintiffs filed a consolidated, amended complaint that purported to be on behalf of a nationwide class of indirect purchasers of DRAM products. The amended complaint asserted claims based on alleged price-fixing of DRAM products under federal and state law during the period from June 1, 2016 to at least February 1, 2018, and sought treble monetary damages, costs, interest, attorneys' fees, and other injunctive and equitable relief. On December 21, 2020, the District Court dismissed the plaintiffs' claims and entered judgment against them. On January 19, 2021, the plaintiffs filed a notice of appeal to the U.S. Court of Appeals for the Ninth Circuit. On May 3, 2021, several plaintiffs filed a substantially identical complaint in the U.S. District Court for the Northern District of California purportedly on behalf of a nationwide class of indirect purchasers of DRAM products. On July 19, 2021, the District Court dismissed the May 3, 2021 complaint pursuant to an agreement between the plaintiffs and Micron providing that the plaintiffs may refile the complaint if the District Court's December 21, 2020 dismissal order is not affirmed on appeal.

On June 26, 2018, a complaint was filed against Micron and other DRAM suppliers in the U.S. District Court for the Northern District of California. Subsequently, four substantially identical cases were filed in the same court. On October 28, 2019, the plaintiffs filed a consolidated, amended complaint. The consolidated complaint purported to be on behalf of a nationwide class of direct purchasers of DRAM products. The consolidated complaint asserted claims based on alleged price-fixing of DRAM products under federal and state law during the period from June 1, 2016 through at least February 1, 2018, and sought treble monetary damages, costs, interest, attorneys' fees, and other injunctive and equitable relief. On December 21, 2020, the District Court granted Micron's motion to dismiss and granted the plaintiffs permission to file a further amended complaint. On January 11, 2021, the plaintiffs filed a further amended complaint asserting substantially the same claims and seeking the same relief. On September 3, 2021, the District Court granted Micron's motion to dismiss the further amended complaint with prejudice.

Additionally, six cases have been filed in the following Canadian courts: Superior Court of Quebec, the Federal Court of Canada, the Ontario Superior Court of Justice, and the Supreme Court of British Columbia. The substantive allegations in these cases are similar to those asserted in the cases filed in the United States.

On May 15, 2018, the Chinese State Administration for Market Regulation ("SAMR") notified Micron that it was investigating potential collusion and other anticompetitive conduct by DRAM suppliers in China. On May 31, 2018, SAMR made unannounced visits to our sales offices in Beijing, Shanghai, and Shenzhen to seek certain information as part of its investigation. We are cooperating with SAMR in its investigation.

Securities Matters

On March 5, 2019, a derivative complaint was filed by a shareholder against certain current and former officers and directors of Micron, allegedly on behalf of and for the benefit of Micron, in the U.S. District Court for the District of Delaware alleging securities fraud, breaches of fiduciary duties, and other violations of law involving misrepresentations about purported anticompetitive behavior in the DRAM industry. The complaint seeks damages, fees, interest, costs, and other appropriate relief.

On February 9, 2021, a derivative complaint was filed by a shareholder against Sanjay Mehrotra and other current and former directors of Micron, allegedly on behalf of and for the benefit of Micron, in the U.S. District Court for the District of Delaware alleging violations of securities laws, breaches of fiduciary duties, and other violations of law involving allegedly false and misleading statements about Micron's commitment to diversity and progress in diversifying its workforce, executive leadership, and Board of Directors. The complaint seeks damages, fees, interest, costs, and an order requiring Micron to take various actions to allegedly improve its corporate governance and internal procedures.

Other

On December 5, 2017, Micron filed a complaint against UMC and Jinhua in the U.S. District Court for the Northern District of California. The complaint alleges that UMC and Jinhua violated the Defend Trade Secrets Act, the civil provisions of the Racketeer Influenced and Corrupt Organizations Act, and California's Uniform Trade Secrets Act by misappropriating Micron's trade secrets and other misconduct. Micron's complaint seeks damages, restitution, disgorgement of profits, injunctive relief, and other appropriate relief.

On June 13, 2019, current Micron employee, Chris Manning, filed a putative class action lawsuit on behalf of Micron employees subject to the Idaho Wage Claim Act who earned a performance-based bonus after the conclusion of 2018 whose performance rating was calculated based upon a mandatory percentage distribution range of performance ratings. On July 12, 2019, Manning and three other Company employees filed an amended complaint as putative class action representatives. On behalf of themselves and the putative class, Manning and the three other plaintiffs assert claims for violation of the Idaho Wage Claim Act, breach of contract, breach of the covenant of good faith and fair dealing, and fraud. On June 24, 2020, the court entered judgment in favor of Micron based on the statute of limitations, and the plaintiffs filed a notice of appeal on July 23, 2020.

On July 31, 2020, Micron and Intel entered into a binding arbitration agreement under which the parties agreed to present to an arbitral panel various financial disputes related to the IMFT joint venture between Micron and Intel, which ended October 31, 2019, and to other agreements relating to the joint development, production, and sale of non-volatile memory products. Each party alleges that the other owes damages relating to allegations of breach of one or more agreements.

On July 13, 2015, Allied Telesis, Inc. and Allied Telesis International (Asia) Pte Ltd. filed a complaint against Micron in the Superior Court of California in Santa Clara alleging breach of implied and express warranties and fraudulent inducement to contract arising from plaintiffs' purchase of certain allegedly defective DDR1 products between 2008 and 2010. Through subsequent amendments to the complaint, the plaintiffs substituted Allied Telesis K.K. as plaintiff, withdrew the warranty claims, and added claims of fraudulent concealment, negligent misrepresentation, negligence, and strict products liability. The plaintiff's amended complaint seeks an unspecified award of damages, including punitive damages and lost profits. On September 3, 2020, the Superior Court granted summary judgment dismissing the claims for negligence and strict products liability and denied summary judgment as to the claims for negligent misrepresentation, fraudulent concealment, and fraudulent inducement to contract. A trial is scheduled to begin on January 10, 2022.

In the normal course of business, we are a party to a variety of agreements pursuant to which we may be obligated to indemnify another party. It is not possible to predict the maximum potential amount of future payments under these types of agreements due to the conditional nature of our obligations and the unique facts and circumstances involved in each particular agreement. Historically, our payments under these types of agreements have not had a material adverse effect on our business, results of operations, or financial condition.

We are unable to predict the outcome of the patent matters, Qimonda matter, antitrust matters, securities matters, binding arbitration with Intel, or any other matters noted above, and cannot make a reasonable estimate of the potential loss or range of possible losses. A determination that our products or manufacturing processes infringe the intellectual property rights of others or entering into a license agreement covering such intellectual property could result in significant liability and/or require us to make material changes to our products and/or manufacturing processes. Any of the foregoing, as well as the resolution of any other legal matter noted above, could have a material adverse effect on our business, results of operations, or financial condition.

We are currently a party to legal actions other than those described in this note arising from the normal course of business, none of which are expected to have a material adverse effect on our business, results of operations, or financial condition.

Equity

Micron Shareholders' Equity

***Common Stock Repurchases*:** Our Board of Directors has authorized the discretionary repurchase of up to $10 billion of our outstanding common stock through open-market purchases, block trades, privately-negotiated transactions, derivative transactions, and/or pursuant to Rule 10b5-1 trading plans. The repurchase authorization has no expiration date, does not obligate us to acquire any common stock, and is subject to market conditions and our ongoing determination of the best use of available cash. We repurchased 15.6 million shares of our common stock for $1.20 billion in 2021 and 3.6 million shares for $176 million in 2020. Through September 2, 2021, we had repurchased an aggregate of $4.04 billion under the authorization. Amounts repurchased are included in treasury stock.

***Dividends*:** On August 2, 2021, we announced that our Board of Directors had declared a quarterly dividend of $0.10 per share, payable in cash on October 18, 2021, to shareholders of record as of the close of business on October 1, 2021.

***Accumulated Other Comprehensive Income*:** Changes in accumulated other comprehensive income by component for the year ended September 2, 2021 were as follows:

	Gains (Losses) on Derivative Instruments	Pension Liability Adjustments	Unrealized Gains (Losses) on Investments	Cumulative Foreign Currency Translation Adjustment	Total
As of September 3, 2020	$ 45	$ 19	$ 8	$ (1)	$ 71
Other comprehensive income before reclassifications	(52)	8	(6)	2	(48)
Amount reclassified out of accumulated other comprehensive income	(41)	(1)	(3)	—	(45)
Tax effects	26	(4)	2	—	24
Other comprehensive income (loss)	(67)	3	(7)	2	(69)
As of September 2, 2021	$ (22)	$ 22	$ 1	$ 1	$ 2

Fair Value Measurements

The estimated fair values and carrying values of our outstanding debt instruments (excluding the carrying value of equity components of our convertible notes) were as follows:

	2021		2020	
As of	Fair Value	Carrying Value	Fair Value	Carrying Value
Notes	$ 6,584	$ 5,973	$ 6,710	$ 6,026
Convertible notes	—	—	634	131

The fair values of our convertible notes were determined based on Level 2 inputs, including the trading price of our convertible notes when available, our stock price, and interest rates based on similar debt issued by parties with credit ratings similar to ours. The fair values of our other debt instruments were estimated based on Level 2 inputs, including the trading price of our notes when available, discounted cash flows, and interest rates based on similar debt issued by parties with credit ratings similar to ours.

Assets classified as held for sale are carried at the lower of estimated fair value or carrying value. Significant judgments and assumptions are required to estimate their fair values. Actual selling prices could vary significantly from our estimated fair value and we could recognize additional losses in the event that the sales prices of assets classified as held for sale are lower than their carrying values.

Derivative Instruments

	Notional or Contractual Amount	Fair Value of	
		Assets(1)	Liabilities(2)
As of September 2, 2021			
Derivative instruments with hedge accounting designation			
Cash flow currency hedges	$ 3,601	$ 10	$ (66)
Cash flow commodity hedges	45	2	—
Fair value interest rate hedges	900	5	—
Derivative instruments without hedge accounting designation			
Non-designated currency hedges	996	3	(2)
		$ 20	$ (68)
As of September 3, 2020			
Derivative instruments with hedge accounting designation			
Cash flow currency hedges	$ 1,845	$ 41	$ (2)
Derivative instruments without hedge accounting designation			
Non-designated currency hedges	1,587	4	(1)
		$ 45	$ (3)

(1) *Included in receivables – other and other noncurrent assets.*
(2) *Included in accounts payable and accrued expenses – other and other noncurrent liabilities.*

Derivative Instruments with Hedge Accounting Designation

Cash Flow Hedges: We utilize forward and swap contracts that generally mature within two years designated as cash flow hedges for our exposure to changes in currency exchange rates or commodity prices for certain capital expenditures and manufacturing costs. Forward and swap contracts are measured at fair value based on market-based observable inputs including market spot and forward rates, interest rates, and credit-risk spreads (Level 2). We do not use derivative instruments for speculative purposes. We recognized losses of $52 million and gains of $51 million for 2021 and 2020, respectively, in accumulated other comprehensive income from cash flow hedges. The amounts recognized in 2019 were not significant. We recognized losses of $14 million in 2021 in cost of goods sold related to the amounts excluded from hedge effectiveness testing. The amounts recognized in 2020 and 2019 were not significant. We reclassified $41 million of gains in 2021 from accumulated other comprehensive income to earnings, primarily to cost of goods sold. The reclassifications were not significant in 2020 or 2019. As of September 2, 2021, we expect to reclassify $12 million of pre-tax losses related to cash flow hedges from accumulated other comprehensive income into earnings in the next 12 months. Substantially all of the cash flow hedging relates to foreign currency contracts for all periods presented, and the commodity hedges had an immaterial impact.

***Fair Value Hedges*:** We utilize fixed-to-floating interest rate swaps designated as fair value hedges to minimize certain exposures to changes in the fair value of fixed-rate debt that result from fluctuations in benchmark interest rates. Interest rate swaps are measured at fair value based on market-based observable inputs including interest rates and credit-risk spreads (Level 2). The changes in the fair values of derivatives designated as fair value hedges and the offsetting changes in the underlying fair values of the hedged items are both recognized in earnings. When a derivative is no longer designated as a fair value hedge for any reason, including termination and maturity, the remaining unamortized difference between the carrying value of the hedged item at that time and the face value of the hedged item is amortized to earnings over the remaining life of the hedged item, or immediately if the hedged item has matured or been extinguished. The effects of fair value hedges on our consolidated statements of operations, recognized in interest expense, were not significant for the periods presented.

Derivative Instruments without Hedge Accounting Designation

***Currency Derivatives*:** We generally utilize a rolling hedge strategy with currency forward contracts that mature within three months to hedge our exposures of monetary assets and liabilities from changes in currency exchange rates. At the end of each reporting period, monetary assets and liabilities denominated in currencies other than the U.S. dollar are remeasured into U.S. dollars and the associated outstanding forward contracts are marked to market. Currency forward contracts are valued at fair values based on the middle of bid and ask prices of dealers or exchange quotations (Level 2). Realized and unrealized gains and losses on derivative instruments without hedge accounting designation as well as the changes in the underlying monetary assets and liabilities from changes in currency exchange rates are included in other non-operating income (expense), net. For derivative instruments without hedge accounting designation, we recognized gains of $21 million and losses of $32 million for 2020 and 2019, respectively. The amounts recognized in 2021 were not significant.

***Convertible Notes Settlement Obligations*:** For settlement obligations associated with our convertible notes subject to mark-to-market accounting treatment, the fair values of the underlying derivative settlement obligations were initially determined using the Black-Scholes option valuation model (Level 2), which requires inputs of stock price, expected stock-price volatility, estimated option life, risk-free interest rate, and dividend rate. The subsequent measurement amounts were based on the volume-weighted-average trading price of our common stock (Level 2). (See "Debt.") We recognized losses $14 million and $58 million for 2020 and 2019, respectively, in other non-operating income (expense), net for the changes in fair value of the derivative settlement obligations. The amounts recognized in 2021 were not significant.

Derivative Counterparty Credit Risk and Master Netting Arrangements

Our derivative instruments expose us to credit risk to the extent counterparties may be unable to meet the terms of the contracts. Our maximum exposure to loss due to credit risk if counterparties fail completely to perform according to the terms of the contracts would generally equal the fair value of assets for these contracts as listed in the tables above. We seek to mitigate such risk by limiting our counterparties to major financial institutions and by spreading risk across multiple financial institutions. As of September 2, 2021 and September 3, 2020, amounts netted under our master netting arrangements were not significant.

Equity Plans

As of September 2, 2021, 104 million shares of our common stock were available for future awards under our equity plans, including 23 million shares approved for issuance under our employee stock purchase plan ("ESPP").

Restricted Stock and Restricted Stock Units ("Restricted Stock Awards")

As of September 2, 2021, there were 20 million shares of Restricted Stock Awards outstanding, 17 million of which contained only service conditions. For service-based Restricted Stock Awards, restrictions generally lapse in one-fourth or one-third increments during each year of employment after the grant date. Restrictions generally lapse on Restricted Stock with performance or market conditions as conditions are met over a 3-year period. At the end of the performance period, the number of actual shares to be awarded will vary between 0% and 200% of target amounts, depending upon the achievement level. Restricted Stock Awards activity for 2021 is summarized as follows:

	Number of Shares	Weighted-Average Grant Date Fair Value Per Share
Outstanding as of September 3, 2020	17	$ 42.13
Granted	11	53.58
Restrictions lapsed	(6)	38.99
Canceled	(2)	41.54
Outstanding as of September 2, 2021	20	49.39

For the year ended	2021	2020	2019
Restricted stock award shares granted	11	8	9
Weighted-average grant-date fair value per share	$ 53.58	$ 46.44	$ 41.11
Aggregate vesting-date fair value of shares vested	$ 385	$ 294	$ 248

Employee Stock Purchase Plan ("ESPP")

Our ESPP was offered to substantially all employees beginning in August 2018 and permitted eligible employees to purchase shares of our common stock through payroll deductions of up to 10% of their eligible compensation, subject to certain limitations prior to August 2021. Beginning in August 2021, employees are permitted to deduct up to 15% of their eligible compensation to purchase shares under the ESPP. The purchase price of the shares under the ESPP equals 85% of the lower of the fair market value of our common stock on either the first or last day of each six-month offering period. Compensation expense is calculated as of the beginning of the offering period as the fair value of the employees' purchase rights utilizing the Black-Scholes option valuation model and is recognized over the offering period. Grant-date fair value and assumptions used in the Black-Scholes option valuation model were as follows:

For the year ended	2021	2020	2019
Weighted-average grant-date fair value per share	$ 20.71	$ 14.24	$ 11.60
Average expected life in years	0.5	0.5	0.5
Weighted-average expected volatility	41 %	45 %	45 %
Weighted-average risk-free interest rate	0.1 %	0.8 %	2.2 %
Expected dividend yield	0.3 %	0.0 %	0.0 %

Under the ESPP, employees purchased 3 million shares of common stock for $140 million in 2021 and 3 million shares for $118 million in 2020.

Stock Options

As of September 2, 2021, stock options of 4 million shares were outstanding, which are generally exercisable in increments of either one-fourth or one-third per year beginning one year from the date of grant. Stock options expire 8 years from the date of grant. We did not grant any stock options in 2021 or 2020 and options granted in 2019 were not material. Stock options of 3 million shares were exercised in 2021. The total intrinsic value for options exercised was $143 million, $130 million, and $108 million in 2021, 2020, and 2019, respectively.

Stock-based Compensation Expense

For the year ended	2021	2020	2019
Stock-based compensation expense by caption			
Cost of goods sold	$ 186	$ 139	$ 102
Research and development	110	86	68
Selling, general, and administrative	99	103	73
	$ 395	$ 328	$ 243
Stock-based compensation expense by type of award			
Restricted stock awards	$ 333	$ 272	$ 178
ESPP	52	39	32
Stock options	10	17	33
	$ 395	$ 328	$ 243

Income tax benefits related to the tax deductions for share-based awards are recognized only upon the settlement of the related share-based awards. Income tax benefits for share-based awards were $83 million, $72 million, and $66 million for 2021, 2020, and 2019, respectively. Stock-based compensation expense of $30 million and $42 million was capitalized and remained in inventory as of September 2, 2021 and September 3, 2020, respectively. As of September 2, 2021, $691 million of total unrecognized compensation costs for unvested awards, before the effect of any future forfeitures, was expected to be recognized through the fourth quarter of 2025, resulting in a weighted-average period of 1.2 years.

Employee Benefit Plans

We have employee retirement plans at our U.S. and international sites. Details of significant plans are as follows:

Employee Savings Plan for U.S. Employees

We have a 401(k) retirement plan under which U.S. employees may contribute up to 75% of their eligible pay, subject to Internal Revenue Service annual contribution limits, to various savings alternatives, none of which include direct investment in our stock. We match in cash eligible contributions from employees up to 5% of the employee's annual eligible earnings. Contribution expense for the 401(k) plan was $77 million, $66 million, and $67 million in 2021, 2020, and 2019, respectively.

Retirement Plans

We have pension plans available to employees at various foreign sites. As of September 2, 2021, the projected benefit obligations of our plans were $222 million and plan assets were $256 million. As of September 3, 2020, the projected benefit obligations of our plans were $202 million and plan assets were $222 million. Pension expense was not material for 2021, 2020, or 2019.

Revenue and Customer Contract Liabilities

Revenue by Technology

Revenue by technology is presented in the table below:

For the year ended	2021	2020	2019
DRAM	$ 20,039	$ 14,510	$ 16,841
NAND	7,007	6,131	5,355
Other (primarily 3D XPoint memory and NOR)	659	794	1,210
	$ 27,705	$ 21,435	$ 23,406

Beginning in 2020, revenues for MCPs and SSDs, which contain both DRAM and NAND, are disaggregated into DRAM and NAND based on the relative values of each component. The amounts for 2019 in the table above have been conformed to the current period presentation.

See "Segment and Other Information" for disclosure of disaggregated revenue by market segment.

Customer Contract Liabilities

Our contract liabilities from customer advances are for advance payments received from customers to secure product in future periods. Other contract liabilities consist of amounts received in advance of satisfying performance obligations. These balances are reported within other current liabilities and other noncurrent liabilities. Revenue recognized during 2021 from the ending balance of 2020 included $64 million from meeting performance obligations of other contract liabilities and shipments against customer advances. The following table presents contract liabilities:

As of	2021	2020
Contract liabilities from customer advances	$ 74	$ 40
Other contract liabilities	—	25
	$ 74	$ 65

Revenue is primarily recognized at a point in time when control of the promised goods is transferred to our customers in an amount that reflects the consideration we expect to be entitled to in exchange for those goods. Substantially all contracts with our customers are short-term in duration at fixed, negotiated prices with payment generally due shortly after delivery. From time to time, we have contracts with initial terms that include performance obligations that extend beyond one year. As of September 2, 2021, our future performance obligations were $117 million, substantially all of which are expected to be recognized as revenue within one year.

As of September 2, 2021 and September 3, 2020, other current liabilities included $846 million and $466 million for estimates of consideration payable to customers, respectively, including estimates for pricing adjustments and returns.

Restructure and Asset Impairments

For the year ended	2021	2020	2019
Restructure and asset impairments	$ 488	$ 60	$ (29)

Restructure and asset impairments for 2021 are primarily due to the planned sale of our Lehi, Utah facility. (See "Lehi, Utah Fab and 3D XPoint.") Restructure and asset impairments for 2020 primarily related to asset impairments and employee relocation and severance costs related to right-sizing our Lehi, Utah facility. In 2019, we finalized the sale of our 200mm fabrication facility in Singapore and recognized restructure gains of $128 million. Other restructure and asset impairments for 2019 primarily related to our continued emphasis to centralize certain key functions.

Other Operating (Income) Expense, Net

For the year ended	2021	2020	2019
Patent license charges	$ 128	$ —	$ —
(Gain) loss on disposition of property, plant, and equipment	(24)	(3)	43
Other	(9)	11	35
	$ 95	$ 8	$ 78

Other Non-Operating Income (Expense), Net

For the year ended	2021	2020	2019
Gain (loss) on investments	$ 82	$ 22	$ (4)
Gain (loss) on debt prepayments, repurchases, and conversions	(1)	40	(396)
Other	—	(2)	(5)
	$ 81	$ 60	$ (405)

Income Taxes

Our income tax (provision) benefit consisted of the following:

For the year ended	2021	2020	2019
Income (loss) before income taxes, net income (loss) attributable to noncontrolling interests, and equity in net income (loss) of equity method investees			
U.S.	$ (211)	$ 308	$ (67)
Foreign	6,429	2,675	7,115
	$ 6,218	$ 2,983	$ 7,048
Income tax (provision) benefit			
Current			
U.S. federal	$ (42)	$ (20)	$ (36)
State	(1)	(2)	(2)
Foreign	(370)	(148)	(319)
	(413)	(170)	(357)
Deferred			
U.S. federal	(9)	39	(146)
State	28	23	91
Foreign	—	(172)	(281)
	19	(110)	(336)
Income tax (provision) benefit	$ (394)	$ (280)	$ (693)

The table below reconciles our tax (provision) benefit based on the U.S. federal statutory rate to our effective rate:

For the year ended	2021		2020		2019	
U.S. federal income tax (provision) benefit at statutory rate	$ (1,306)	21.0 %	$ (626)	21.0 %	$ (1,480)	21.0 %
Change in unrecognized tax benefits	(238)	3.8 %	(33)	1.1 %	(59)	0.8 %
U.S. tax on foreign operations	(226)	3.6 %	(14)	0.5 %	(327)	4.6 %
Foreign tax rate differential	951	(15.3)%	253	(8.5)%	993	(14.1)%
Debt premium deductions	130	(2.1)%	—	— %	—	— %
Research and development tax credits	123	(2.0)%	62	(2.1)%	92	(1.3)%
Change in valuation allowance	54	(0.9)%	(20)	0.7 %	(40)	0.6 %
State taxes, net of federal benefit	59	(0.9)%	23	(0.8)%	102	(1.4)%
Foreign derived intangible income deduction	18	(0.3)%	67	(2.2)%	—	— %
Other	41	(0.6)%	8	(0.3)%	26	(0.4)%
Income tax (provision) benefit	$ (394)	6.3 %	$ (280)	9.4 %	$ (693)	9.8 %

We operate in a number of jurisdictions outside the United States, including Singapore, where we have tax incentive arrangements. These incentives expire, in whole or in part, at various dates through 2034 and are conditional, in part, upon meeting certain business operations and employment thresholds. The effect of tax incentive arrangements reduced our tax provision by $758 million (benefiting our diluted earnings per share by $0.66) for 2021, by $215 million ($0.19 per diluted share) for 2020, and by $756 million ($0.66 per diluted share) for 2019.

As of September 2, 2021, certain non-U.S. subsidiaries had cumulative undistributed earnings of $3.53 billion that were deemed to be indefinitely reinvested. A provision has not been recognized to the extent that distributions from such subsidiaries are subject to additional foreign withholding or state income tax. Determination of the amount of unrecognized deferred tax liabilities related to investments in these foreign subsidiaries is not practicable.

Pursuant to SEC Staff Accounting Bulletin No. 118, measurement period adjustments in 2019 related to the Tax Cuts and Jobs Act included $47 million of benefit for the repatriation tax, net of adjustments related to uncertain tax positions. We recognize the foreign minimum tax in the period the tax is incurred.

Deferred income taxes reflect the net tax effects of temporary differences between the bases of assets and liabilities for financial reporting and income tax purposes as well as carryforwards. Deferred tax assets and liabilities consist of the following:

As of	2021	2020
Deferred tax assets		
Net operating loss and tax credit carryforwards	$ 783	$ 912
Accrued salaries, wages, and benefits	206	176
Operating lease liabilities	109	114
Property, plant, and equipment	37	—
Other	115	91
Gross deferred tax assets	1,250	1,293
Less valuation allowance	(233)	(294)
Deferred tax assets, net of valuation allowance	1,017	999
Deferred tax liabilities		
Right-of-use assets	(90)	(95)
Product and process technology	(12)	(57)
Property, plant, and equipment	—	(50)
Other	(143)	(99)
Deferred tax liabilities	(245)	(301)
Net deferred tax assets	$ 772	$ 698
Reported as		
Deferred tax assets	$ 782	$ 707
Deferred tax liabilities (included in other noncurrent liabilities)	(10)	(9)
Net deferred tax assets	$ 772	$ 698

We assess positive and negative evidence for each jurisdiction to determine whether it is more likely than not that existing deferred tax assets will be realized. As of September 2, 2021, and September 3, 2020, we had a valuation allowance of $233 million and $294 million, respectively, against our net deferred tax assets, primarily related to carryforwards in Malaysia and Japan. Changes in 2021 in the valuation allowance were due to loss expirations during the year, offset by adjustments based on management's assessment of tax credits, allowances and net operating losses that are more likely than not to be realized.

As of September 2, 2021, our net operating loss carryforward amounts and expiration periods, as reported to tax authorities, were as follows:

Year of Expiration	State	Japan	Malaysia	Singapore	Other	Total
2022 - 2026	$ 49	$ 617	$ —	$ —	$ 1	$ 667
2027 - 2031	537	—	—	—	—	537
2032 - 2036	355	—	—	—	—	355
2037 - 2041	61	—	—	—	—	61
Indefinite	1	—	606	477	7	1,091
	$ 1,003	$ 617	$ 606	$ 477	$ 8	$ 2,711

As of September 2, 2021, our federal and state tax credit carryforward amounts and expiration periods, as reported to tax authorities, were as follows:

Year of Tax Credit Expiration	U.S. Federal	State	Total
2022 - 2026	$ —	$ 45	$ 45
2027 - 2031	—	84	84
2032 - 2036	32	132	164
2037 - 2041	364	5	369
Indefinite	—	104	104
	$ 396	$ 370	$ 766

Below is a reconciliation of the beginning and ending amount of our unrecognized tax benefits:

For the year ended	2021	2020	2019
Beginning unrecognized tax benefits	$ 411	$ 383	$ 261
Increases related to tax positions from prior years	2	14	124
Increases related to tax positions taken in current year	260	27	44
Decreases related to tax positions from prior years	(13)	(13)	(46)
Ending unrecognized tax benefits	$ 660	$ 411	$ 383

As of September 2, 2021, gross unrecognized tax benefits were $660 million, substantially all of which would affect our effective tax rate in the future, if recognized. Increases to unrecognized tax benefits were primarily due to tax return positions taken during 2021. Amounts accrued for interest and penalties related to uncertain tax positions were not significant for any period presented. The resolution of tax audits or expiration of statute of limitations could also reduce our unrecognized tax benefits. Although the timing of final resolution is uncertain, the estimated potential reduction in our unrecognized tax benefits in the next 12 months would not be significant.

We and our subsidiaries file income tax returns with the U.S. federal government, various U.S. states, and various foreign jurisdictions throughout the world. We regularly engage in discussions and negotiations with tax authorities regarding tax matters, including transfer pricing, and we continue to defend any and all such claims presented. Our U.S. federal and state tax returns remain open to examination for 2017 through 2021. We are currently under audit by the Internal Revenue Service for our 2018 and 2019 tax years. In addition, tax returns that remain open to examination in Singapore, Taiwan and Japan range from the years 2015 to 2021. We believe that adequate amounts of taxes and related interest and penalties have been provided, and any adjustments as a result of examinations are not expected to materially adversely affect our business, results of operations, or financial condition.

Earnings Per Share

For the year ended	2021	2020	2019
Net income attributable to Micron – Basic	$ 5,861	$ 2,687	$ 6,313
Assumed conversion of debt	—	(4)	(12)
Net income attributable to Micron – Diluted	$ 5,861	$ 2,683	$ 6,301
Weighted-average common shares outstanding – Basic	1,120	1,110	1,114
Dilutive effect of equity plans and convertible notes	21	21	29
Weighted-average common shares outstanding – Diluted	1,141	1,131	1,143
Earnings per share			
Basic	$ 5.23	$ 2.42	$ 5.67
Diluted	5.14	2.37	5.51

Antidilutive potential common shares excluded from the computation of diluted earnings per share, that could dilute basic earnings per share in the future, were as follows at the end of the periods shown:

For the year ended	2021	2020	2019
Equity plans	2	5	8

Segment and Other Information

Segment information reported herein is consistent with how it is reviewed and evaluated by our chief operating decision maker. We have the following four business units, which are our reportable segments:

***Compute and Networking Business Unit ("CNBU")*:** Includes memory products sold into client, cloud server, enterprise, graphics, and networking markets.
***Mobile Business Unit ("MBU")*:** Includes memory and storage products sold into smartphone and other mobile-device markets.
***Storage Business Unit ("SBU")*:** Includes SSDs and component-level solutions sold into enterprise and cloud, client, and consumer storage markets, and other discrete storage products sold in component and wafer form.
***Embedded Business Unit ("EBU")*:** Includes memory and storage products sold into automotive, industrial, and consumer markets.

Certain operating expenses directly associated with the activities of a specific segment are charged to that segment. Other indirect operating income and expenses are generally allocated to segments based on their respective percentage of cost of goods sold or forecasted wafer production. We do not identify or report internally our assets (other than goodwill) or capital expenditures by segment, nor do we allocate gains and losses from equity method investments, interest, other non-operating income or expense items, or taxes to segments. As of September 2, 2021 and September 3, 2020, CNBU, MBU, SBU, and EBU had goodwill of $832 million, $198 million, $101 million, and $97 million, respectively.

For the year ended	2021	2020	2019
Revenue			
CNBU	$ 12,280	$ 9,184	$ 9,968
MBU	7,203	5,702	6,403
SBU	3,973	3,765	3,826
EBU	4,209	2,759	3,137
All Other	40	25	72
	$ 27,705	$ 21,435	$ 23,406
Operating income (loss)			
CNBU	$ 4,295	$ 2,010	$ 4,645
MBU	2,173	1,074	2,606
SBU	173	36	(386)
EBU	1,006	301	923
All Other	20	(2)	13
	7,667	3,419	7,801
Unallocated			
Stock-based compensation	(395)	(328)	(243)
Inventory accounting policy change to FIFO	(133)	—	—
Change in inventory cost absorption	(160)	—	—
3D XPoint inventory write-down	(49)	—	—
Restructure and asset impairments	(488)	(60)	32
Patent license charges	(128)	—	—
Employee severance	—	—	(116)
Other	(31)	(28)	(98)
	(1,384)	(416)	(425)
Operating income	$ 6,283	$ 3,003	$ 7,376

Depreciation and amortization expense included in operating income was as follows:

For the year ended	2021	2020	2019
CNBU	$ 2,497	$ 2,318	$ 1,833
MBU	1,101	1,436	1,235
SBU	1,028	1,115	1,555
EBU	1,553	741	748
All Other	8	12	27
Unallocated	27	28	26
	$ 6,214	$ 5,650	$ 5,424

Certain Concentrations

Revenue by market segment as an approximate percent of total revenue is presented in the table below:

For the year ended	2021	2020	2019
Mobile	25 %	25 %	25 %
Client and graphics	20 %	20 %	20 %
Enterprise and cloud server	20 %	20 %	20 %
SSDs and other storage	15 %	20 %	15 %
Automotive, industrial, and consumer	15 %	15 %	15 %

Revenue from WPG Holdings Limited was 13% of total revenue in 2021. Revenue from Kingston Technology Company, Inc. was 11% of total revenue for 2020 and 2019. Revenue from Huawei Technologies Co. Ltd. was 12% of total revenue for 2019. Our sales to WPG were included in our MBU, CNBU, EBU, and SBU segments; our sales to Kingston were included in our CNBU, MBU, and SBU segments; and our sales to Huawei were included in our MBU, CNBU, SBU, and EBU segments.

We generally have multiple sources of supply for our raw materials and production equipment; however, only a limited number of suppliers are capable of delivering certain raw materials and production equipment that meet our standards and, in some cases, materials or production equipment are provided by a single supplier.

Financial instruments that potentially subject us to concentrations of credit risk consist principally of cash, money market accounts, certificates of deposit, fixed-rate debt securities, trade receivables, share repurchase, and derivative contracts. We invest through high-credit-quality financial institutions and, by policy, generally limit the concentration of credit exposure by restricting investments with any single obligor and monitoring credit risk of bank counterparties on an ongoing basis. A concentration of credit risk may exist with respect to receivables of certain customers. We perform ongoing credit evaluations of customers worldwide and generally do not require collateral from our customers. Historically, we have not experienced material losses on receivables. A concentration of risk may also exist with respect to our foreign currency hedges as the number of counterparties to our hedges is limited and the notional amounts are relatively large. We seek to mitigate such risk by limiting our counterparties to major financial institutions and through entering into master netting arrangements.

Geographic Information

Revenue based on the geographic location of our customers' headquarters was as follows:

For the year ended	2021	2020	2019
United States	$ 12,155	$ 10,381	$ 12,451
Taiwan	6,606	3,657	2,703
Mainland China (excluding Hong Kong)	2,456	2,337	3,595
Hong Kong	2,582	1,792	1,614
Japan	1,652	1,387	958
Other Asia Pacific	1,420	1,157	1,032
Other	834	724	1,053
	$ 27,705	$ 21,435	$ 23,406

Long-lived assets by geographic area consisted of property, plant, and equipment and right-of-use assets and were as follows:

As of	2021	2020
Taiwan	$ 11,457	$ 10,516
Singapore	9,411	8,161
Japan	7,222	6,478
United States[(1)]	5,205	5,434
Malaysia	757	385
China	436	478
Other	175	163
	$ 34,663	$ 31,615

(1) *Included $899 million (net of impairment) as of September 2, 2021 of property, plant, and equipment for our Lehi facility that was classified as held for sale and presented in other current assets.*

Report of Independent Registered Public Accounting Firm

To the Board of Directors and Shareholders of Micron Technology, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Micron Technology, Inc. and its subsidiaries (the "Company") as of September 2, 2021 and September 3, 2020, and the related consolidated statements of operations, of comprehensive income, of changes in equity and of cash flows for each of the three years in the period ended September 2, 2021, including the related notes and schedule of valuation and qualifying accounts for each of the three years in the period ended September 2, 2021 appearing under Item 15 (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of September 2, 2021, based on criteria established in *Internal Control – Integrated Framework* (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission (COSO).

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of September 2, 2021 and September 3, 2020, and the results of its operations and its cash flows for each of the three years in the period ended September 2, 2021 in conformity with accounting principles generally accepted in the United States of America. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of September 2, 2021, based on criteria established in *Internal Control – Integrated Framework* (2013) issued by the COSO.

Changes in Accounting Principle

As discussed in the Significant Accounting Policies and Inventories notes to the consolidated financial statements, the Company changed the manner in which it accounts for inventory costing from the average cost inventory accounting method to the first-in, first-out inventory accounting method and the manner in which it classifies spare parts for equipment from raw materials inventories to other current assets in 2021, and the manner in which it accounts for leases in 2020.

Basis for Opinions

The Company's management is responsible for these consolidated financial statements, for maintaining effective internal control over financial reporting, and for its assessment of the effectiveness of internal control over financial reporting, included in Management's Report on Internal Control Over Financial Reporting appearing under Item 9A. Our responsibility is to express opinions on the Company's consolidated financial statements and on the Company's internal control over financial reporting based on our audits. We are a public accounting firm registered with the Public Company Accounting Oversight Board (United States) (PCAOB) and are required to be independent with respect to the Company in accordance with the U.S. federal securities laws and the applicable rules and regulations of the Securities and Exchange Commission and the PCAOB.

We conducted our audits in accordance with the standards of the PCAOB. Those standards require that we plan and perform the audits to obtain reasonable assurance about whether the consolidated financial statements are free of material misstatement, whether due to error or fraud, and whether effective internal control over financial reporting was maintained in all material respects.

Our audits of the consolidated financial statements included performing procedures to assess the risks of material misstatement of the consolidated financial statements, whether due to error or fraud, and performing procedures that respond to those risks. Such procedures included examining, on a test basis, evidence regarding the amounts and disclosures in the consolidated financial statements. Our audits also included evaluating the accounting principles used and significant estimates made by management, as well as evaluating the overall presentation of the consolidated financial statements. Our audit of internal control over financial reporting included obtaining an understanding of internal control over financial reporting, assessing the risk that a material weakness exists, and testing and evaluating the design and operating effectiveness of internal control based on the assessed risk. Our audits also included performing such other procedures as we considered necessary in the circumstances. We believe that our audits provide a reasonable basis for our opinions.

Definition and Limitations of Internal Control over Financial Reporting

A company's internal control over financial reporting is a process designed 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. A company's internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that, in reasonable detail, accurately and fairly reflect the transactions and dispositions of the assets of the company; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that receipts and expenditures of the company are being made only in accordance with authorizations of management and directors of the company; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of the company's assets that could have a material effect on the financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions, or that the degree of compliance with the policies or procedures may deteriorate.

Critical Audit Matters

The critical audit matter communicated below is a matter arising from the current period audit of the consolidated financial statements that was communicated or required to be communicated to the audit committee and that (i) relates to accounts or disclosures that are material to the consolidated financial statements and (ii) involved our especially challenging, subjective, or complex judgments. The communication of critical audit matters does not alter in any way our opinion on the consolidated financial statements, taken as a whole, and we are not, by communicating the critical audit matter below, providing a separate opinion on the critical audit matter or on the accounts or disclosures to which it relates.

Valuation of Inventories (Finished goods and Work in process)

As described in the Significant Accounting Policies and Inventories notes to the consolidated financial statements, as of September 2, 2021, the Company had a net inventory balance for finished goods and work in process inventory totaling approximately $4 billion. As disclosed by management, determining the net realizable value of the Company's net inventories involves significant judgments, including projecting future average selling prices and future sales volumes.

The principal considerations for our determination that performing procedures relating to the valuation of finished goods and work in process inventories is a critical audit matter are the significant judgment by management in determining the net realizable value of inventories, which in turn led to significant auditor judgment, subjectivity and effort in performing procedures over the reasonableness of the significant assumptions related to future average selling prices and future sales volumes, used to estimate the net realizable value of finished goods and work in process inventories.

Addressing the matter involved performing procedures and evaluating audit evidence in connection with forming our overall opinion on the consolidated financial statements. These procedures included testing the effectiveness of controls relating to management's estimate of the net realizable value of finished goods and work in process inventories, significant assumptions, and data used to value the inventories. These procedures also included, among others, testing management's process for developing the net realizable value estimate of finished goods and work in process inventories; evaluating the appropriateness of management's estimated net realizable value methodology; testing the completeness, accuracy, and relevance of underlying data used in the estimate of net realizable value of finished goods and work in process inventories; and evaluating the reasonableness of management's assumptions related to future average selling prices and future sales volumes. Evaluating management's assumptions related to future average selling prices and future sales volumes involved evaluating whether the assumptions used by management were reasonable considering (i) current and past results, including recent sales, (ii) the consistency with external market, industry data and current contract prices, (iii) a comparison of the prior year estimates to actual results in the current year, and (iv) whether these assumptions were consistent with evidence obtained in other areas of the audit.

/s/ PricewaterhouseCoopers LLP

San Jose, California
October 8, 2021

We have served as the Company’s auditor since 1984.

ITEM 9. CHANGES IN AND DISAGREEMENTS WITH ACCOUNTANTS ON ACCOUNTING AND FINANCIAL DISCLOSURE

None.

ITEM 9A. CONTROLS AND PROCEDURES

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

During the fourth quarter of 2021, there were no changes in our internal control over financial reporting that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting. Internal control over financial reporting is a process designed to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with accounting principles generally accepted in the United States of America. Our internal control over financial reporting includes those policies and procedures that (i) pertain to the maintenance of records that in reasonable detail accurately reflect the transactions and dispositions of our assets; (ii) provide reasonable assurance that transactions are recorded as necessary to permit preparation of financial statements in accordance with generally accepted accounting principles, and that our receipts and expenditures are being made only in accordance with authorizations of our management and directors; and (iii) provide reasonable assurance regarding prevention or timely detection of unauthorized acquisition, use, or disposition of our assets that could have a material effect on our financial statements.

Because of its inherent limitations, internal control over financial reporting may not prevent or detect misstatements. Also, projections of any evaluation of effectiveness to future periods are subject to the risk that controls may become inadequate because of changes in conditions or that the degree of compliance with the policies or procedures may deteriorate.

Management conducted an evaluation of the effectiveness of our internal control over financial reporting based on the framework in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission. Based on this evaluation, management concluded that our internal control over financial reporting was effective as of September 2, 2021. The effectiveness of our internal control over financial reporting as of September 2, 2021 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report, which is included in Part II, Item 8, of this Form 10-K.

ITEM 9B. OTHER INFORMATION

None.

ITEM 9C. DISCLOSURE REGARDING FOREIGN JURISDICTIONS THAT PREVENT INSPECTIONS

Not applicable.

PART III

ITEM 10. DIRECTORS, EXECUTIVE OFFICERS, AND CORPORATE GOVERNANCE

ITEM 11. EXECUTIVE COMPENSATION

ITEM 12. SECURITY OWNERSHIP OF CERTAIN BENEFICIAL OWNERS AND MANAGEMENT AND RELATED STOCKHOLDER MATTERS

ITEM 13. CERTAIN RELATIONSHIPS AND RELATED TRANSACTIONS, AND DIRECTOR INDEPENDENCE

ITEM 14. PRINCIPAL ACCOUNTANT FEES AND SERVICES

Certain information concerning our executive officers is included under the caption, “Information About Our Executive Officers” in Part I, Item 1 of this report. Other information required by Items 10, 11, 12, 13, and 14 will be contained in our 2021 Proxy Statement which will be filed with the SEC within 120 days after September 2, 2021 and is incorporated herein by reference.

PART IV

ITEM 15. EXHIBITS AND FINANCIAL STATEMENT SCHEDULE

(a) The following documents are filed as part of this report:

1. Financial Statements: See our consolidated financial statements under Item 8.
2. Financial Statement Schedule:
   See "Schedule II – Valuation and Qualifying Accounts" within Item 15 below.

   Certain Financial Statement Schedules have been omitted since they are either not required, not applicable, or the information is otherwise included.

3. Exhibits. See "Index to Exhibits" within Item 15 below.

SCHEDULE II

VALUATION AND QUALIFYING ACCOUNTS
(in millions)

	Balance at Beginning of Year	Charged (Credited) to Income Tax Provision	Currency Translation and Charges to Other Accounts	Balance at End of Year
Deferred Tax Asset Valuation Allowance				
Year ended September 2, 2021	$ 294	$ (54)	$ (7)	$ 233
Year ended September 3, 2020	277	20	(3)	294
Year ended August 29, 2019	228	40	9	277

Index to Exhibits

Exhibit Number	Description of Exhibit	Filed Herewith	Form	Period Ending	Exhibit/ Appendix	Filing Date
3.1	Restated Certificate of Incorporation of the Registrant		8-K		99.2	1/26/15
3.2	Bylaws of the Registrant, Amended and Restated		8-K		3.1	2/16/21
4.1	Indenture, dated as of February 6, 2019, by and between Micron Technology, Inc. and U.S. Bank National Association, as Trustee		8-K		4.1	2/6/19
4.2	First Supplemental Indenture, dated as of February 6, 2019, by and between Micron Technology, Inc. and U.S. Bank National Association, as Trustee		8-K		4.2	2/6/19
4.3	Form of Note for Micron Technology, Inc.'s 4.640% Senior Notes due 2024 (included in Exhibit 4.2)		8-K		4.3	2/6/19
4.4	Form of Note for Micron Technology, Inc.'s 4.975% Senior Notes due 2026 (included in Exhibit 4.2)		8-K		4.4	2/6/19
4.5	Form of Note for Micron Technology, Inc.'s 5.327% Senior Notes due 2029 (included in Exhibit 4.2)		8-K		4.5	2/6/19
4.6	Second Supplemental Indenture, dated as of July 12, 2019, by and between Micron Technology, Inc. and U.S. Bank National Association, as Trustee		8-K		4.2	7/12/19
4.7	Form of Note for Micron Technology, Inc.'s 4.185% Senior Notes due 2027 (included in Exhibit 4.6)		8-K		4.3	7/12/19
4.8	Form of Note for Micron Technology, Inc.'s 4.663% Senior Notes due 2030 (included in Exhibit 4.6)		8-K		4.4	7/12/19
4.9	Third Supplemental Indenture, dated as of April 24, 2020, by and between Micron Technology, Inc. and U.S. Bank National Association, as Trustee		8-K		4.2	4/24/20
4.10	Form of Note for Micron Technology, Inc.'s 2.497% Senior Notes due 2023 (included in Exhibit 4.9)		8-K		4.3	4/24/20
4.11	Description of Registrant's Securities		10-K	9/3/20	4.13	10/19/20
10.1**	Micron Technology, Inc. Executive Officer Performance Incentive Plan		DEF 14A		B	12/7/17
10.2**	Amended and Restated 2004 Equity Incentive Plan		10-K	9/1/16	10.6	10/28/16
10.3**	2004 Equity Incentive Plan Forms of Agreement and Terms and Conditions		10-K	9/1/16	10.7	10/28/16
10.4**	Amended and Restated 2007 Equity Incentive Plan		DEF 14A		A	12/1/20
10.5**	2007 Equity Incentive Plan Forms of Agreement and Terms and Conditions		10-K	9/1/16	10.9	10/28/16
10.6**	Nonstatutory Stock Option Plan, as Amended		10-K	9/1/16	10.10	10/28/16
10.7**	Nonstatutory Stock Option Plan Form of Agreement and Terms and Conditions		10-K	9/1/16	10.11	10/28/16
10.8*	Patent License Agreement, dated September 15, 2006, by and among Toshiba Corporation, Acclaim Innovations, LLC, and Micron Technology, Inc.		10-Q	11/30/06	10.66	1/16/07
10.9**	Form of Indemnification Agreement between the Registrant and its officers and directors		10-Q	2/27/14	10.3	4/7/14
10.10**	Form of Severance Agreement		8-K		99.2	11/1/07
10.11*	Technology Transfer and License Option Agreement for 20NM Process Node, dated as of January 17, 2013, by and between Micron Technology, Inc. and Nanya Technology Corporation		10-Q/A	2/28/13	10.126	8/7/13
10.12**	Deferred Compensation Plan, as amended		10-Q	3/4/21	10.15	4/1/21
10.13**	Executive Agreement, dated April 26, 2017, by and between Micron Technology, Inc. and Sanjay Mehrotra		10-Q	6/1/17	10.67	6/30/17
10.14**	Severance Benefits for Sumit Sadana		10-Q	11/30/17	10.70	12/20/17
10.15**	Form of Amendment to Executive/Severance Agreement		8-K		99.1	11/13/17

Exhibit Number	Description of Exhibit	Filed Herewith	Form	Period Ending	Exhibit/ Appendix	Filing Date
10.16**	Severance Benefits for Manish Bhatia		10-Q	11/30/17	10.74	12/20/17
10.17**	Micron Technology, Inc. Employee Stock Purchase Plan	X				
10.18**	Severance Benefits for David A. Zinsner		10-Q	3/1/18	10.76	3/23/18
10.19	Credit Agreement, dated as of May 14, 2021, by and among Micron Technology, Inc., as borrower, HSBC Bank USA, National Association, as administrative agent, the other agents party thereto, and each financial institution party from time to time thereto		10-Q	6/3/21	10.22	7/1/21
10.20	Term Loan Credit Agreement, dated as of May 14, 2021, by and among Micron Technology, Inc., as borrower, Wells Fargo Bank, National Association, as administrative agent, the other agents party thereto, and each financial institution party from time to time thereto		10-Q	6/3/21	10.23	7/1/21
21.1	Subsidiaries of the Registrant	X				
23.1	Consent of Independent Registered Public Accounting Firm	X				
31.1	Rule 13a-14(a) Certification of Chief Executive Officer	X				
31.2	Rule 13a-14(a) Certification of Chief Financial Officer	X				
32.1	Certification of Chief Executive Officer Pursuant to 18 U.S.C. 1350	X				
32.2	Certification of Chief Financial Officer Pursuant to 18 U.S.C. 1350	X				
101.INS	Inline XBRL Instance Document - the instance document does not appear in the Interactive Data File because its XBRL tags are embedded within the Inline XBRL document	X				
101.SCH	Inline XBRL Taxonomy Extension Schema Document	X				
101.CAL	Inline XBRL Taxonomy Extension Calculation Linkbase Document	X				
101.DEF	Inline XBRL Taxonomy Extension Definition Linkbase Document	X				
101.LAB	Inline XBRL Taxonomy Extension Label Linkbase Document	X				
101.PRE	Inline XBRL Taxonomy Extension Presentation Linkbase Document	X				
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)	X				

* Portions of this exhibit have been omitted pursuant to a request for confidential treatment filed with the Commission.

** Indicates management contract or compensatory plan or arrangement.

ITEM 16. FORM 10-K SUMMARY

None.

SIGNATURES

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

Micron Technology, Inc.

Date October 8, 2021

By: */s/ David A. Zinsner*

David A. Zinsner
Senior Vice President and Chief Financial Officer
(Principal Financial Officer)

Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the Registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ Sanjay Mehrotra **(Sanjay Mehrotra)**	President and Chief Executive Officer and Director (Principal Executive Officer)	October 8, 2021
/s/ David A. Zinsner **(David A. Zinsner)**	Senior Vice President and Chief Financial Officer (Principal Financial Officer)	October 8, 2021
/s/ Scott Allen **(Scott Allen)**	Corporate Vice President and Chief Accounting Officer (Principal Accounting Officer)	October 8, 2021
/s/ Richard M. Beyer **(Richard M. Beyer)**	Director	October 8, 2021
/s/ Lynn Dugle **(Lynn Dugle)**	Director	October 8, 2021
/s/ Steve Gomo **(Steve Gomo)**	Director	October 8, 2021
/s/ Linnie Haynesworth **(Linnie Haynesworth)**	Director	October 8, 2021
/s/ Mary Pat McCarthy **(Mary Pat McCarthy)**	Director	October 8, 2021
/s/ Robert E. Switz **(Robert E. Switz)**	Chair of the Board Director	October 8, 2021
/s/ MaryAnn Wright **(MaryAnn Wright)**	Director	October 8, 2021

Exhibit 4.13

DESCRIPTION OF THE REGISTRANT'S SECURITIES REGISTERED PURSUANT TO SECTION 12 OF THE SECURITIES EXCHANGE ACT OF 1934

Micron Technology, Inc. (the "Company," "we," "our," or "us") has one class of securities registered under Section 12 of the Securities Exchange Act of 1934, as amended: our common stock.

Description of Common Stock

The following summary describes our common stock and certain provisions of our amended and restated certificate of incorporation and our by-Laws, as amended, and the General Corporation Law of the State of Delaware (the "DGCL"). Because the following is only a summary, it does not contain all of the information that may be important to you. For a complete description, you should refer to our amended and restated certificate of incorporation and by-Laws, as amended, copies of which are exhibits to the Annual Report on Form 10-K to which this description is an exhibit.

Our authorized common stock consists of 3,000,000,000 shares, $0.10 par value per share.

Common stock

The holders of common stock are entitled to one vote per share on all matters to be voted on by stockholders, including the election of directors. Stockholders are not entitled to cumulative voting rights, and, accordingly, the holders of a majority of the shares voting for the election of directors can elect the entire board if they choose to do so and, in that event, the holders of the remaining shares will not be able to elect any person to the board of directors.

The holders of common stock are entitled to receive ratably such dividends, if any, as may be declared from time to time by the board of directors, in its discretion, from funds legally available therefor and subject to prior dividend rights of holders of shares of preferred stock or other senior equity, if any, which may be outstanding. Upon liquidation or dissolution of the Company, subject to prior liquidation rights of the holders of shares of preferred stock, if any, the holders of common stock are entitled to receive on a pro rata basis the remaining assets of the Company available for distribution. Holders of common stock have no preemptive or other subscription rights, and there are no conversion rights or redemption or sinking fund provisions with respect to such shares. All outstanding shares of common stock are fully paid and non-assessable.

Anti-takeover effects of Delaware law

We are subject to the provisions of Section 203 of the DGCL. Under Section 203, we would generally be prohibited from engaging in any business combination (as defined in Section 203) with any interested stockholder for a period of three years following the time that this stockholder became an interested stockholder unless:

- prior to this time, our board of directors approved either the business combination or the transaction that resulted in the stockholder becoming an interested stockholder;

- upon consummation of the transaction that resulted in the stockholder becoming an interested stockholder, the interested stockholder owned (as defined in Section 203) at least 85% of our voting stock (as defined in Section 203) outstanding at the time the transaction commenced, excluding shares owned by persons who are directors and also officers, and by employee stock plans in which employee participants do not have the right to determine confidentially whether shares held subject to the plan will be tendered in a tender or exchange offer; or

- at or subsequent to such time, the business combination is approved by our board of directors and authorized at an annual or special meeting of stockholders, and not by written consent, by the affirmative vote of at least 66 2/3% of the outstanding voting stock that is not owned by the interested stockholder.

Under Section 203, a "business combination" generally includes:

- any merger or consolidation involving us and the interested stockholder;

- any sale, transfer, pledge or other disposition of 10% or more of our assets involving the interested stockholder;

- any transaction that results in the issuance or transfer by us of any of the Company's stock to the interested stockholder, subject to limited exceptions;

- any transaction involving us that has the effect of increasing the proportionate share of the stock of any class or series of the Company beneficially owned by the interested stockholder; or

- the receipt by the interested stockholder of the benefit of any loans, advances, guarantees, pledges or other financial benefits provided by or through us.

In general, Section 203 defines an interested stockholder as an entity or person beneficially owning 15% or more of our outstanding voting stock and any entity or person affiliated with or controlling or controlled by such entity or person.

Transfer agent

The transfer agent and registrar for our common stock is Wells Fargo Bank, National Association.

Listing

Our common stock is listed on The Nasdaq Global Select Market under the symbol "MU".

Exhibit 10.17

MICRON TECHNOLOGY, INC.
EMPLOYEE STOCK PURCHASE PLAN
(AS AMENDED AND RESTATED EFFECTIVE AUGUST 1, 2021)

1. Introduction; Purpose. On July 6, 2021 the Board adopted this amended and restated Plan, which shall govern all grants of purchase rights on or after August 1, 2021. For the terms and conditions of the Plan applicable to purchase rights granted prior to August 1, 2021, refer to the version of the Plan in effect as of the date such purchase rights were granted. The purpose of the Plan is to provide employees of the Company and its Designated Subsidiaries and Designated Affiliates with an opportunity to purchase shares of Common Stock through accumulated Contributions. This Plan includes two components: a Code Section 423 Component (the "423 Component") and a non-Code Section 423 Component (the "Non-423 Component"). It is the intention of the Company to have the 423 Component qualify as an "employee stock purchase plan" under Section 423 of the Code. The provisions of the 423 Component, accordingly, shall be construed so as to extend and limit participation in a uniform and nondiscriminatory basis consistent with the requirements of Section 423 of the Code. In addition, this Plan authorizes the grant of options under the Non-423 Component that does not qualify as an "employee stock purchase plan" under Section 423 of the Code; such options shall be granted pursuant to rules, procedures or subplans adopted by the Committee designed to achieve tax, securities laws or other objectives for Eligible Employees and the Company. Except as otherwise provided herein, the Non-423 Component will be operated and administered in the same manner as the 423 Component.

2. Definitions.

(a) "Administrator" means the Committee or, subject to Applicable Laws, one or more of the Company's officers or management team appointed by the Board or Committee to administer the day-to-day operations of the Plan.

(b) "Affiliate" means (a) any entity that, directly or indirectly, is controlled by, controls or is under common control with, the Company and (b) any entity in which the Company has a significant equity interest, in either case as determined by the Committee, whether now or hereafter existing.

(c) "Applicable Laws" means the requirements relating to the administration of equity-based awards and the related issuance of shares of Common Stock under U.S. state corporate laws, U.S. federal and state securities laws, the Code, the rules of any Exchange or quotation system on which the Common Stock is listed or quoted and the applicable laws of any non-U.S. jurisdiction where options to purchase shares of Common Stock are, or will be, granted under the Plan.

(d) "Board" means the Board of Directors of the Company.

(e) "Code" means the U.S. Internal Revenue Code of 1986, as amended. Reference to a specific section of the Code or U.S. Treasury Regulation thereunder will include such section or regulation, any valid regulation or other official applicable guidance promulgated under such section, and any comparable provision of any future legislation or regulation amending, supplementing or superseding such section or regulation.

(f) "Committee" means the Compensation Committee of the Board, or any subcommittee referred to in Section 14(d).

(g) "Common Stock" means the common stock of the Company.

(h) "Company" means Micron Technology, Inc., a Delaware corporation, or any successor thereto.

(i) "Compensation" shall be defined from time to time by the Committee in its sole discretion with respect to any Offering Period. Except as otherwise defined by the Committee from time to time in its sole discretion, "Compensation" means wages and salary. Except as otherwise determined by the Committee, "Compensation" does not include: (1) any bonuses or commissions, (2) overtime pay and regularly paid wage premiums (such as evening or shift premiums), (3) any amounts contributed by the Company or a Designated Subsidiary or Designated Affiliate to any pension plan, (4) any automobile or relocation allowances (or reimbursement for any such expenses), (5) any amounts realized from the exercise of any stock options or other equity incentive awards, (6) any amounts paid by the Company or a Designated Subsidiary or Designated Affiliate for other fringe benefits, such as health and welfare, hospitalization and group life insurance benefits, or perquisites, or paid in lieu of such benefits, or (7) other similar forms of extraordinary compensation. The Administrator shall have the discretion to determine the application of this definition to employees outside the United States.

(j) "Contributions" means the payroll deductions or, if permitted by the Administrator to comply with non-U.S. requirements, amounts contributed to the Plan via cash, check or other means, used to fund the exercise of options granted pursuant to the Plan.

(k) "Designated Affiliate" means any Affiliate that has been designated by the Administrator from time to time in its sole discretion as eligible to participate in the Non-423 Component.

(l) "Designated Subsidiary" means any Subsidiary that has been designated by the Administrator from time to time in its sole discretion as eligible to participate in the 423 Component.

(m) "Designated Percent" means the percentage of Fair Market Value determined by the Administrator for purposes of determining the Purchase Price.

(n) "Effective Date" means the date that the Company's stockholders approved the Plan, January 17, 2018.

(o) "Eligible Employee" means (i) any individual who is an employee providing services to the Company or a Designated Subsidiary, or (ii) any individual who is an employee providing services to the Company or any Designated Affiliate, unless any such employee is specifically excluded by the Administrator from participation. The Administrator, in its discretion, from time to time may, prior to an Offering Date for all options to be granted on such Offering Date in an Offering, determine that the definition of Eligible Employee will or will not include an individual if he or she: (i) has not completed at least two (2) years of service since his or her last hire date (or such lesser period of time as may be determined by the Administrator in its discretion), (ii) customarily works not more than twenty (20) hours per week (or such lesser period of time as may be determined by the Administrator in its discretion), (iii) customarily works not more than five (5) months per calendar year (or such lesser period of time as may be determined by the Administrator in its discretion), or (iv) is a highly compensated employee within the meaning of Section 414(q) of the Code, provided that any such exclusion is applied with respect to each Offering in a uniform manner to all similarly-situated employees who otherwise would be Eligible Employees for that Offering. For purposes of the 423 Component, the employment relationship shall be treated as continuing intact while the individual is on military or sick leave or other bona fide leave of absence approved by the Company or the Designated Subsidiary so long as the leave does not exceed three (3) months or if longer than three (3) months, the individual’s right to reemployment is provided by statute or has been agreed to by contract or in a written policy of the Company which provides for a right of reemployment following the leave of absence. The employment relationship shall be treated as continuing intact where an Eligible Employee transfers employment between the Company, Designated Subsidiaries and/or Designated Affiliates; provided, however, that an individual who is not employed by the Company or a Designated Subsidiary on the Offering Date and through a date that is no more than three (3) months prior to the Exercise Date will participate only in the Non-423 Component unless the individual continues to have a right to reemployment with the Company or a Designated Subsidiary provided by statute or contract or in a written policy of the Company which provides for a right of reemployment following the leave of absence. The Administrator shall establish rules to govern other transfers into the 423 Component, and between any separate Offerings established thereunder, consistent with the applicable requirements of Section 423 of the Code.

(p) "Exchange" means any national securities exchange or national market system on which the Stock may from time to time be listed or traded.

(q) "Exchange Act" means the U.S. Securities Exchange Act of 1934, as amended, including the rules and regulations promulgated thereunder.

(r) "Exercise Date" means the last Trading Day of the Offering Period.

(s) "Fair Market Value" means, as of any date and unless the Administrator determines otherwise, (i) if the Common Stock is listed or traded on any Exchange, the closing price for such Common Stock (or the closing bid, if no sales were reported) as quoted on such Exchange (or the Exchange with the greatest volume of trading in the Common Stock) for the last market trading day prior to the day of determination, as reported by Bloomberg L.P. or such other source as the Administrator deems reliable; (ii) if the Common Stock is quoted on the over-the-counter market or is regularly quoted by a recognized securities dealer, but selling prices are not reported, the Fair Market Value of the Common Stock shall be the mean between the high bid and low asked prices for the Common Stock on the last market trading day prior to the day of determination, as reported by Bloomberg L.P. or such other source as the Administrator deems reliable, or (iii) in the absence of an established market for the Common Stock, the Fair Market Value shall be determined by such other method as the Administrator determines in good faith to be reasonable.

(t) "Maximum Share Amount" means the maximum number of shares of Common Stock that a Participant may purchase on any given Exercise Date, as determined by the Committee in its sole discretion prior to the commencement of the Offering Period.

(u) "New Exercise Date" means a new Exercise Date if the Administrator shortens any Offering Period then in progress.

(v) "Offering" means an offer under the Plan of an option that may be exercised during an Offering Period. For purposes of this Plan, the Committee may designate separate Offerings under the Plan (the terms of which need not be identical) in which Eligible Employees of one or more Designated Subsidiaries or Designated Affiliates will participate, even if the dates of the applicable Offering Periods of each such Offering are identical.

(w) "Offering Date" means the first Trading Day of each Offering Period.

(x) "Offering Periods" means the period of time during which offers to purchase shares of Common Stock are outstanding under the Plan. The Committee shall determine the length of each Offering Period, which need not be uniform; provided that no Offering Period shall exceed twenty-seven (27) months in length. No voluntary payroll deductions shall be solicited until after the effective date of a registration statement on Form S-8 filed under the Securities Act of 1933, as amended, covering the shares to be issued under the Plan.

(y) "Parent" means a "parent corporation," whether now or hereafter existing, as defined in Section 424(e) of the Code.

(z) "Participant" means an Eligible Employee that participates in the Plan.

(aa) "Plan" means this Micron Technology, Inc. Employee Stock Purchase Plan, including both the 423 Component and the Non-423 Component.

(bb) "Purchase Price" means the Designated Percent of the Fair Market Value of a share of Common Stock on the Offering Date or on the Exercise Date, whichever is lower. Unless otherwise determined by the Administrator, the Designated Percent for purposes of the foregoing sentence is eighty-five percent (85%). The Administrator may change the Designated Percent for any Offering Period but in no event shall the Designated Percent be less than eighty-five percent (85%). Such Purchase Price may be established by the Committee by any manner or method the

Committee determines, pursuant to Section 14, and subject to (i) with respect to the 423 Component, compliance with Section 423 of the Code (or any successor rule or provision or any other applicable law, regulation or Exchange rule) or (ii) with respect to the Non-423 Component, pursuant to such manner or method as determined by the Committee to comply with applicable local law.

(cc) "Securities Act" means the Securities Act of 1933, as amended from time to time.

(dd) "Subsidiary" means a "subsidiary corporation," whether now or hereafter existing, as defined in Section 424(f) of the Code.

(ee) "Trading Day" means a day on which Nasdaq is open for trading.

(ff) "U.S." means United States.

(gg) "U.S. Treasury Regulations" means the Treasury regulations of the Code. Reference to a specific Treasury Regulation or Section of the Code shall include such Treasury Regulation or Section, any valid regulation promulgated under such Section, and any comparable provision of any future legislation or regulation amending, supplementing or superseding such Section or regulation.

3. Eligibility.

(a) Offering Periods. Any Eligible Employee on a given Offering Date will be eligible to participate in the Plan, subject to the requirements of Section 5, provided, however, that employees who are citizens or residents of a non-U.S. jurisdiction may be excluded from participation in the Plan or an Offering if the participation of such Employees is prohibited under the laws of the applicable jurisdiction or if complying with the laws of the applicable jurisdiction would cause the Plan or an Offering to violate Section 423 of the Code.

(b) Limitations. Any provisions of the Plan to the contrary notwithstanding, no Eligible Employee will be granted an option under the 423 Component of the Plan (i) to the extent that, immediately after the grant, such Eligible Employee (or any other person whose stock would be attributed to such Eligible Employee pursuant to Section 424(d) of the Code) would own capital stock of the Company or any Parent or Subsidiary of the Company and/or hold outstanding options to purchase such stock possessing five percent (5%) or more of the total combined voting power or value of all classes of the capital stock of the Company or of any Parent or Subsidiary of the Company, or (ii) to the extent that his or her rights to purchase stock under all employee stock purchase plans (as defined in Section 423 of the Code) of the Company or any Parent or Subsidiary of the Company accrues at a rate which exceeds twenty-five thousand U.S. dollars (USD 25,000) worth of stock (determined at the Fair Market Value of the stock at the time such option is granted) for each calendar year in which such option is outstanding at any time, as determined in accordance with Section 423 of the Code and the regulations thereunder.

4. Offering Periods. Within the limitations set forth in Section 2(w), the Administrator will have the power to change the duration of Offering Periods (including the commencement dates thereof) without stockholder approval. Any such change shall be announced prior to the scheduled beginning of the first Offering Period to be affected thereafter.

5. Participation. An Eligible Employee may become a participant in the Plan by following an electronic or other enrollment procedure as may be established by the Administrator from time to time.

6. Contributions.

(a) At the time a Participant enrolls in the Plan pursuant to Section 5, he or she will elect to have Contributions made on each pay day during the Offering Period in an amount not exceeding fifteen percent (15%) of the Compensation which he or she receives on each pay day during the Offering Period. The Administrator may permit Eligible Employees participating in a specified Offering to contribute amounts to the Plan through payment by cash, check or other means to comply with non-U.S. requirements, provided, that such contributions shall not exceed fifteen percent (15%) of the Compensation received each pay period, during the Offering Period. A Participant's subscription agreement will remain in effect for successive Offering Periods unless terminated as provided in Section 10 hereof.

(b) Payroll deductions or contributions, as applicable, for a Participant will commence on the first pay day following the Offering Date and will end on the last pay day prior to the Exercise Date of such Offering Period to which such authorization is applicable, unless sooner terminated by the Participant as provided in Section 10 hereof.

(c) All Contributions made for a Participant will be credited to his or her account under the Plan and Contributions will be made in whole percentages only.

(d) Subject to Applicable Laws, a Participant may discontinue his or her participation in the Plan as provided in Section 10 by completing any forms and following any procedures (including specified deadlines) established by the Administrator or its designee. The change will become effective as soon as administratively practicable after receipt.

(e) Notwithstanding the foregoing, to the extent necessary to comply with Section 423(b)(8) of the Code and Section 3(b), a Participant's Contributions may be decreased to zero percent (0%) at any time during an Offering Period. Subject to Section 423(b)(8) of the Code, Contributions will recommence at the rate originally elected by the Participant effective as of the beginning of the first Offering Period scheduled to end in the following calendar year, unless terminated by the Participant as provided in Section 10.

(f) At the time the option is exercised, in whole or in part, or at the time some or all of the Common Stock issued under the Plan is disposed of (or any other time that a taxable event related to the Plan occurs), the Participant must make adequate provision for the Company's or its Subsidiary's or Affiliate's federal, state, local or any other tax liability payable to any authority, national insurance, social security, payment-on-account or other tax obligations, if any, which arise upon the exercise of the option or the disposition of the Common Stock (or any other time that a taxable event related to the Plan occurs), including, for the avoidance of doubt, any liability of the Participant to pay an employer tax or social insurance contribution obligation, which liability has been shifted to the Participant as a matter of law or contract. At any time, the Company or its Subsidiary or Affiliate, as applicable, may, but will not be obligated to, withhold from the Participant's compensation the amount necessary for the Company or its Subsidiary or Affiliate, as applicable, to meet applicable withholding obligations, including any withholding required to make available to the Company or its Subsidiary or Affiliate, as applicable, any tax deductions or benefits attributable to sale or early disposition of Common Stock by the Eligible Employee. In addition, the Company or its Subsidiary or Affiliate, as applicable, may (i) withhold from the proceeds of the sale of Common Stock, (ii) withhold a sufficient whole number of shares of Common Stock otherwise issuable following purchase having an aggregate fair market value sufficient to pay applicable withholding obligations, or (iii) may withhold by any other means set forth in the applicable subscription agreement.

7. Grant of Option. On the Offering Date of each Offering Period, each Eligible Employee participating in such Offering Period will be granted an option to purchase on each Exercise Date during such Offering Period (at the applicable Purchase Price) up to a number of shares of Common Stock determined by dividing such Eligible Employee's Contributions accumulated during such Offering Period prior to such Exercise Date and retained in the Eligible Employee's account as of the Exercise Date by the applicable Purchase Price; provided that in no event will an Eligible Employee be permitted to purchase during each Offering Period more than the Maximum Share Amount, subject to adjustment pursuant to Section 19(a), and provided further that such purchase will be subject to the limitations set forth in Sections 3(b) and 13. The Eligible Employee may accept the grant of such option by electing to participate in the Plan in accordance with the requirements of Section 5. The Administrator may, for future Offering Periods, increase or decrease, in its absolute discretion, the maximum number of shares of Common Stock that an Eligible Employee may purchase during each Offering Period. Exercise of the option will occur as provided in Section 8, unless the Participant has withdrawn pursuant to Section 10. The option will expire on the last day of the Offering Period.

8. Exercise of Option.

(a) Unless a Participant withdraws from the Plan as provided in Section 10, his or her option for the purchase of shares of Common Stock will be exercised automatically on the Exercise Date, and the maximum number of full shares subject to the option will be purchased for such Participant at the applicable Purchase Price with the accumulated Contributions from his or her account; provided that in no event will an Eligible Employee be permitted to purchase during each Offering Period more than the Maximum Share Amount, subject to adjustment pursuant to Section 19(a), and provided further that such purchase will be subject to the limitations set forth in Sections 3(b) and 13. No fractional shares of Common Stock will be purchased. Any Contributions accumulated in a Participant's account which are not sufficient to purchase a full share will, at the discretion of the Administrator, be refunded to the Participant, without interest, or be retained in the Participant's account for the subsequent Offering Period. During a Participant's lifetime, a Participant's option to purchase shares hereunder is exercisable only by him or her.

(b) In the event that the number of shares of Common Stock to be purchased by all Participants in any Offering Period exceeds the number of shares of Common Stock then available for issuance under the Plan, (i) the Company shall make a pro rata allocation of the remaining shares of Common Stock in as uniform a manner as shall be practicable and as the Committee shall, in its sole discretion, determine to be equitable and (ii) all funds not used to purchase shares of Common Stock on the Exercise Date shall be returned, without interest to the Participants.

9. Delivery. By enrolling in the Plan, each Participant shall be deemed to have authorized the establishment of a brokerage account on his or her behalf at a securities brokerage firm selected by the Company. As soon as reasonably practicable after each Exercise Date on which a purchase of shares of Common Stock occurs, the Company shall arrange for the delivery to each Participant of the shares of Common Stock purchased upon exercise of his or her option to the Participant's brokerage or Plan share account in a form determined by the Company. Notwithstanding any other provision of the Plan, unless otherwise determined by the Administrator or required by any applicable law, rule or regulation, the Company shall not deliver to any Participant certificates evidencing shares of Common Stock issued in connection with any purchase under the Plan, and instead such shares of Common Stock shall be recorded in the books of the brokerage firm or, as applicable, the Company, its transfer agent, stock plan administrator or such other outside entity which is not a brokerage firm.

10. Withdrawal.

(a) A Participant may withdraw all but not less than all the Contributions credited to his or her account and not yet used to exercise his or her option under the Plan at any time by following an electronic or other withdrawal procedure determined by the Administrator from time to time. All of the Participant's Contributions credited to his or her account will, at the discretion of the Administrator, (i) be retained in Participant's account and used to purchase shares of Common Stock at the next Exercise Date, or (ii) be paid to such Participant as soon as reasonably practicable after receipt of notice of withdrawal and such Participant's options for the Offering Period shall be terminated automatically, and no further payroll deductions or contributions for the purchase of shares of Common Stock shall be made for such Offering Period. If a Participant withdraws from an Offering Period, Contributions will not resume at the beginning of the succeeding Offering Period, unless the Participant re-enrolls in the Plan as prescribed by the Administrator from time to time.

(b) A Participant's withdrawal from an Offering Period will not have any effect upon his or her eligibility to participate in any similar plan that may hereafter be adopted by the Company or in succeeding Offering Periods that commence after the termination of the Offering Period from which the Participant withdraws.

11. Termination of Employment. Unless otherwise determined by the Administrator, upon a Participant's ceasing to be an Eligible Employee for any reason, he or she will be deemed to have elected to withdraw from the Plan and the Contributions credited to such Participant's account during the Offering Period but not yet used to purchase shares of Common Stock under the Plan will be returned to such Participant or, in the case of his or her death, to the person or persons entitled thereto under Section 15, and such Participant's option will be

automatically terminated. Unless determined otherwise by the Administrator in a manner that is permitted by, and compliant with, Section 423 of the Code, a Participant whose employment transfers between entities through a termination with an immediate rehire (with no break in service) by the Company or a Designated Subsidiary or Designated Affiliate shall not be treated as terminated under the Plan.

12. Interest. No interest will accrue on the Contributions of a Participant in the Plan, except as may be required by applicable law, as determined by the Administrator.

13. Stock. Subject to adjustment as provided in Section 19 hereof, the maximum number of shares of Common Stock that will be made available for sale under the Plan will be 33,000,000 shares of Common Stock. The limitation set forth in this section may be used to satisfy purchases of shares of Common Stock under either the 423 Component or the Non-423 Component of the Plan.

14. Administration.

(a) Unless otherwise designated by the Board, the Committee shall serve as the Administrator. The Administrator will have full and exclusive discretionary authority to construe, interpret and apply the terms of the Plan, to designate separate Offerings under the Plan, to designate Subsidiaries or Affiliates as participating in the Plan, to determine eligibility and adjudicate all disputed claims filed under the Plan, including whether Eligible Employees shall participate in the 423 Component or the Non-423 Component and which entities shall be Designated Subsidiaries or Designated Affiliates, and to establish such procedures that it deems necessary for the administration of the Plan. Notwithstanding any provision to the contrary in this Plan, the Administrator may adopt rules or procedures relating to the operation and administration of the Plan to accommodate the specific requirements of local laws and procedures for jurisdictions outside of the United States. Without limiting the generality of the foregoing, the Committee is specifically authorized to adopt rules, procedures and subplans, which, for purposes of the Non-423 Component, may be outside the scope of Section 423 of the Code, regarding, without limitation, eligibility to participate, the definition of Compensation, handling of Contributions, making of Contributions to the Plan (including, without limitation, in forms other than payroll deductions), establishment of bank or trust accounts to hold Contributions, payment of interest, conversion of local currency, obligations to pay payroll tax, determination of beneficiary designation requirements, withholding procedures and handling of stock certificates that vary with applicable local requirements.

(b) Every finding, decision and determination made by the Administrator will, to the full extent permitted by law, be final and binding upon all parties, including the Company, Designated Subsidiary, Designated Affiliate, Participant, Eligible Employee, or any beneficiary of such person, as applicable.

(c) To the extent allowable pursuant to applicable law, each member of the Board, the Committee, the Administrator or any employee of the Company, a Designated Subsidiary, or a Designated Affiliate (each such person, a "Covered Person") shall be indemnified and held harmless by the Company from any loss, cost, liability, or expense that may be imposed upon or reasonably incurred by such Covered Person in connection with or resulting from any claim, action, suit, or proceeding to which he or she may be a party or in which he or she may be involved by reason of any action or failure to act pursuant to the Plan and against and from any and all amounts paid by him or her in satisfaction of judgment in such action, suit, or proceeding against him or her; provided, however, that he or she has acted in accordance with his or her duties and responsibilities to the Company under applicable law, and provided that he or she gives the Company an opportunity, at its own expense, to handle and defend any claim, action, suit, or proceeding to which he or she is a party before he or she undertakes to handle and defend it on his or her own behalf. The foregoing right of indemnification shall not be exclusive of any other rights of indemnification to which such Covered Persons may be entitled pursuant to the Company's Certificate of Incorporation or Bylaws, as a matter of law, or otherwise, or any power that the Company may have to indemnify them or hold them harmless.

(d) To the extent not prohibited by Applicable Law, the Committee may, from time to time, delegate some or all of its authority under the Plan to a subcommittee or subcommittees of the Committee, the Administrator or other persons or groups of persons as it deems necessary, appropriate or advisable under conditions or limitations that it may set at or after the time of the delegation. For purposes of the Plan, reference to the Committee will be deemed to refer to any subcommittee, subcommittees, or other persons or groups of persons to whom the Committee delegates authority pursuant to this Section 14(d).

15. Designation of Beneficiary.

(a) If permitted by the Administrator, a Participant may file a designation of a beneficiary who is to receive any shares of Common Stock and cash, if any, from the Participant's account under the Plan in the event of such Participant's death subsequent to an Exercise Date on which the option is exercised but prior to delivery to such Participant of such shares and cash. In addition, if permitted by the Administrator, a Participant may file a designation of a beneficiary who is to receive any cash from the Participant's account under the Plan in the event of such Participant's death prior to exercise of the option. If a Participant is married and the designated beneficiary is not the spouse, spousal consent will be required for such designation to be effective.

(b) Such designation of beneficiary, if permitted, may be changed by the Participant at any time by notice in a form determined by the Administrator. In the event of the death of a Participant and in the absence of a beneficiary validly designated under the Plan who is living at the time of such Participant's death, the Company will deliver such shares and/or cash to the executor or administrator of the estate of the Participant, or if no such executor or administrator has been appointed (to the knowledge of the Company), the Company, in its discretion, may deliver such shares and/or cash to the spouse or to any one or more dependents or relatives of the Participant, or if no spouse, dependent or relative is known to the Company, then to such other person as the Company may designate.

(c) All beneficiary designations will be in such form and manner as the Administrator may designate from time to time.

16. Transferability. Neither Contributions credited to a Participant's account nor any rights with regard to the exercise of an option or to receive shares of Common Stock under the Plan may be assigned, transferred, pledged or otherwise disposed of in any way (other than by will, the laws of descent and distribution or as provided in Section 15 hereof) by the Participant. Any such attempt at assignment, transfer, pledge or other disposition will be without effect, except that the Company may treat such act as an election to withdraw funds from an Offering Period in accordance with Section 10 hereof.

17. Use of Funds. The Company may use all Contributions received or held by it under the Plan for any corporate purpose, and the Company will not be obligated to segregate such Contributions, except as may be required by applicable local law, as determined by the Administrator. Until shares of Common Stock are issued, Participants will only have the rights of an unsecured creditor with respect to the Plan, although Participants in specified Offerings may have additional rights where required under local law, as determined by the Administrator.

18. Reports. Individual accounts will be maintained for each Participant in the Plan. Statements of account will be given to participating Eligible Employees at least annually, which statements will set forth the amounts of Contributions, the Purchase Price, the number of shares of Common Stock purchased and the remaining cash balance, if any.

19. Adjustments; Dissolution or Liquidation; Corporate Transactions.

(a) Adjustments. Subject to any required action by the shareholders of the Company, the maximum number of shares of Common Stock that shall be made available for sale under the Plan, the maximum number of shares of Common Stock that each Participant may purchase during the Offering Period pursuant to the Maximum Share Amount or over a calendar year under the USD 25,000 limitation (pursuant to Section 3(b)) and the per share price used to determine the Purchase Price shall be proportionately adjusted for any increase or decrease in the number of issued shares of Common Stock resulting from any nonreciprocal transaction between the Company and its shareholders, (such as a stock dividend, stock split, spin-off, rights offering or recapitalization through a large, nonrecurring cash dividend), that affects the Common Stock (or other securities of the Company) or the price of shares of Common Stock (or other securities) and causes a change in the per share value of the Common Stock underlying outstanding options. Such adjustment shall be made by the Administrator, whose determination in that respect shall be final, binding and conclusive. Except as expressly provided herein, no issuance by the Company of shares of stock of any class, or securities convertible into shares of stock of any class, shall affect, and no adjustment by reason thereof shall be made with respect to, the number or price of shares of Common Stock subject to an option.

(b) Dissolution or Liquidation. In the event of the proposed dissolution or liquidation of the Company, any Offering Period then in progress will be shortened by setting a New Exercise Date, and will terminate immediately prior to the consummation of such proposed dissolution or liquidation, unless provided otherwise by the Administrator. The New Exercise Date will be before the date of the Company's proposed dissolution or liquidation. The Administrator will notify each Participant in writing or electronically, prior to the New Exercise Date, that the Exercise Date for the

Participant's option has been changed to the New Exercise Date and that the Participant's option will be exercised automatically on the New Exercise Date, unless prior to such date the Participant has withdrawn from the Offering Period as provided in Section 10 hereof.

(c) Certain Corporate Transactions. In the event of a reorganization, merger, or consolidation of the Company with one or more corporations in which the Company is not the surviving corporation (or survives as a direct or indirect subsidiary of such other constituent corporation or its parent), or upon a sale of substantially all of the property or stock of the Company to another corporation, each outstanding option will be assumed or an equivalent option substituted by the successor corporation or a Parent or Subsidiary of the successor corporation. In the event that the successor corporation refuses to assume or substitute for the option, the Offering Period with respect to which such option relates will be shortened by setting a New Exercise Date on which such Offering Period shall end. The New Exercise Date will occur before the date of the Company's proposed merger or Change in Control. The Administrator will notify each Participant in writing or electronically prior to the New Exercise Date, that the Exercise Date for the Participant's option has been changed to the New Exercise Date and that the Participant's option will be exercised automatically on the New Exercise Date, unless prior to such date the Participant has withdrawn from the Offering Period as provided in Section 10 hereof.

20. Amendment or Termination.

(a) Subject to any applicable law or government regulation and to the rules of any Exchange or quotation system on which the shares of Common Stock may be listed or quoted, the Plan may be amended, modified, suspended or terminated by the Board without the approval of the shareholders of the Company. Except as provided in Section 19, no amendment may make any change in any option previously granted which adversely affects the rights of any Participant or any beneficiary (as applicable) without the consent of the affected Participant or beneficiary. To the extent necessary to comply with Section 423 of the Code (or any successor rule or provision or any other applicable law, regulation or Exchange rule), the Company shall obtain shareholder approval of any amendment in such a manner and to such a degree as required.

(b) Without shareholder approval and without regard to whether any Participant rights may be considered to have been "adversely affected," the Administrator or its delegate, to the extent permitted under the terms of the Plan, applicable law, the Bylaws of the Company and under the Committee charter, may change the Offering Periods, limit the frequency or number of changes in the amount withheld during an Offering Period, establish the exchange rate applicable to amounts withheld in a currency other than U.S. dollars, permit payroll withholding in excess of the amount designated by a Participant to adjust for delays or mistakes in the Company's processing of properly completed Contribution elections, establish reasonable waiting and adjustment periods and/or accounting and crediting procedures to ensure that amounts applied toward the purchase of shares of Common Stock for each Participant properly correspond with amounts withheld from the Participant's Compensation, and establish such other limitations or procedures as the Committee deems appropriate.

21. Notices. All notices or other communications by a Participant to the Company under or in connection with the Plan will be deemed to have been duly given when received in the form and manner specified by the Company at the location, or by the person, designated by the Company for the receipt thereof.

22. Conditions Upon Issuance of Shares. Shares of Common Stock will not be issued with respect to an option unless the exercise of such option and the issuance and delivery of such shares pursuant thereto will comply with all applicable provisions of U.S. and non-U.S. law, including, without limitation, the Securities Act, the Exchange Act, the rules and regulations promulgated thereunder, and the requirements of any Exchange, and will be further subject to the approval of counsel for the Company with respect to such compliance. As a condition to the exercise of an option, the Company may require the person exercising such option to represent and warrant at the time of any such exercise that the shares are being purchased only for investment and without any present intention to sell or distribute such shares if, in the opinion of counsel for the Company, such a representation is required by any of the aforementioned applicable provisions of law.

23. Notification of Sale of Shares of Common Stock. Each Participant shall give the Administrator prompt notice of any disposition of Common Stock acquired pursuant to the option granted under the Plan in accordance with such procedures as may be established by the Administrator. The Administrator may require that until such time as a Participant disposes of shares of Common Stock acquired pursuant to the option granted under the Plan, the Participant shall hold all such shares of Common Stock in the Participant's name and with a third-party broker/administrator designated by the Company until the lapse of any time period(s) established by the Administrator.

24. Clawback/Recoupment Policy. Notwithstanding anything contained herein to the contrary, all shares of Common Stock acquired pursuant to the Plan shall be and remain subject to any incentive compensation clawback or recoupment policy currently in effect or as may be adopted by the Board and, in each case, as may be amended from time to time. No such policy adoption or amendment shall in any event require the prior consent of any Participant.

25. Code Section 409A; Tax Qualification.

(a) Options granted under the 423 Component are exempt from the application of Section 409A of the Code. Options granted under the Non-423 Component to U.S. taxpayers are intended to be exempt from the application of Section 409A under the short-term deferral exception and any ambiguities shall be construed and interpreted in accordance with such intent. Subject to Section 23(b), options granted to U.S. taxpayers under the Non-423 Component are subject to such terms and conditions that will permit such options to satisfy the requirements of the short-term deferral exception available under Section 409A of the Code, including the requirement that the shares of Common Stock subject to an option be delivered within the short-term deferral period. Subject to Section 23(b), in the case of a Participant who would otherwise be subject to Section 409A of the Code, to the extent the Company determines that an option or the exercise, payment, settlement or deferral is subject to Section 409A of the Code, the option shall be granted, exercised, paid, settled or deferred in a manner that will comply with Section 409A of the Code, including Department of Treasury regulations and other interpretive guidance issued thereunder, including without limitation any such regulations or other guidance that may be issued after the Effective Date. Anything in the foregoing to the contrary notwithstanding, the Company shall have no liability to a Participant or any other party if the option that is intended to be exempt from, or compliant with Section 409A of the Code is not so exempt or compliant or for any action taken by the Company with respect thereto.

(b) Although the Company may endeavor to (i) qualify an option for favorable tax treatment under the laws of the U.S. or jurisdictions outside of the U.S. or (ii) avoid adverse tax treatment (e.g., under Section 409A of the Code), the Company makes no representation to that effect and expressly disavows any covenant to maintain favorable or avoid unfavorable tax treatment, notwithstanding anything to the contrary in this Plan, including Section 26(a). The Company is not constrained in its corporate activities by any potential negative tax impact on Participants under the Plan.

26. Term of Plan. The Plan became effective as of the Effective Date and will continue in effect through the tenth (10th) anniversary thereof, unless sooner terminated under Section 20.

27. Stockholder Approval. The Plan was approved by the stockholders of the Company on January 17, 2018.

28. Governing Law and Jurisdiction. The Plan shall be governed by, and construed in accordance with, the laws of the U.S. State of Delaware (except its choice-of-law provisions). The jurisdiction and venue for any disputes arising under, or any action brought to enforce (or otherwise relating to) this Plan shall be exclusively in the courts in the U.S. State of Idaho, County of Ada including the U.S. federal courts located therein (should federal jurisdiction exist).

29. No Right to Employment. Participation in the Plan by a Participant shall not be construed as giving a Participant the right to be retained as an employee of the Company, a Subsidiary or an Affiliate, as applicable. Furthermore, the Company, a Subsidiary or an Affiliate may dismiss a Participant from employment at any time, free from any liability or any claim under the Plan.

30. Severability. If any provision of the Plan is or becomes or is deemed to be invalid, illegal, or unenforceable for any reason in any jurisdiction or as to any Participant, such invalidity, illegality or unenforceability shall not affect the remaining parts of the Plan, and the Plan shall be construed and enforced as to such jurisdiction or Participant as if the invalid, illegal or unenforceable provision had not been included.

31. Compliance with Applicable Laws. The terms of this Plan are intended to comply with all Applicable Laws and will be construed accordingly.

EXHIBIT 21.1

MICRON TECHNOLOGY, INC.
SUBSIDIARIES OF THE REGISTRANT*

Name	State (or Jurisdiction) in which Organized
Micron Asia Pacific LLC	Delaware
Micron Europe Limited	United Kingdom
Micron International LLC	Delaware
Micron Japan, Ltd.	Japan
Micron Memory Japan, G.K.	Japan
Micron Memory Malaysia SD	Malaysia
Micron Memory Taiwan Co., Ltd.	Taiwan
Micron Semiconductor Asia, LLC	Delaware
Micron Semiconductor Asia Operations Pte. Ltd.	Singapore
Micron Semiconductor Asia Pte. Ltd.	Singapore
Micron Semiconductor Products, Inc.	Idaho
Micron Semiconductor Taiwan Co., Ltd.	Taiwan
Micron Semiconductor (Xi'an) Co., Ltd.	China
Micron Technology B.V.	Netherlands
Micron Technology Taiwan, Inc.	Taiwan
Micron Technology Utah, LLC	Delaware

* The above list of subsidiaries of Micron Technology, Inc. omitted subsidiaries which, considered in the aggregate as a single subsidiary, would not constitute a significant subsidiary as of the end of the year covered by this report.

EXHIBIT 23.1

CONSENT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

We hereby consent to the incorporation by reference in the Registration Statements on Form S-3 (File No. 333-249838) and Form S-8 (File Nos. 333-17073, 333-50353, 333-103341, 333-120620, 333-133667, 333-140091, 333-148357, 333-159711, 333-171717, 333-179592, 333-190010, 333-196293, 333-203467, 333-217314, 333-223874, 333-234359, 333-255794) of Micron Technology, Inc. of our report dated October 8, 2021 relating to the financial statements and financial statement schedule and the effectiveness of internal control over financial reporting, which appears in this Form 10-K.

/s/ PricewaterhouseCoopers LLP

San Jose, California
October 8, 2021

EXHIBIT 31.1

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

I, Sanjay Mehrotra, certify that:

1. I have reviewed this Annual Report on Form 10-K of Micron Technology, 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: October 8, 2021

/s/ Sanjay Mehrotra

Sanjay Mehrotra
President and Chief Executive Officer and Director

EXHIBIT 31.2

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

I, David A. Zinsner, certify that:

1. I have reviewed this Annual Report on Form 10-K of Micron Technology, 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: October 8, 2021

/s/ David A. Zinsner
David A. Zinsner
Senior Vice President and Chief Financial Officer

EXHIBIT 32.1

CERTIFICATION OF CHIEF EXECUTIVE OFFICER PURSUANT TO 18 U.S.C. 1350

I, Sanjay Mehrotra, certify, pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Micron Technology, Inc. on Form 10-K for the period ended September 2, 2021, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in the Annual Report on Form 10-K fairly presents, in all material respects, the financial condition and results of operations of Micron Technology, Inc.

Date: October 8, 2021	/s/ Sanjay Mehrotra
	Sanjay Mehrotra
	President and Chief Executive Officer and Director

EXHIBIT 32.2

CERTIFICATION OF CHIEF FINANCIAL OFFICER
PURSUANT TO 18 U.S.C. 1350

I, David A. Zinsner, certify, pursuant to 18 U.S.C. 1350, as adopted pursuant to Section 906 of the Sarbanes-Oxley Act of 2002, that the Annual Report of Micron Technology, Inc. on Form 10-K for the period ended September 2, 2021, fully complies with the requirements of Section 13(a) or 15(d) of the Securities Exchange Act of 1934 and that information contained in the Annual Report on Form 10-K fairly presents, in all material respects, the financial condition and results of operations of Micron Technology, Inc.

Date: October 8, 2021	/s/ David A. Zinsner
	David A. Zinsner
	Senior Vice President and Chief Financial Officer