

**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 1, 2022
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

(State or other jurisdiction of incorporation or organization)

8000 S. Federal Way, Boise, Idaho

(Address of principal executive offices)

Registrant's telephone number, including area code

75-1618004

(IRS Employer Identification No.)

83716-9632

(Zip 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
<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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 \$83.9 billion based on the closing price reported on the Nasdaq Global Select Market on March 3, 2022. 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 September 30, 2022 was 1,087,168,584.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the Proxy Statement for the registrant's Fiscal 2022 Annual Meeting of Shareholders to be held on January 12, 2023 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

\$30.8B

FY22 annual revenue

4th

Largest semiconductor company
in the world*

127

On the 2022 Fortune 500

51,000+

Patents granted and growing**

17

Countries**

11

Manufacturing sites and
15 customer labs**

~48,000

Team members**

*Based on Gartner Market Share:
Semiconductors by End Market, Worldwide, 2021
(April 2022), excluding IP/software revenue.

**Micron data as of September 1, 2022.

Media Inquiries
mediarelations@micron.com

Government Inquiries
govaffairs@micron.com

Investor Inquiries
investorrelations@micron.com

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

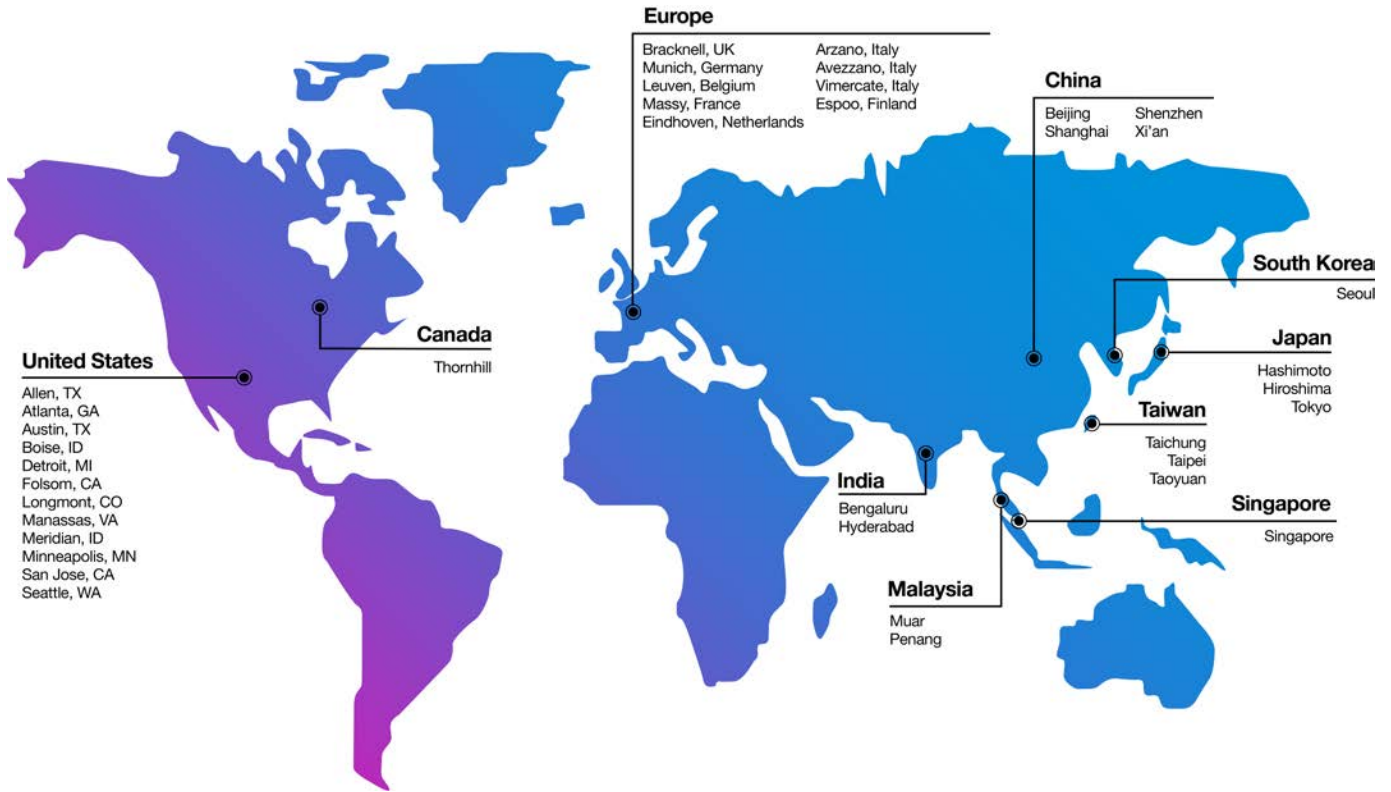
Our customers depend on our innovative solutions every day. We dedicate ourselves to demonstrating our environmental conscience, an inclusive team culture where all voices are heard and respected, and engaging in our communities to enrich life *for all*.

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.



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Definitions of Commonly Used Terms

As used herein, “we,” “our,” “us,” and similar terms include Micron Technology, Inc. and its 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 April 2023, repaid November 2021	Inotera	Inotera Memories, Inc.
2024 Notes	4.640% Senior Notes due February 2024, repaid November 2021	Intel	Intel Corporation
2024 Term Loan A	Senior Term Loan A due October 2024	LIBOR	London Interbank Offered Rate
2025 Notes	5.500% Senior Notes due February 2025, repaid November 2019	LPDDR	Low-Power Double Data Rate DRAM
2026 Notes	4.975% Senior Notes due February 2026	LPDRAM	Low-Power DRAM
2027 Notes	4.185% Senior Notes due February 2027	MCP	Multichip packaged solutions with managed NAND and LPDRAM
2029 Notes	5.327% Senior Notes due February 2029	Micron	Micron Technology, Inc. (Parent Company)
2030 Notes	4.663% Senior Notes due February 2030	MTU	Micron Technology Utah, LLC
2032 Green Bonds	2.703% Senior Notes due April 2032	NVMe	Hardware interface for SSDs that connect via a PCIe bus
2032D Notes	3.125% Convertible Senior Notes due May 2032, settled August 2021	OEM	Original Equipment Manufacturer
2041 Notes	3.366% Senior Notes due November 2041	PCIe	High-speed motherboard connection for peripheral devices such as storage drives
2051 Notes	3.477% Senior Notes due November 2051	Qimonda	Qimonda AG
AI	Artificial Intelligence	QLC	Quad-Level Cell (four bits per cell)
DDR	Double Data Rate DRAM	Revolving Credit Facility	\$2.5 billion Revolving Credit Facility due May 2026
EBITDA	Earnings before interest, taxes, depreciation, and amortization	SATA	Hardware interface for connecting to storage devices such as hard disk drives and SSDs
ESG	Environmental, Social, and Governance	SLC	Single-Level Cell (one bit per cell)
EUV	Extreme ultraviolet lithography	SOFR	Secured Overnight Financing Rate
Extinguished 2024 Term Loan A	Senior Term Loan A due October 2024, repaid May 2021	SSD	Solid State Drive
GDDR	Graphics Double Data Rate	TI	Texas Instruments Incorporated
HBM	High-bandwidth memory, a stacked DRAM technology optimized for memory-bandwidth intensive applications	TLC	Triple-Level Cell (three bits per cell)
HBM2E	Second generation HBM	UFS	Universal Flash Storage
IMFT	IM Flash Technologies, LLC	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 2022 and 2021 contained 52 weeks and fiscal 2020 contained 53 weeks. Our fourth quarter of fiscal 2020 contained 14 weeks and all other fiscal quarters in the years presented contained 13 weeks.

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," "plan," "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 plans to start ramping our 1β DRAM in manufacturing; plans to implement EUV lithography; the impact of COVID-19 to our business; the expected decline in bit shipments and pricing for both DRAM and NAND in the first quarter of 2023; the expected decrease in our gross margin percentage in the first quarter of 2023; reductions in utilization of our manufacturing facilities; the impact of inflationary pressures on costs in the first quarter of 2023; potential increases in our effective tax rate; estimates of tax expense for 2023; the timing for construction and ramping of production for new memory manufacturing fabs in the United States; the receipt of government grants and investment tax credits, the sufficiency of our cash and investments; the payment of future cash dividends; capital spending in 2023; funding of sustainability-focused projects; and results of tax return examinations. 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."

PART I

ITEM 1. BUSINESS

Overview

We are 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 for certain manufacturing processes. Our global network of manufacturing centers of excellence not only allows us to benefit from scale while streamlining processes and operations, but it also brings together some of the world's brightest talent to work on the most advanced memory technology. Centers of excellence bring expertise together in one location, providing an efficient support structure for end-to-end manufacturing, with quicker cycle times, in partnership with teams such as research and development ("R&D"), product engineering, human resources, procurement and supply chain. For our locations in Singapore and Taiwan, this is also a combination of bringing fabrication and back-end manufacturing together. We make significant investments to develop proprietary product and process technology, which generally increases bit density per wafer and reduces per-bit 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.

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 in spite of ongoing inflationary cost pressures. Our success is largely dependent on obtaining returns on our 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, Utah that was dedicated to 3D XPoint production. As a result, we classified the property, plant, and equipment as held for sale as of the second quarter of 2021 and ceased depreciating the assets. On June 30, 2021, we announced a definitive agreement to sell our Lehi facility to TI and closed the sale on October 22, 2021.

In the first quarter of 2022, we received \$893 million from TI for the sale of the Lehi facility and disposed of \$918 million of net assets, consisting primarily of property, plant, and equipment of \$921 million; \$55 million of other assets, consisting primarily of a receivable for reimbursement of property taxes, equipment spare parts, and raw materials; and \$58 million of liabilities, consisting primarily of a finance lease obligation. As a result of the disposition of the Lehi facility and other related adjustments, we recognized a loss of \$23 million included in restructure and asset impairments in the first quarter of 2022.

In 2021, we recognized a charge of \$435 million included in restructure and asset impairments in connection with the definitive agreement with TI (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. We also recognized a charge of \$49 million to cost of goods sold in 2021 to write down 3D XPoint inventory due to our decision to cease further development of this technology.

Impact of COVID-19 on Our Business

The COVID-19 pandemic has had, and continues to have, a significant impact around the world, prompting governments and businesses to take measures such as restrictions on travel and business operations, temporary closures of businesses, and quarantine and shelter-in-place orders. The pandemic and efforts to address it have at times significantly curtailed global economic activity and caused volatility and disruption in global financial markets and may do so in the future. In addition, our workforce and operations, the operations of our customers, and those of our vendors and suppliers around the world have been impacted at times and may in the future be impacted by the pandemic and related measures to address it.

Throughout the pandemic, we have implemented and updated our protocols and procedures in an effort to maintain a healthy and safe environment. We remain committed to the health and safety of our team members, contractors, suppliers, customers, distributors, and communities. We cannot predict how the pandemic or the steps we, our team members, government entities, suppliers, or customers take in response 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, and NOR. We sell our products into various markets through our business units in numerous forms, including components, modules, SSDs, managed NAND, MCPs, and wafers. 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.

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 \$13.69 billion in 2022, \$12.28 billion in 2021, and \$9.18 billion in 2020. CNBU sales in 2022 consisted primarily of DRAM products produced on 1x, 1y, 1z, and 1 α (1-alpha) technology nodes. In 2022, we ramped our industry-leading 1 α DRAM node. Our newest node, 1 β (1-beta), is on track to ramp manufacturing of CNBU products in 2023.

Client: CNBU sales to the client market in 2022 consisted primarily of DDR4, DDR5, LPDDR4, and LPDDR5 DRAM products. Our products sold to the client market support both commercial and consumer PC unit growth.

Cloud Server: CNBU sales to the cloud market in 2022 consisted primarily of our DDR4 DRAM products. Additionally, we began high volume manufacturing and sales of our HBM2E product. Overall cloud growth continues to be driven by the shift of both infrastructure and workloads from on-premises to the cloud. Cloud-native workloads are drivers of growth through use-cases like intelligent edge devices capable of AI and augmented reality that store and access data in the cloud or rely on the cloud for compute capability. Cloud servers supporting AI and data-centric workloads require significantly increasing quantities of DRAM, HBM, and NAND as the task of turning data into insight becomes increasingly memory-centric. In 2022, we continued the enablement of DDR5 across the industry, especially with key cloud customers. The move to DDR5 memory enables an increase in memory bandwidth over DDR4. We expect that our new server DDR5 memory will be a key enabler of CPU core count growth and the bandwidth that DDR5 delivers will be central to unlocking overall server system performance gains for data-intensive workloads like AI and high-performance computing.

Enterprise: CNBU sales to the enterprise market in 2022 consisted primarily of our DDR4 and DDR5 DRAM products. In 2022, we continued to make progress on our transition to DDR5, which nearly doubles bandwidth and reduces power consumption, and we are on track to support customers as they begin to introduce DDR5-enabled platforms in 2023. The enterprise market continues to grow beyond the mature OEM-sourced server consumption model with the further maturing of hybrid cloud and edge solutions as part of the digital transformation.

Graphics: CNBU sales to the graphics market in 2022 consisted primarily of GDDR6 graphics products. The graphics market is driven by the need for high-performance and HBM solutions. Our GDDR6 and GDDR6X DRAM graphics products are incorporated into gaming consoles, PC graphics cards, and graphics processing unit-based data center solutions, which are the driving force behind applications such as AI, virtual and augmented reality, 4K and 8K gaming, and professional design. In 2022, we announced volume shipments of our new 1z 16Gb GDDR6X, which features twice the capacity and up to 15% higher performance than the previous 1y generation. The 24Gb/s peak bandwidth capability of GDDR6X is made possible by our groundbreaking PAM4 signal transmission technology.

Networking: CNBU sales to the networking market in 2022 consisted primarily of DDR4 and DDR3 DRAM products. In 2022, demand was driven by 5G infrastructure deployments, data center networking growth, and increasing data transfer requirements across multiple industries.

Mobile Business Unit (“MBU”)

MBU includes memory products sold into smartphone and other mobile-device markets including discrete NAND, DRAM, and managed NAND products. 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 \$7.26 billion in 2022, \$7.20 billion in 2021, and \$5.70 billion in 2020. In 2022, we continued to deliver key mobile customer qualifications and strong mobile product ramps on our leading nodes. We expanded our 1α LPDRAM leadership with our 1α LPDDR5. For the fourth quarter of 2022, 176-layer NAND comprised approximately 95% of our mobile NAND bit shipments and we began volume production of the world’s first 232-layer NAND.

Smartphone: MBU sales to the smartphone market in 2022 consisted primarily of LPDDR4, LPDDR5, and managed NAND solutions. 5G-enabled phones require higher DRAM and NAND content per device and the market penetration rate for 5G smartphones continued to increase. Our smartphone products are utilized by OEMs to enable AI, 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 2022 also included products sold into the feature and disposable phone markets, mobile PC, and tablet markets. Sales primarily consisted of LPDDR4 and managed NAND solutions.

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 \$5.24 billion in 2022, \$4.21 billion in 2021, and \$2.76 billion in 2020. The embedded market has traditionally been characterized by long life-cycle DRAM and non-volatile products manufactured on mature process technologies. Strong trends of digitization, connectivity, and intelligence in every device, are driving increasing demand in embedded markets for memory and storage products that incorporate leading process technologies. 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 2022 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 2022 consisted primarily of LPDDR4 DRAM, e.MMC managed NAND, DDR3 DRAM, and LPDDR2 DRAM. In 2022, we received the first International Organization for Standardization (“ISO”) 26262 Automotive Safety Integrity Level (“ASIL”) D certification of memory for our LPDDR5 DRAM, which is based on our 1 α process node. 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 2022 consisted primarily of our LPDDR4 DRAM, DDR3 DRAM, DDR4 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, augmented reality and virtual reality (“AR/VR”) headsets, 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.

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 \$4.55 billion in 2022, \$3.97 billion in 2021, and \$3.77 billion in 2020. In 2022, 176-layer NAND comprised the the largest portion of SBU’s NAND bit shipments. In 2022, we also began volume production of the world’s first 232-layer NAND. It features higher areal density and delivers higher capacity and improved energy efficiency over previous generations of our NAND, to enable best-in-class support of the most data-intensive use cases from client to cloud.

SSDs: 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 2022 consisted primarily of our 5300, 7400, and 9300 series SSDs. In 2022, we announced our 7400 and 7450 SSDs with NVMe, delivering industry-leading form factor flexibility, PCIe Gen4 performance, and leading-edge security to meet the storage needs of demanding data center workloads. With this portfolio, we are providing a broad selection of mainstream data center SSDs. 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 machine learning 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 2022 consisted primarily of our 2450, 3400, and 2210 series client SSDs. In 2022, we achieved record client SSD revenue. 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 2022, we began volume shipments of SSDs with 176-layer QLC NAND that deliver the industry's leading storage density and optimized performance for a broad range of data-rich applications. Designed for use cases spanning client and data center environments, our transformative new NAND technology is now available with the introduction of the 2400 SSD, the world's first 176-layer PCIe Gen4 QLC SSD for client applications.

Consumer SSDs: SBU sales to the consumer SSD market in 2022 consisted primarily of our Crucial-branded MX500 and BX500 SATA SSDs and our P2 PCIe SSD, which utilize our NAND QLC and TLC technologies. We had record consumer SSD revenue in 2022, assisted by the growth of our QLC SSDs, and we continued to transition our product line of consumer SSDs from SATA to NVMe. In 2022, we announced availability of two new consumer storage products, the Crucial P3 Plus Gen4 NVMe and Crucial P3 NVMe SSDs, as an expansion of our Crucial NVMe SSD product portfolio. Our consumer SSD solutions are replacing installed hard disk drives as end users and system builders and integrators seek the higher performance, power savings, and reliability of SSDs.

Components and Wafers: SBU sales of components in 2022 consisted primarily of our 176-layer and 96-layer TLC and QLC NAND products.

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 our 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; Samsung Electronics Co., Ltd.; SK hynix Inc.; and Western Digital Corporation. Our competitors may use aggressive pricing to obtain market share. 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, such as Yangtze Memory Technologies Co., Ltd. (“YMTC”) and ChangXin Memory Technologies, Inc. (“CXMT”), 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.

We and our competitors generally seek to increase wafer output, improve yields, and reduce die size, which could 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.

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 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, components, and services that meet our standards and, in some cases, materials, components, or services are provided by a single or sole source, and we may be unable to qualify new suppliers on a timely basis. 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 is impacted by various factors. These factors could include a shortage of raw materials or a disruption in the processing or purification of those raw materials into finished goods. 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. Constraints within our supply chain for certain materials and integrated circuit components could limit our bit shipments, 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, logistics carriers, and other service providers, including providers of electricity and other utilities. Although we have certain long-term contracts with some of our suppliers, many of these contracts do not provide for long-term capacity or pricing 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, quantity, and/or pricing, our suppliers may allocate capacity to their other customers and capacity and/or materials may not be available when needed or at reasonable prices. Inflationary pressures and shortages have increased, and may continue to 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. In addition, if any of our suppliers was to cease operations or become insolvent, this could impact their ability to provide us with necessary supplies, and we may not be able to obtain the needed supply in a timely way or at all from other providers.

Certain materials are primarily available in a limited number of countries, including rare earth elements, minerals, and metals. Trade disputes, geopolitical tensions, economic circumstances, political 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 regional conflicts, sanctions, 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. 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.

Our inability to source materials, supplies, 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. 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. 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.

Patents and Licenses

As of September 1, 2022, we owned approximately 16,500 active U.S. patents and 8,100 active foreign patents. In addition, we have thousands of U.S. and foreign patent applications pending. Our patents have various terms expiring through 2042.

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 memory and storage solutions, including our industry leading DRAM and NAND technology, that enable continuous improvement in performance and cost structure for our products. In DRAM, our 1 α node was introduced several quarters ahead of the industry, and our newest node, 1 β , is on track to start ramping in manufacturing by the end of calendar 2022. We plan to implement EUV lithography on the DRAM node after 1 β . In NAND, the introduction of our 176-layer node was also ahead of the industry and we recently announced volume production of the world's first 232-layer NAND. We are also focused on developing new fundamentally different memory structures, materials, and packages designed to facilitate our transition to next generation products. Additional R&D efforts are concentrated 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 DDR5, LPDDR5, HBM, 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; India; Japan; China; Taiwan; Italy; Singapore; 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 1, 2022, we had approximately 48,000 employees located in the following regions:

Region	Percent All	Percent Women
Asia	77 %	34 %
United States	21 %	20 %
Europe	2 %	22 %
Total	100 %	31 %

As of September 1, 2022, 31% of our global workforce were women, compared to 30% as of September 2, 2021 and 24% of our technical or engineering roles were held by women, as compared to 23% as of September 2, 2021. Women comprised 17% of our senior leaders as of September 1, 2022, as compared to 15% as of September 2, 2021.

Our Board of Directors was comprised of four men and four women as of September 1, 2022. In addition, as of September 1, 2022, 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 AI 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 meaningfulness, availability, psychological safety, leadership, and inclusive behaviors. In March 2022, 89% 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, and Inclusion

In 2021, we set six commitments, each with an executive sponsor, to advance diversity, equality, and inclusion (“DEI”) globally and at all levels of the company. By the end of 2021, we had met or exceeded our goals for the first four commitments below and we are on our way to achieving all six:

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

We have a regular review of pay globally, including base pay and stock awards, to drive compensation equitably. We achieved comprehensive global pay equity for all underrepresented employees in total compensation across base pay, bonuses, and stock rewards in 2022 and 2021. We also continually assess our global leave, medical, and financial benefits to ensure inclusiveness. A pay equity analysis will continue to be conducted annually with our base pay merit review. In addition, a portion of our company-wide annual bonus program is based on the achievement of DEI-related goals.

Health, Safety, and Wellbeing

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. See “Item 1. Business – Overview – Impact of COVID-19 on Our Business.”

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, offering a work-from-home toolkit, and encouraging team members to earn incentives by participating in wellbeing challenges and measuring their personal progress.

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, www.micron.com) and the RBA code of conduct, which is a demonstration of our commitment to integrity and responsible practices.

Additional information about our human capital, including people development, wellbeing and benefits, DEI, and safety is included in our 2022 Sustainability Report and our 2021 DEI Annual Report, each available on our website. 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.

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. The efforts and expenditures needed to comply with these laws, rules, and regulations do not presently have a material impact on 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

Manufacturing of our products is subject to extensive and evolving federal, state, local, and foreign environmental laws and regulations. We approach environmental compliance and sustainability proactively to ensure we meet applicable government regulations regarding use of raw materials, discharges, emissions, climate change and energy use, and waste disposal from our manufacturing processes and address the expectations of our investors, customers, team members, and other stakeholders. Compliance with the law and other obligations is a minimum environmental expectation at Micron. Our wafer fabrication facilities continued to conform to the requirements of the ISO 14001:2015 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, such as environmental aspects evaluation and control, compliance obligations, commitment, training, communication, document control, 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 chemical usage, 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 – Government actions and regulations, such as export restrictions, tariffs and trade protection measures, may limit our ability to sell our products to certain customers or 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 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 1, 2022, about our executive officers:



Scott R. Allen

Corporate Vice President and Chief Accounting Officer

Mr. Allen, 54, 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, 51, 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.



Rob Beard

Senior Vice President, General Counsel and Corporate Secretary

Mr. Beard, 44, joined us in 2014 and has served in various leadership positions since that time. Prior to his appointment as Senior Vice President, General Counsel and Corporate Secretary in December 2021, he led the legal teams supporting Micron's corporate and global operations functions. Mr. Beard earned a BS in political science from the University of Utah and a JD from the University of Illinois College of Law.



Manish Bhatia

Executive Vice President, Global Operations

Mr. Bhatia, 50, 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, 61, 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, 56, 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, 64, 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.



Mark J. Murphy

Executive Vice President and Chief Financial Officer

Mr. Murphy, 54, joined us in April 2022 as Executive Vice President and Chief Financial Officer. From June 2016 to April 2022, Mr. Murphy served as the Chief Financial Officer of Qorvo, Inc. Prior to Qorvo, Mr. Murphy served as Executive Vice President and Chief Financial Officer of Delphi Automotive PLC, and prior to Delphi, held executive roles at Praxair, Inc. and MEMC Electronic Materials, Inc. Mr. Murphy currently serves on the Board of Directors of Albany International Corp. Mr. Murphy is a veteran of the U.S. Marine Corps and holds an MBA from Harvard University and BS in Business from Marquette University.



Sumit Sadana

Executive Vice President and Chief Business Officer

Mr. Sadana, 53, 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.

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 on 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, blog posts (micron.com/about/blog), 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

- volatility in average selling prices of our products;
- our ability to maintain or improve gross margins;
- the highly competitive nature of our industry;
- a downturn in the worldwide economy;
- our ability to develop and produce new and competitive memory and storage technologies and products;
- 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;
- the effects of the COVID-19 pandemic;
- disruptions to our manufacturing process from operational issues, natural disasters, or other events;
- breaches of our security systems or products, or those of our customers, suppliers, or business partners;
- attracting, retaining, and motivating highly skilled employees;
- realizing expected returns from capacity expansions;
- achieving or maintaining certain performance obligations associated with incentives from various governments;
- acquisitions and/or alliances;
- restructure charges;
- responsible sourcing requirements and related regulations; and
- environmental, social, and governance considerations.

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; and
- 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.

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, including ESG considerations.

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

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 and may continue to experience such volatility in the future. For DRAM, annual percentage changes in average selling prices have ranged from plus or minus approximately 35% since 2017. For NAND, average selling prices have generally declined since 2017, with annual price declines ranging from approximately 10% to nearly 50%. 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.

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. Factors that may limit our ability to reduce our per gigabit manufacturing costs at sufficient levels to maintain or improve gross margins include, but are not limited to:

- strategic product diversification decisions affecting product mix;
- 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;
- start-up or other costs associated with capacity expansions; and
- higher costs of goods and services due to inflationary pressures or market conditions.

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, supply chain disruptions, and delays from equipment suppliers. 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.

We have a broad portfolio of products to address our customers' needs, which span multiple market segments and are subject to rapid technological changes. Our manufacturing costs on a per gigabit basis vary across our portfolio as they are largely influenced by the technology node in which the solution was developed. We strive to balance our demand and supply for each technology node, but the dynamics of our markets and our customers can create periods of imbalance, which can lead us to carry elevated inventory levels. Consequently, we may incur charges in connection with obsolete or excess inventories or we may not fully recover our costs, which would reduce our gross margins. 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.

In addition, if we are unable to supply products that meet customer design and performance specifications, we may be required to sell such products at lower average selling prices, which may reduce our gross margins. Our gross margins may also be impacted by shifts in product mix, driven by our strategy to optimize our portfolio to best respond to changing market dynamics.

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; Kioxia Holdings Corporation; Samsung Electronics Co., Ltd.; SK hynix Inc.; and Western Digital Corporation. Our competitors may use aggressive pricing to obtain market share. 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, such as YMTC and CXMT, 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.

We and our competitors generally seek to increase wafer output, improve yields, and reduce die size, which could 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.

A downturn in the worldwide economy may harm our business.

Downturns in the worldwide economy, due to inflation, geopolitics, major central bank policy actions including interest rate increases, public health crises, or other factors, have harmed our business in the past and future downturns could also adversely affect our business. 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. 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 resulting in industry oversupply and declines in 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.

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

Our key semiconductor memory and storage 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, improving power consumption and reliability, and delivering advanced features and higher performance. We may face technological barriers to continue to shrink our products at our current or historical rate, which has generally reduced per gigabit 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.

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 invested and expect to continue to invest in new semiconductor product and system-level solution development. 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. In addition, our ability to successfully introduce new products often requires us to make product specification decisions multiple years in advance of when new products enter the market.

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. Many factors may 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 of the following:

- we will be successful in developing competitive new semiconductor memory and storage technologies and products;
- we will be able to cost-effectively manufacture new products;
- we will be able to successfully market these technologies;
- margins generated from sales of these products will allow us to recover costs of development efforts;
- 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 accurately predict and design products that meet our customers' specifications; or
- we will be able to introduce new products into the market and qualify them with our customers on a timely basis.

Unsuccessful efforts to develop new memory and storage technologies and products 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 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, 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 operations that could materially adversely affect our business, results of operations, or financial condition.

In addition to our U.S. operations, 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. In 2022, nearly half of our revenue was from sales to customers who have headquarters located outside the United States, while over 80% of our revenue in 2022 was from products shipped to customer locations outside the United States.

Our international operations are subject to a number 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;
- compliance with U.S. and international laws involving international operations, including the Foreign Corrupt Practices Act of 1977, as amended, sanctions and anti-corruption laws, 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 and Russia's invasion of Ukraine;
- government actions or civil unrest preventing the flow of products and materials, including delays in shipping and obtaining products and materials, cancellation of orders, or loss or damage of products;
- problems with the transportation or delivery of products and materials;
- 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. For example, political, economic, or other actions may adversely affect our operations in Taiwan. A majority of our DRAM production output in 2022 was from our fabrication facilities in Taiwan and any loss of output could have a material adverse effect on us. Any political, economic, or other actions may also adversely affect our customers and the technology industry supply chain, for which Taiwan is a central hub, and as a result, could have a material adverse impact on us.

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 restrictions on 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, or make such recoveries at acceptable average selling prices, while complying with such restrictions.

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, components, and services that meet our standards and, in some cases, materials, components, or services are provided by a single or sole source, and we may be unable to qualify new suppliers on a timely basis. 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 is impacted by various factors. These factors could include a shortage of raw materials or a disruption in the processing or purification of those raw materials into finished goods. 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. Constraints within our supply chain for certain materials and integrated circuit components could limit our bit shipments, 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, logistics carriers, and other service providers, including providers of electricity and other utilities. Although we have certain long-term contracts with some of our suppliers, many of these contracts do not provide for long-term capacity or pricing 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, quantity, and/or pricing, our suppliers may allocate capacity to their other customers and capacity and/or materials may not be available when needed or at reasonable prices. Inflationary pressures and shortages have increased, and may continue to 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. In addition, if any of our suppliers was to cease operations or become insolvent, this could impact their ability to provide us with necessary supplies, and we may not be able to obtain the needed supply in a timely way or at all from other providers.

Certain materials are primarily available in a limited number of countries, including rare earth elements, minerals, and metals. Trade disputes, geopolitical tensions, economic circumstances, political 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 regional conflicts, sanctions, 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. 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.

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 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. 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.

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.

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

The ongoing effects of the public health crisis caused by the COVID-19 pandemic and the measures being taken to limit COVID-19's impact on our business, results of operations, and financial condition are uncertain and difficult to predict, but may include, and in some cases, have included and may continue to include:

- Disruptions to our supply chain and our operations, or those of our suppliers, especially as a result of public health measures, including zero-COVID policies in China or elsewhere;
- Impacts to customer demand, resulting in industry oversupply and declines in pricing for our products;
- Adverse impacts to our business activities and increased costs from our efforts to mitigate the impact of COVID-19;
- 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 one or more of our sites or those of our subcontractors or suppliers, resulting from government restrictions and/or our own measures to prevent and/or mitigate the spread of COVID-19; and
- Adverse impacts to our construction projects, which could hamper our ability to introduce new technologies, reduce costs, or meet customer demand.

These effects and other impacts of the pandemic, alone or taken together, 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, qualify, and manufacture 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. 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.

Manufacturing system-level solutions, such as SSDs and managed NAND, typically results in higher per-unit manufacturing costs as compared to other products. 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 are not offset by higher 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 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 resulting in increased costs, or disruptions to our manufacturing operations or those of our suppliers or customers. 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. Other events, including political or public health crises, such as an outbreak of contagious diseases like COVID-19 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. Events of the types 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 products, 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, employees, former employees, or other third parties may gain access to our facilities or technology infrastructure and systems to steal trade secrets or other proprietary information, compromise confidential information, create system disruptions, or cause shutdowns. This risk is exacerbated as competitors for talent, particularly engineering talent, increasingly attempt to hire our employees. Through cyberattacks on technology infrastructure and systems, unauthorized parties may obtain access to computer systems, networks, and data, including cloud-based platforms. The technology infrastructure and systems of our suppliers, vendors, service providers, cloud solution providers, and partners have in the past experienced, and may in the future experience, such attacks, which could impact our operations. Cyberattacks can include ransomware, computer denial-of-service attacks, worms, supply chain attacks, social engineering, and other malicious software programs or other attacks, including those using techniques that change frequently or may be disguised or difficult to detect, or designed to remain dormant until a triggering event, impersonation of authorized users, and efforts to discover and exploit any design flaws, "bugs," security vulnerabilities, as well as intentional or unintentional acts by employees or other insiders with access privileges. Globally, cyberattacks are increasing in number and the attackers are increasingly organized and well-financed, or supported by state actors, and are developing increasingly sophisticated systems to not only attack, but also to evade detection. In addition, geopolitical tensions or conflicts may create a heightened risk of cyberattacks. Breaches of our physical security, attacks on our technology infrastructure and 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.

Our products are also targets for cyberattacks, including those products utilized in cloud-based environments. While some of our products contain encryption or security algorithms to protect third-party content or user-generated data stored on our products, these products could still be hacked or the encryption schemes could be compromised, breached, or circumvented by motivated and sophisticated attackers. Further, our products contain sophisticated hardware and firmware and applications that may contain security vulnerabilities or defects in design or manufacture, including “bugs” and other problems that could interfere with the intended operation of our products. To the extent our products are hacked, or the encryption schemes are compromised or breached, this could harm our business by requiring us to employ additional resources to fix the errors or defects, exposing us to litigation, claims, and harm to our reputation.

Any of the foregoing security risks 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 succession for key employees. Competition for experienced employees in our industry is intense. Hiring and retaining qualified executives and other employees is critical to our business. If our total compensation programs, employment benefits, and workplace culture are not viewed as competitive and inclusive, our ability to attract, retain, and motivate employees could be compromised.

At times, we experience higher levels of attrition, increasing compensation costs, and more intense competition for talent across our industry. To the extent we experience significant attrition and are unable to timely replace employees, we could experience a 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 countries in which we operate, as well as restrictions on travel due to public health crises or other causes, may limit our ability to hire and/or retain talent in, or transfer talent to, specific locations.

Our inability to attract, retain, and motivate executives and other employees or effectively manage succession of key roles may inhibit our ability to maintain or expand our business operations.

We may not be able to achieve expected returns from capacity expansions.

We have announced our intent to expand our DRAM production capacity in the United States and we also make capital investments in projects outside the United States.

These expansions involve several risks including the following:

- capital expenditure requirements for capacity expansions during periods of relatively low free cash flow generation, resulting from challenging memory and storage industry conditions;
- availability of necessary funding, which may include external sources;
- ability to realize expected grants, investment tax credits, and other government incentives, including through the U.S. CHIPS and Science Act of 2022 (“CHIPS Act”) and foreign, state, and local grants;
- potential changes in laws or provisions of grants, investment tax credits, and other government incentives;
- potential restrictions on expanding in certain geographies;
- availability of equipment and construction materials;
- ability to complete construction as scheduled and within budget;
- availability of the necessary workforce;
- ability to timely ramp production in a cost-effective manner;
- increases to our cost structure until new production is ramped to adequate scale; and
- sufficient growth in customer demand to meet our increased output.

We invest our capital in areas that we believe best align with our business strategy and optimize future returns. Investments in capital expenditures may not generate expected returns or cash flows. 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.

Any of the above factors 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 achieve or maintain certain levels of investment, capital spending, employment, technology deployment, or research and development activities to qualify for such incentives or could restrict us from undertaking certain activities. 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.

Acquisitions and/or alliances 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;
- underestimating the costs or overestimating the benefits, including product, revenue, cost and other synergies and growth opportunities that we expect to realize, and we may not achieve those 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 or technological advancements.

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 restructure charges in future periods and may not realize expected savings or other benefits from restructure activities.

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. 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 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.

We and many of our customers have adopted responsible sourcing programs that require us to meet certain ESG criteria, and to periodically report on our performance against these requirements, including that we source the materials, supplies, and services we use and incorporate into the products we sell as prescribed by these programs. Many customer programs require us to remove a supplier within a prescribed period if such supplier ceases to comply with prescribed criteria, and our supply chain may at any time contain suppliers at risk of being removed due to non-compliance with responsible sourcing requirements. Some of our customers may elect to disqualify us as a supplier (resulting in a permanent or temporary loss of sales to such customer) or reduce purchases from us if we are unable to verify that our performance or products (including the underlying supply chain) meet the specifications of our customers' responsible sourcing programs on a continuous basis. Meeting responsible sourcing 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 or require our suppliers to remove suppliers from their supply chains based on our responsible sourcing requirements or customer requirements, and we or our suppliers may be unable to replace such removed suppliers in a timely or cost-effective manner. Any inability to replace removed suppliers in a timely or cost effective manner 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 replace suppliers we have removed in a timely or cost-effective manner or 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.

Failure to meet ESG expectations or standards or achieve our ESG goals could adversely affect our business, results of operations, financial condition, or stock price.

In recent years, there has been an increased focus from stakeholders on ESG matters, including greenhouse gas emissions and climate-related risks, renewable energy, water stewardship, waste management, diversity, equality and inclusion, responsible sourcing and supply chain, human rights, and social responsibility. Given our commitment to ESG, we actively manage these issues and have established and publicly announced certain goals, commitments, and targets which we may refine or even expand further in the future. These goals, commitments, and targets reflect our current plans and aspirations and are not guarantees that we will be able to achieve them. Evolving stakeholder expectations and our efforts to manage these issues, report on them, and accomplish our goals present numerous operational, regulatory, reputational, financial, legal, and other risks, any of which could have a material adverse impact, including on our reputation and stock price.

Such risks and uncertainties include:

- reputational harm, including damage to our relationships with customers, suppliers, investors, governments, or other stakeholders;
- adverse impacts on our ability to sell and manufacture products;
- the success of our collaborations with third parties;
- increased risk of litigation, investigations, or regulatory enforcement action;
- unfavorable ESG ratings or investor sentiment;
- diversion of resources and increased costs to control, assess, and report on ESG metrics;
- our ability to achieve our goals, commitments, and targets within timeframes announced;

- increased costs to achieve our goals, commitments, and targets;
- unforeseen operational and technological difficulties;
- access to and increased cost of capital; and
- adverse impacts on our stock price.

Any failure, or perceived failure, to meet evolving stakeholder expectations and industry standards or achieve our ESG goals, commitments, and targets could have an adverse effect on our business, results of operations, financial condition, or stock price.

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. 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, and this may also negatively impact our ability to maintain and develop intellectual property.

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. Such claims include, but are not limited to, allegations of anticompetitive conduct and infringement of intellectual property. 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.

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.

Risks Related to Laws and Regulations

Government actions and regulations, such as export restrictions, tariffs, and trade protection measures, may limit our ability to sell our products to certain customers or markets, or could otherwise restrict our ability to conduct operations.

International trade disputes, geopolitical tensions, and military conflicts have led, and continue to lead, to new and increasing export restrictions, trade barriers, tariffs, and other trade 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, or increase our costs for, 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.

We cannot predict what further actions may ultimately be taken with respect to export regulations, tariffs or other trade regulations between the United States and other countries, what products or companies may be subject to such actions, or what actions may be taken by other countries in retaliation. Further changes in trade policy, tariffs, 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. Such changes may also result in reputational harm to us, the development or adoption of technologies that compete with our products, long-term changes in global trade and technology supply chains, or negative impacts on our customers' products which incorporate our solutions. Any of the effects described in this risk factor could have a material 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.

Tax-related matters could have a material adverse effect on our business, results of operations, or financial condition.

We are subject to income taxes in the United States and many foreign jurisdictions. Our provision for income taxes and cash tax liabilities in the future could be adversely affected by numerous factors, including changes in the geographic mix of our earnings among jurisdictions, mandatory capitalization of R&D expenses beginning in 2023, 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, fluctuations in foreign currency exchange rates, adverse resolution of audits and examinations of previously filed tax returns, and changes in tax laws and regulations.

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. Beginning in 2024, the Inflation Reduction Act of 2022 imposes a 15% book minimum tax on corporations with three-year average annual adjusted financial statement income exceeding \$1 billion. We are in the process of assessing whether the book minimum tax would impact our effective tax rate. 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. If implemented by taxing authorities in countries where we do business, such changes, 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 ESG considerations, which may have a material adverse effect on our business, results of operations, or financial condition.

The manufacture 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.

New ESG considerations, including those related to climate change and the potential resulting environmental impact, may result in new laws, regulations, or industry standards that may affect us, our suppliers, and our customers. Such laws, regulations, or industry standards 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;
- increased compliance 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 2023 for property, plant, and equipment, net of partner contributions, will be around \$8 billion.

In the past we have utilized external sources of financing when needed. As a result of our debt levels, expected debt amortization, and general capital market and other 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 to realign our capital structure. As of September 1, 2022, we had debt with a carrying value of \$6.91 billion and may incur additional debt, including under our \$2.50 billion Revolving Credit Facility. 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 our business activities;
- 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 industry conditions;
- increase our exposure to rising interest rates from variable rate indebtedness; and
- result in certain of our debt instruments becoming immediately due and payable or being deemed to be in default if applicable cross default, cross-acceleration and/or similar provisions are triggered.

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 forecasts or 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.

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. Our expenditures for share repurchases were \$2.43 billion in 2022, \$1.20 billion in 2021, \$176 million in 2020, and \$2.66 billion in 2019. 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.

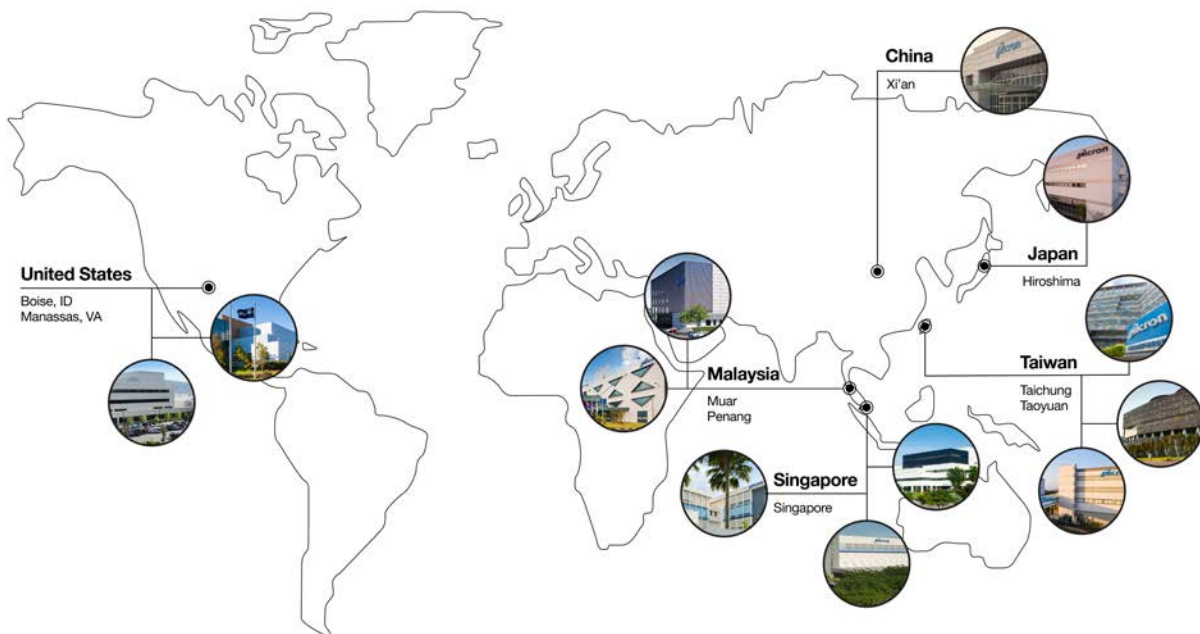
Future dividends, if any, and their timing and amount, may be affected by, among other factors: our financial condition, results of operations, capital requirements, business conditions, debt service obligations, contractual restrictions, industry practice, legal requirements, regulatory constraints, 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 1, 2022:



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 2022, 2021, and 2020. Our MTU facility was sold in the first quarter of 2022.

To support expected memory demand in the second half of the decade, we will need to add new DRAM wafer capacity. Following the enactment of the CHIPS Act in 2022, we announced plans to invest in two leading-edge memory manufacturing fabs in the United States, contingent on CHIPS Act support through grants and investment tax credits. As part of this plan, in September 2022, we broke ground on a leading-edge memory manufacturing fab in Boise, Idaho. Construction of the fab is expected to begin in calendar 2023 with DRAM production targeted to start in calendar 2025. In addition, in October 2022, we announced plans to build a second leading-edge DRAM manufacturing fab in Clay, New York. We plan to start site preparation work in calendar 2023 and expect construction to begin in calendar 2024, with production anticipated to ramp in the latter half of the decade. We expect these new fabs to fulfill our requirements for additional wafer capacity starting in the second half of the decade and beyond, in line with industry demand trends.

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 September 30, 2022, there were approximately 1,768 shareholders of record of our common stock. A substantially greater number of holders of our common stock are "street name" or beneficial holders, whose shares are held of record by banks, brokers, and other financial institutions.

Dividends

On September 29, 2022, we announced that our Board of Directors had declared a quarterly dividend of \$0.115 per share, payable in cash on October 26, 2022, to shareholders of record as of the close of business on October 11, 2022.

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 2022 Proxy Statement under the section entitled “Equity Compensation Plan Information,” which will be filed with the SEC within 120 days after September 1, 2022.

Issuer Purchase of Equity Securities

Common Stock Repurchase Authorization

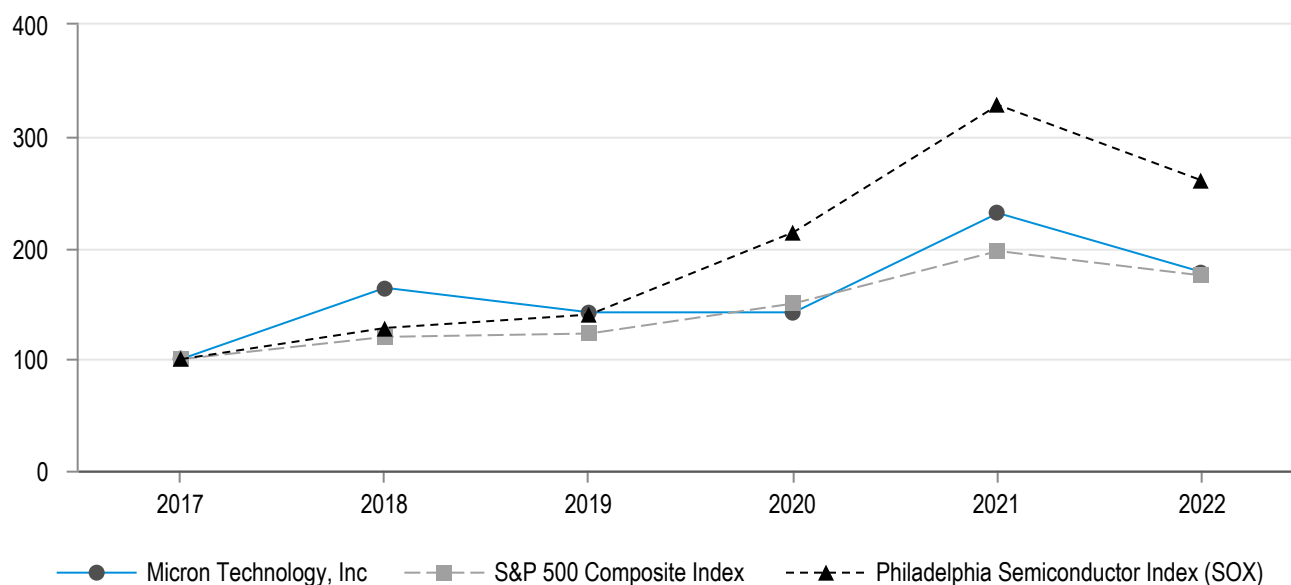
In May 2018, we announced that our Board of Directors authorized the discretionary repurchase of up to \$10 billion of our outstanding common stock through open-market purchases, block trades, privately-negotiated transactions, derivative transactions, and/or pursuant to Rule 10b5-1 trading plans. The 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 3, 2022 – July 7, 2022	4,038,489	\$ 58.69	4,038,489	
July 8, 2022 – August 4, 2022	8,643,182	59.15	8,643,182	
August 5, 2022 – September 1, 2022	575,794	62.53	575,794	
	<u>13,257,465</u>	\$ 59.16	<u>13,257,465</u>	\$3,531

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, 2017, through August 31, 2022. 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, 2017 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:

	2017	2018	2019	2020	2021	2022
Micron Technology, Inc.	\$ 100	\$ 164	\$ 142	\$ 142	\$ 231	\$ 178
S&P 500 Composite Index	100	120	123	150	197	175
Philadelphia Semiconductor Index (SOX)	100	128	140	214	328	260

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 1, 2022. 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 2022 and 2021 contained 52 weeks and fiscal 2020 contained 53 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	2022		2021		2020	
Revenue	\$ 30,758	100 %	\$ 27,705	100 %	\$ 21,435	100 %
Cost of goods sold	16,860	55 %	17,282	62 %	14,883	69 %
Gross margin	13,898	45 %	10,423	38 %	6,552	31 %
Research and development	3,116	10 %	2,663	10 %	2,600	12 %
Selling, general, and administrative	1,066	3 %	894	3 %	881	4 %
Restructure and asset impairments	48	— %	488	2 %	60	— %
Other operating (income) expense, net	(34)	— %	95	— %	8	— %
Operating income	9,702	32 %	6,283	23 %	3,003	14 %
Interest income (expense), net	(93)	— %	(146)	(1)%	(80)	— %
Other non-operating income (expense), net	(38)	— %	81	— %	60	— %
Income tax (provision) benefit	(888)	(3)%	(394)	(1)%	(280)	(1)%
Equity in net income (loss) of equity method investees	4	— %	37	— %	7	— %
Net income attributable to noncontrolling interests	—	— %	—	— %	(23)	— %
Net income attributable to Micron	<u>\$ 8,687</u>	28 %	<u>\$ 5,861</u>	21 %	<u>\$ 2,687</u>	13 %

Total Revenue: Total revenue for 2022 increased 11% as compared to 2021 primarily due to increases in sales of both DRAM and NAND products.

- Sales of DRAM products increased 12% primarily due to increases in bit shipments of slightly over 10%.
- Sales of NAND products increased 11% primarily due to a high-single-digit percent increase in bit shipments and a low-single-digit percent increase in average selling prices.

In the fourth quarter of 2022, the memory and storage industry environment deteriorated sharply due to global and macroeconomic challenges combined with downward inventory adjustments by customers, leading to significant reductions in bit shipments and average selling prices for both DRAM and NAND resulting in a 23% decline in revenue as compared to the third quarter of 2022. For the first quarter of 2023, continuation of these challenging conditions and inventory adjustments by customers have resulted in further reductions in near-term demand for both DRAM and NAND and we expect bit shipments and pricing to decline as compared to the fourth quarter of 2022.

Total revenue for 2021 increased 29% as compared to 2020 primarily due to increases in sales of both DRAM and NAND products.

- Sales of DRAM products increased 38% 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 increased 14% primarily due to increases in bit shipments in the high-20% range, partially offset by a decline in average selling prices of slightly over 10%.

Consolidated Gross Margin: Our consolidated gross margin percentage increased to 45% for 2022 from 38% for 2021, as a result of improvements in margins for both DRAM and NAND products, primarily due to reductions in manufacturing costs. Manufacturing cost reductions were driven by strong execution in ramping our 1 α DRAM and 176-layer NAND technology nodes. Our consolidated gross margin percentage declined to 39% in the fourth quarter of 2022 from 47% in the third quarter of 2022 and we expect that in the first quarter of 2023 the percentage will decline further due to decreases in average selling prices as a result of the challenging industry environment for memory and storage products. To address our elevated inventory levels and reduce supply growth, in the first quarter of 2023, we are selectively reducing facility utilization in both DRAM and NAND. We also expect that inflationary pressure will continue to be a headwind to costs in the first quarter of 2023.

Our consolidated 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 declines in NAND average selling prices. Our gross margins included the impact of underutilization costs at MTU of \$335 million for 2021 and \$557 million for 2020. 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.

Revenue by Business Unit

For the year ended	2022		2021		2020	
CNBU	\$ 13,693	45 %	\$ 12,280	44 %	\$ 9,184	43 %
MBU	7,260	24 %	7,203	26 %	5,702	27 %
EBU	5,235	17 %	4,209	15 %	2,759	13 %
SBU	4,553	15 %	3,973	14 %	3,765	18 %
All Other	17	— %	40	— %	25	— %
	<u>\$ 30,758</u>		<u>\$ 27,705</u>		<u>\$ 21,435</u>	

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

Changes in revenue for each business unit for 2022 as compared to 2021 were as follows:

- CNBU revenue increased 12% primarily due to increases in bit shipments to cloud, enterprise, and networking markets.
- MBU revenue was relatively unchanged as both DRAM and NAND revenue was relatively flat.
- EBU revenue increased 24% primarily due to strong demand growth in industrial and automotive markets.
- SBU revenue increased 15% primarily due to higher average selling prices and increases in shipments of SSD products.

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.
- 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.
- SBU revenue increased 6% as increases in bit shipments for NAND products outpaced declines in average selling prices.

Operating Income (Loss) by Business Unit

For the year ended	2022		2021		2020	
CNBU	\$ 5,844	43 %	\$ 4,295	35 %	\$ 2,010	22 %
MBU	2,160	30 %	2,173	30 %	1,074	19 %
EBU	1,752	33 %	1,006	24 %	301	11 %
SBU	513	11 %	173	4 %	36	1 %
All Other	12	71 %	20	50 %	(2)	(8)%
	<u>\$ 10,281</u>		<u>\$ 7,667</u>		<u>\$ 3,419</u>	

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 2022 as compared to 2021 were as follows:

- CNBU operating income increased primarily due to higher bit shipments and manufacturing cost reductions.
- MBU operating income was relatively unchanged as slight increases in gross margins were offset by higher operating expenses.
- EBU operating income increased primarily due to manufacturing cost reductions from an increasing mix of leading-edge bits, higher bit shipments, and improved DRAM pricing in industrial and consumer markets, partially offset by higher R&D expenses.
- SBU operating income increased primarily due to improved product mix driving increases in average selling prices, increases in SSD shipments, and manufacturing cost reductions, partially offset by higher R&D expenses.

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.
- 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.
- 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.

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 2022 increased 17% as compared to 2021 primarily due to higher employee compensation from increases in headcount, higher volumes of development and prequalification wafers, and higher depreciation expense. 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.

Selling, General, and Administrative: SG&A expenses for 2022 were 19% higher as compared to 2021 primarily due to increases in employee compensation, professional services, and legal fees. SG&A expenses for 2021 were relatively unchanged as compared to 2020.

Restructure and Asset Impairments: In the first quarter of 2022, we sold our Lehi, Utah facility to TI. In 2021, the Lehi facility was classified as held for sale and 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.”

Interest Income (Expense): Net interest expense for 2022 decreased by \$53 million as compared to 2021 primarily due to an increase of \$59 million in interest income as a result of increases in interest rates on our cash and investments. Net interest expense for 2021 increased by \$66 million as compared to 2020 primarily due to a decrease of \$77 million in interest income as a result of decreases in interest rates on our cash and investments.

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

For the year ended	2022	2021	2020
Income before taxes	\$ 9,571	\$ 6,218	\$ 2,983
Income tax (provision) benefit	(888)	(394)	(280)
Effective tax rate	9.3 %	6.3 %	9.4 %

Our effective tax rate increased in 2022 as compared to 2021 primarily due to the geographic mix of our earnings and a valuation allowance recorded against our Idaho deferred tax assets of \$189 million, partially offset by tax impacts of changes in foreign currency exchange rates. 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.

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 \$1.12 billion (benefiting our diluted earnings per share by \$1.00) for 2022, by \$758 million (\$0.66 per diluted share) for 2021, and by \$215 million (\$0.19 per diluted share) for 2020.

Beginning in 2023, provisions in the Tax Cuts and Jobs Act of 2017 will require us to capitalize and amortize R&D expenditures rather than deducting the costs as incurred. Unless the effective date is deferred or the law is repealed, we expect an increase to our effective tax rate for several years. In addition, the mix of our income, together with U.S. and foreign tax rules, results in taxes becoming more fixed at lower profitability levels. As a result of these factors, we estimate tax expense of at least \$300 million for 2023. Beyond this level, our actual tax expense will depend on the level of operating income through the year.

Beginning in 2024, the Inflation Reduction Act of 2022 imposes a 15% book minimum tax on corporations with three-year average annual adjusted financial statement income exceeding \$1 billion. We are in the process of assessing whether the book minimum tax would impact our effective tax rate.

Various tax reforms are being considered in multiple jurisdictions that, if enacted, contain provisions that could increase our tax expense. We continue to monitor the potential impact of these various tax reform proposals to our overall global effective tax rate and financial statements.

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

Other: Further information can be found in “Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Other Operating (Income) Expense, Net”; “ – Other Non-Operating Income (Expense), Net”; and other notes to the financial statements.

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. Cash and marketable investments totaled \$10.98 billion as of September 1, 2022, and \$10.40 billion as of September 2, 2021. Our cash and 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 1, 2022, \$3.79 billion of our cash and marketable investments was held by our foreign subsidiaries.

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 1, 2022, \$2.50 billion was available to draw under our Revolving Credit Facility. Funding of certain significant capital projects is also dependent on the receipt of government incentives, which are subject to conditions and may not be obtained.

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 2023 for property, plant, and equipment, net of partner contributions, to be around \$8 billion. Actual amounts for 2023 will vary depending on market conditions. As of September 1, 2022, we had purchase obligations of approximately \$4.04 billion for the acquisition of property, plant, and equipment, of which approximately \$2.97 billion is expected to be paid within one year. For a description of other 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.”

To support expected memory demand in the second half of the decade, we will need to add new DRAM wafer capacity. Following the enactment of the CHIPS Act in 2022, we announced plans to invest in two leading-edge memory manufacturing fabs in the United States, contingent on CHIPS Act support through grants and investment tax credits. As part of this plan, in September 2022, we broke ground on a leading-edge memory manufacturing fab in Boise, Idaho. Construction of the fab is expected to begin in calendar 2023 with DRAM production targeted to start in calendar 2025. In addition, in October 2022, we announced plans to build a second leading-edge DRAM manufacturing fab in Clay, New York. We plan to start site preparation work in calendar 2023 and expect construction to begin in calendar 2024, with production anticipated to ramp in the latter half of the decade. We expect these new fabs to fulfill our requirements for additional wafer capacity starting in the second half of the decade and beyond, in line with industry demand trends.

On November 1, 2021, we issued \$1 billion in aggregate principal amount of unsecured 2032 Green Bonds. Over time, we plan to allocate an amount equal to the net proceeds to fund eligible sustainability-focused projects involving renewable energy, green buildings, energy efficiency, water management, waste abatement, and a circular economy.

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. Through September 1, 2022, we have repurchased an aggregate of \$6.47 billion of the authorized amount. See "Item 8. Financial Statements and Supplementary Data – Notes to Consolidated Financial Statements – Equity."

On September 29, 2022, our Board of Directors declared a quarterly dividend of \$0.115 per share, payable in cash on October 26, 2022, to shareholders of record as of the close of business on October 11, 2022. 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, including, but not limited to, 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	2022	2021	2020
Net cash provided by operating activities	\$ 15,181	\$ 12,468	\$ 8,306
Net cash provided by (used for) investing activities	(11,585)	(10,589)	(7,589)
Net cash provided by (used for) financing activities	(2,980)	(1,781)	(317)
Effect of changes in currency exchange rates on cash, cash equivalents, and restricted cash	(106)	41	11
Net increase (decrease) in cash, cash equivalents, and restricted cash	\$ 510	\$ 139	\$ 411

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 2022 as compared to 2021 was primarily due to higher net income adjusted for non-cash items and the effect of lower receivables, partially offset by an increase in inventories.

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 and the effect of lower inventories, partially offset by an increase in receivables due to a higher level of sales.

Investing Activities: For 2022, net cash used for investing activities consisted primarily of \$12.07 billion of expenditures for property, plant, and equipment; inflows of \$115 million of partner contributions for capital expenditures; \$888 million of net inflows from the sale of the Lehi, Utah fab; and \$155 million of net outflows from purchases, sales, and maturities of available-for-sale securities.

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.

Financing Activities: For 2022, net cash used for financing activities included \$2.43 billion for the acquisition of 35.4 million shares of our common stock under our share repurchase authorization, \$2.03 billion of repayments of debt primarily to redeem the 2023 Notes and 2024 Notes, \$461 million of cash payments of dividends to shareholders, and \$141 million of payments on equipment purchase contracts. Cash used for financing activities was partially offset by aggregate proceeds of \$2.00 billion from the issuance of the unsecured 2032 Green Bonds, 2041 Notes, and 2051 Notes.

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 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.

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 and involve a significant level of uncertainty. 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. Our qualitative assessment for the current year 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, Malaysia, 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 \$337 million as of September 1, 2022. 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

No material items.

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 1, 2022 and September 2, 2021, we had fixed-rate debt with an aggregate carrying value of \$4.03 billion and \$3.89 billion, respectively, and as a result, the fair value of our debt fluctuates with changes in market interest rates. In 2022, we issued new debt and repaid other debt, which significantly increased the average remaining maturity of our fixed-rate debt resulting in increased variability of its fair value from interest rate changes. We estimate that, as of September 1, 2022 and September 2, 2021, a hypothetical 1% decrease in market interest rates would increase the fair value of our fixed-rate debt by approximately \$275 million and \$200 million, respectively.

Interest rate risk related to our investment portfolio is managed by primarily investing in shorter term securities. As of September 1, 2022, a hypothetical 1% increase in interest rates would decrease the fair value of our portfolio by approximately \$30 million. Such impact would only be realized if investments were sold prior to maturity.

As of September 1, 2022 and September 2, 2021, we had floating-rate debt and fixed-rate debt that is swapped to floating-rate debt with an aggregate principal amount of \$2.09 billion. A hypothetical 1% increase in the interest rates of this floating-rate debt would result in an increase in annual interest expense of approximately \$21 million as of September 1, 2022 and September 2, 2021.

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 hypothetical 10% adverse change in exchange rates versus the U.S. dollar would result in losses of approximately \$186 million as of September 1, 2022 and \$122 million as of September 2, 2021. 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**Index to Consolidated Financial Statements**

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Micron Technology, Inc.

Consolidated Statements of Operations

(In millions, except per share amounts)

For the year ended	September 1, 2022	September 2, 2021	September 3, 2020
Revenue	\$ 30,758	\$ 27,705	\$ 21,435
Cost of goods sold	16,860	17,282	14,883
Gross margin	13,898	10,423	6,552
Research and development	3,116	2,663	2,600
Selling, general, and administrative	1,066	894	881
Restructure and asset impairments	48	488	60
Other operating (income) expense, net	(34)	95	8
Operating income	9,702	6,283	3,003
Interest income	96	37	114
Interest expense	(189)	(183)	(194)
Other non-operating income (expense), net	(38)	81	60
	9,571	6,218	2,983
Income tax (provision) benefit	(888)	(394)	(280)
Equity in net income (loss) of equity method investees	4	37	7
Net income	8,687	5,861	2,710
Net income attributable to noncontrolling interests	—	—	(23)
Net income attributable to Micron	\$ 8,687	\$ 5,861	\$ 2,687
Earnings per share			
Basic	\$ 7.81	\$ 5.23	\$ 2.42
Diluted	7.75	5.14	2.37
Number of shares used in per share calculations			
Basic	1,112	1,120	1,110
Diluted	1,122	1,141	1,131

See accompanying notes to consolidated financial statements.

Micron Technology, Inc.

Consolidated Statements of Comprehensive Income

(In millions)

For the year ended	September 1, 2022	September 2, 2021	September 3, 2020
Net income	\$ 8,687	\$ 5,861	\$ 2,710
Other comprehensive income (loss), net of tax			
Gains (losses) on derivative instruments	(516)	(67)	46
Gains (losses) on investments	(48)	(7)	1
Foreign currency translation adjustments	(1)	2	—
Pension liability adjustments	3	3	15
Other comprehensive income (loss)	(562)	(69)	62
Total comprehensive income	8,125	5,792	2,772
Comprehensive income attributable to noncontrolling interests	—	—	(23)
Comprehensive income attributable to Micron	<u>\$ 8,125</u>	<u>\$ 5,792</u>	<u>\$ 2,749</u>

See accompanying notes to consolidated financial statements.

Micron Technology, Inc.

Consolidated Balance Sheets

(In millions, except par value amounts)

As of	September 1, 2022	September 2, 2021
Assets		
Cash and equivalents	\$ 8,262	\$ 7,763
Short-term investments	1,069	870
Receivables	5,130	5,311
Inventories	6,663	4,487
Assets held for sale	13	974
Other current assets	644	502
Total current assets	21,781	19,907
Long-term marketable investments	1,647	1,765
Property, plant, and equipment	38,549	33,213
Operating lease right-of-use assets	678	551
Intangible assets	421	349
Deferred tax assets	702	782
Goodwill	1,228	1,228
Other noncurrent assets	1,277	1,054
Total assets	\$ 66,283	\$ 58,849
Liabilities and equity		
Accounts payable and accrued expenses	\$ 6,090	\$ 5,325
Current debt	103	155
Other current liabilities	1,346	944
Total current liabilities	7,539	6,424
Long-term debt	6,803	6,621
Noncurrent operating lease liabilities	610	504
Noncurrent unearned government incentives	589	808
Other noncurrent liabilities	835	559
Total liabilities	16,376	14,916
Commitments and contingencies		
Shareholders' equity		
Common stock, \$0.10 par value, 3,000 shares authorized, 1,226 shares issued and 1,094 outstanding (1,216 shares issued and 1,119 outstanding as of September 2, 2021)	123	122
Additional capital	10,197	9,453
Retained earnings	47,274	39,051
Treasury stock, 132 shares held (97 shares as of September 2, 2021)	(7,127)	(4,695)
Accumulated other comprehensive income (loss)	(560)	2
Total equity	49,907	43,933
Total liabilities and equity	\$ 66,283	\$ 58,849

See accompanying notes to consolidated financial statements.

Micron Technology, Inc.

Consolidated Statements of Changes in Equity

(In millions, except per share amounts)

	Micron Shareholders									Total Equity
	Common Stock			Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income (Loss)	Total Micron Shareholders' Equity	Noncontrolling Interests in Subsidiaries		
	Number of Shares	Amount	Additional Capital							
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 - repurchase program	—	—	—	—	(176)	—	(176)	—	(176)	
Repurchase of stock - withholdings on employee equity awards	(2)	—	(11)	(64)	—	—	(75)	—	(75)	
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 - repurchase program	—	—	—	—	(1,200)	—	(1,200)	—	(1,200)	
Repurchase of stock - withholdings on employee equity awards	(2)	—	(12)	(82)	—	—	(94)	—	(94)	
Stock issued for convertible notes	11	1	(1)	—	—	—	—	—	—	
Cash settlement of convertible notes	—	—	(52)	—	—	—	(52)	—	(52)	
Dividends and dividend equivalents 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	
Net income	—	—	—	8,687	—	—	8,687	—	8,687	
Other comprehensive income (loss), net	—	—	—	—	—	(562)	(562)	—	(562)	
Stock issued under stock plans	12	1	244	—	—	—	245	—	245	
Stock-based compensation expense	—	—	514	—	—	—	514	—	514	
Repurchase of stock - repurchase program	—	—	—	—	(2,432)	—	(2,432)	—	(2,432)	
Repurchase of stock - withholdings on employee equity awards	(2)	—	(14)	(112)	—	—	(126)	—	(126)	
Dividends and dividend equivalents declared (\$0.315 per share)	—	—	—	(352)	—	—	(352)	—	(352)	
Balance at September 1, 2022	1,226	\$ 123	\$ 10,197	\$ 47,274	\$ (7,127)	\$ (560)	\$ 49,907	\$ —	\$49,907	

See accompanying notes to consolidated financial statements.

Micron Technology, Inc.

Consolidated Statements of Cash Flows

(In millions)

For the year ended	September 1, 2022	September 2, 2021	September 3, 2020
Cash flows from operating activities			
Net income	\$ 8,687	\$ 5,861	\$ 2,710
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation expense and amortization of intangible assets	7,116	6,214	5,650
Stock-based compensation	514	378	328
(Gain) loss on debt repurchases and conversions	83	1	(40)
Restructure and asset impairments	44	454	40
Change in operating assets and liabilities:			
Receivables	190	(1,446)	(723)
Inventories	(2,179)	866	(435)
Accounts payable and accrued expenses	744	210	725
Other	(18)	(70)	51
Net cash provided by operating activities	<u>15,181</u>	<u>12,468</u>	<u>8,306</u>
Cash flows from investing activities			
Expenditures for property, plant, and equipment	(12,067)	(10,030)	(8,223)
Purchases of available-for-sale securities	(1,770)	(3,163)	(1,857)
Proceeds from maturities of available-for-sale securities	1,321	1,250	814
Proceeds from sale of Lehi, Utah fab	888	—	—
Proceeds from sales of available-for-sale securities	294	856	1,458
Proceeds from government incentives	115	495	262
Other	(366)	3	(43)
Net cash provided by (used for) investing activities	<u>(11,585)</u>	<u>(10,589)</u>	<u>(7,589)</u>
Cash flows from financing activities			
Repurchases of common stock - repurchase program	(2,432)	(1,200)	(176)
Repayments of debt	(2,032)	(1,520)	(4,366)
Payments of dividends to shareholders	(461)	—	—
Payments on equipment purchase contracts	(141)	(295)	(63)
Repurchases of common stock - withholdings on employee equity awards	(125)	(94)	(75)
Acquisition of noncontrolling interest in IMFT	—	—	(744)
Proceeds from issuance of debt	2,000	1,188	5,000
Other	211	140	107
Net cash provided by (used for) financing activities	<u>(2,980)</u>	<u>(1,781)</u>	<u>(317)</u>
Effect of changes in currency exchange rates on cash, cash equivalents, and restricted cash			
	(106)	41	11
Net increase (decrease) in cash, cash equivalents, and restricted cash	510	139	411
Cash, cash equivalents, and restricted cash at beginning of period	7,829	7,690	7,279
Cash, cash equivalents, and restricted cash at end of period	<u>\$ 8,339</u>	<u>\$ 7,829</u>	<u>\$ 7,690</u>
Supplemental disclosures			
Income taxes paid, net	\$ (493)	\$ (361)	\$ (167)
Interest paid, net of amounts capitalized	(154)	(171)	(165)
Noncash equipment acquisitions on contracts payable	157	289	171

See accompanying notes to consolidated financial statements.

Micron Technology, Inc.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

(All tabular amounts in millions, except per share amounts)

Significant Accounting Policies

Basis of Presentation

We are 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 2022 and 2021 each contained 52 weeks and fiscal 2020 contained 53 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 or restricted cash, 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 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 included 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, conversion of share units, or issuance of shares under our ESPP.

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.

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, Utah that was dedicated to 3D XPoint production. As a result, we classified the property, plant, and equipment as held for sale as of the second quarter of 2021 and ceased depreciating the assets. On June 30, 2021, we announced a definitive agreement to sell our Lehi facility to TI and closed the sale on October 22, 2021.

In the first quarter of 2022, we received \$893 million from TI for the sale of the Lehi facility and disposed of \$918 million of net assets, consisting primarily of property, plant, and equipment of \$921 million; \$55 million of other assets, consisting primarily of a receivable for reimbursement of property taxes, equipment spare parts, and raw materials; and \$58 million of liabilities, consisting primarily of a finance lease obligation. As a result of the disposition of the Lehi facility and other related adjustments, we recognized a loss of \$23 million included in restructure and asset impairments in the first quarter of 2022.

In 2021, we recognized a charge of \$435 million included in restructure and asset impairments in connection with the definitive agreement with TI (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. 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. We also recognized a charge of \$49 million to cost of goods sold in 2021 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 were primarily included in our CNBU segment results.

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	<u>\$ 949</u>

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 were subsequently transferred with the sale. As of September 2, 2021, the carrying value of the Lehi assets held for sale approximated the expected cash consideration, net of estimated selling expenses.

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 the first quarter of 2020, IMFT, which operated a facility in Lehi, Utah, 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.

In the first quarter of 2020, 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 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 2020, IMFT manufactured 3D XPoint memory and its sales to Intel were \$158 million through the date of our purchase of Intel’s noncontrolling interest.

Cash and Investments

All of our marketable debt 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:

As of	2022				2021			
	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	\$ 6,055	\$ —	\$ —	\$ 6,055	\$ 5,796	\$ —	\$ —	\$ 5,796
Level 1 ⁽²⁾								
Money market funds	1,196	—	—	1,196	38	—	—	38
Level 2 ⁽³⁾								
Certificates of deposits	976	50	—	1,026	1,907	69	—	1,976
Corporate bonds	—	759	995	1,754	9	429	1,134	1,572
Asset-backed securities	—	20	608	628	8	95	509	612
Government securities	2	155	44	201	1	190	122	313
Commercial paper	33	85	—	118	4	87	—	91
	8,262	\$ 1,069	\$ 1,647	\$ 10,978	7,763	\$ 870	\$ 1,765	\$ 10,398
Restricted cash ⁽⁴⁾	77				66			
Cash, cash equivalents, and restricted cash	<u>\$ 8,339</u>				<u>\$ 7,829</u>			

⁽¹⁾ The maturities of long-term marketable securities primarily 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 1, 2022 or September 2, 2021.

⁽⁴⁾ Restricted cash is included in other current assets and 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.

Non-marketable Equity Investments

In addition to the amounts included in the table above, we had \$222 million and \$153 million of non-marketable equity investments without a readily determinable fair value that were included in other noncurrent assets as of September 1, 2022 and September 2, 2021, respectively. We recognized net gains in other non-operating income on these non-marketable investments of \$36 million and \$70 million for 2022 and 2021, 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	2022	2021
Trade receivables	\$ 4,765	\$ 4,920
Income and other taxes	251	264
Other	114	127
	<u>\$ 5,130</u>	<u>\$ 5,311</u>

Inventories

As of	2022	2021
Finished goods	\$ 1,028	\$ 513
Work in process	4,830	3,469
Raw materials and supplies	805	505
	<u>\$ 6,663</u>	<u>\$ 4,487</u>

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.

Property, Plant, and Equipment

As of	2022	2021
Land	\$ 280	\$ 280
Buildings	16,676	14,776
Equipment ⁽¹⁾	61,354	51,902
Construction in progress ⁽²⁾	1,897	1,517
Software	1,124	987
	81,331	69,462
Accumulated depreciation	(42,782)	(36,249)
	<u>\$ 38,549</u>	<u>\$ 33,213</u>

⁽¹⁾ Includes costs related to equipment not placed into service of \$3.35 billion as of September 1, 2022 and \$1.99 billion as of September 2, 2021.

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

Depreciation expense was \$7.03 billion, \$6.13 billion, and \$5.57 billion for 2022, 2021, and 2020, respectively. Interest capitalized as part of the cost of property, plant, and equipment was \$77 million, \$66 million, and \$77 million for 2022, 2021, and 2020, respectively.

Intangible Assets and Goodwill

As of	2022		2021	
	Gross Amount	Accumulated Amortization	Gross Amount	Accumulated Amortization
Product and process technology	\$ 742	\$ (321)	\$ 633	\$ (284)
Goodwill	1,228		1,228	

In 2022, 2021, and 2020, we capitalized \$158 million, \$106 million, and \$73 million, respectively, for product and process technology with weighted-average useful lives of 9 years, 9 years, and 10 years, respectively. Amortization expense was \$85 million, \$82 million, and \$78 million for 2022, 2021, and 2020, respectively. Expected amortization expense is \$83 million for 2023, \$72 million for 2024, \$52 million for 2025, \$43 million for 2026, and \$37 million for 2027.

Leases

We have finance and operating leases through which we obtain the right to use facilities, land, and equipment that support our business operations. Our finance leases consist primarily of gas or other supply agreements that are deemed to contain embedded leases. Our operating leases consist primarily of offices, laboratories, other facilities, and land. 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. Our assessment includes determining whether we or the supplier control the assets used to fulfill the agreements 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 any options to renew or terminate a lease or 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.

The components of lease cost are presented below:

For the year ended	2022	2021	2020
Finance lease cost			
Amortization of right-of-use asset	\$ 99	\$ 69	\$ 140
Interest on lease liability	24	20	22
Operating lease cost ⁽¹⁾	125	108	102
	<u>\$ 248</u>	<u>\$ 197</u>	<u>\$ 264</u>

⁽¹⁾ Operating lease cost includes short-term and variable lease expenses, which were not material for the periods presented.

Supplemental cash flow information related to leases was as follows:

For the year ended	2022	2021	2020
Cash flows used for operating activities			
Finance leases	\$ 23	\$ 21	\$ 24
Operating leases ⁽¹⁾	110	106	39
Cash flows used for financing activities – Finance leases	103	85	248
Noncash acquisitions of right-of-use assets			
Finance leases	309	395	107
Operating leases	197	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	2022	2021
Finance lease right-of-use assets (included in property, plant, and equipment and assets held for sale)	\$ 904	\$ 766
Current operating lease liabilities (included in accounts payable and accrued expenses)	60	55
Weighted-average remaining lease term (in years)		
Finance leases	12	11
Operating leases	12	12
Weighted-average discount rate		
Finance leases	2.65 %	3.14 %
Operating leases	2.90 %	2.63 %

As of September 1, 2022, maturities of lease liabilities were as follows:

For the year ending	Finance Leases	Operating Leases
2023	\$ 123	\$ 66
2024	100	80
2025	87	70
2026	87	67
2027	86	64
2028 and thereafter	534	463
Less imputed interest	(131)	(140)
	<u>\$ 886</u>	<u>\$ 670</u>

The table above excludes obligations for leases that have been executed but have not yet commenced. As of September 1, 2022, excluded obligations consisted of \$212 million of finance lease obligations over a weighted-average period of 14 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	2022	2021
Accounts payable	\$ 2,142	\$ 1,744
Property, plant, and equipment	2,170	1,887
Salaries, wages, and benefits	877	984
Income and other taxes	420	364
Other	481	346
	<u>\$ 6,090</u>	<u>\$ 5,325</u>

Debt

As of	2022						2021			
	Stated Rate	Effective Rate	Principal	Net Carrying Amount			Principal	Current	Net Carrying Amount	
				Current	Long-Term	Total			Long-Term	Total
2024 Term Loan A	3.700 %	3.74 %	\$ 1,188	\$ —	\$ 1,187	\$ 1,187	\$ 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	—	806	806	900	—	901	901
2029 Notes	5.327 %	5.40 %	700	—	697	697	700	—	696	696
2030 Notes	4.663 %	4.73 %	850	—	846	846	850	—	846	846
2032 Green Bonds	2.703 %	2.77 %	1,000	—	994	994	—	—	—	—
2041 Notes	3.366 %	3.41 %	500	—	496	496	—	—	—	—
2051 Notes	3.477 %	3.52 %	500	—	496	496	—	—	—	—
Finance lease obligations	N/A	2.65 %	886	103	783	886	804	155	649	804
2023 Notes	N/A	N/A	—	—	—	—	1,250	—	1,247	1,247
2024 Notes	N/A	N/A	—	—	—	—	600	—	598	598
			<u>\$ 7,024</u>	<u>\$ 103</u>	<u>\$ 6,803</u>	<u>\$ 6,906</u>	<u>\$ 6,792</u>	<u>\$ 155</u>	<u>\$ 6,621</u>	<u>\$ 6,776</u>

⁽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 values of our 2027 Notes reflect adjustments in fair value.

As of September 1, 2022, 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 future secured indebtedness, to the extent of the value of the assets securing such indebtedness. As of September 1, 2022, Micron had unsecured debt with a carrying value of \$6.02 billion 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 certain liabilities of its subsidiaries are unsecured obligations ranking equally in right of payment with all of Micron's other existing and future unsecured indebtedness.

Senior Unsecured Notes

On November 1, 2021, we issued \$2.00 billion aggregate principal amount of unsecured 2032 Green Bonds, 2041 Notes, and 2051 Notes in a public offering. Issuance costs for these notes were \$14 million. Over time, we plan to allocate an amount equal to the net proceeds of the 2032 Green Bonds to fund eligible sustainability-focused projects involving renewable energy, green buildings, energy efficiency, water management, waste abatement, and a circular economy.

We may redeem our 2026 Notes, 2027 Notes, 2029 Notes, 2030 Notes, 2032 Green Bonds, 2041 Notes, and 2051 Notes (the "Senior Unsecured Notes"), in whole or in part, at our option prior to their respective maturity date at a redemption price equal to the greater of (i) 100% of the principal amount of the notes to be redeemed and (ii) the present value of the remaining scheduled payments of principal, in each case plus accrued interest. We may also redeem any series of our Senior Unsecured Notes, in whole or in part, at a price equal to par between two and six months prior to maturity in accordance with the respective terms of such series.

Each series of Senior Unsecured Notes contains 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

In 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. The credit facility agreement provides for a transition to SOFR or other alternate benchmark rate upon the retirement of LIBOR in 2023. Any amounts outstanding under the Revolving Credit Facility would mature in May 2026 and amounts borrowed may be prepaid without penalty. As of September 1, 2022, 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

In 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 term loan agreement provides for a transition to SOFR or other alternate benchmark rate upon the retirement of LIBOR in 2023. 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 and prepayments of debt in 2022:

	Increase (Decrease) in Principal	Increase (Decrease) in Carrying Value	Increase (Decrease) in Cash	Gain (Loss)
Issuances				
2032 Green Bonds	\$ 1,000	\$ 994	\$ 994	\$ —
2041 Notes	500	496	496	—
2051 Notes	500	496	496	—
Prepayments				
2023 Notes	(1,250)	(1,247)	(1,281)	(34)
2024 Notes	(600)	(598)	(647)	(49)
	<u>\$ 150</u>	<u>\$ 141</u>	<u>\$ 58</u>	<u>\$ (83)</u>

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, which approximated the carrying value of debt and equity for those notes.

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.

Maturities of Notes Payable

As of September 1, 2022, maturities of notes payable by fiscal year were as follows:

2023	\$ —
2024	—
2025	1,188
2026	500
2027	900
2028 and thereafter	3,550
Unamortized discounts	(27)
Hedge accounting fair value adjustment	(91)
	<u>\$ 6,020</u>

Commitments

As of September 1, 2022, we had commitments of approximately \$7.1 billion for purchase obligations, of which approximately \$5.4 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 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 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 infringed one 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 infringed one 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 November 26, 2021, pursuant to a settlement agreement between UMC and Micron, UMC filed an application to the Fuzhou Court to withdraw its complaints against MXA and MSS.

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 November 26, 2021, pursuant to a settlement agreement between UMC and Micron, UMC filed an application to the Fuzhou Court to withdraw its complaint against MSS.

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. 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. (“Netlist”) filed two patent infringement actions against Micron, Micron Semiconductor Products, Inc. (“MSP”) and Micron Technology Texas, LLC (“MTEC”) in the U.S. District Court for the Western District of Texas. The first complaint alleges that one 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 (“LRDIMMs”). Each complaint seeks injunctive relief, damages, attorneys’ fees, and costs. On March 31, 2022, Netlist filed a patent infringement complaint against Micron and Micron Semiconductor Germany, GmbH in Dusseldorf Regional Court alleging that two German patents are infringed by certain of our LRDIMMs. The complaint seeks damages and costs. On June 24, 2022, Netlist amended its complaint to also seek injunctive relief. On June 10, 2022, Netlist filed a patent infringement complaint against Micron, MSP, and MTEC in the U.S. District Court for the Eastern District of Texas (“E.D. Tex.”) alleging that six U.S. patents are infringed by certain of our memory modules and HBM products. The complaint seeks injunctive relief, damages, and attorneys’ fees. On August 1, 2022, Netlist filed a second patent infringement complaint against Micron, MSP, and MTEC in E.D. Tex. alleging that one U.S. patent is infringed by certain of our LRDIMMs. On August 15, 2022, Netlist amended the second complaint to assert that two additional U.S. patents are infringed by certain of our LRDIMMs. The second complaint in E.D. Tex. seeks injunctive relief, damages, and attorneys’ fees.

On May 10, 2021, Vervain, LLC filed a patent infringement action against Micron, MSP, and MTEC 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.

On April 27, 2022, Bell Semiconductor, LLC (“Bell”) filed a patent infringement action against Micron in the U.S. District Court for the District of Idaho. The complaint alleges that one U.S. patent is infringed by a certain SSD controller. On April 28, 2022, Bell filed a complaint with the U.S. International Trade Commission (“ITC”) alleging violations of Section 337 of the Tariff Act of 1930 based on alleged importation of articles and components that infringe the same U.S. patent that Bell asserts in the complaint it filed in the District of Idaho. At Bell’s request, the ITC investigation was terminated on August 30, 2022. On August 26, 2022, Bell filed a second patent infringement complaint in the District of Idaho alleging that two U.S. patents are infringed by a certain SSD controller. On September 30, 2022, Bell filed a complaint against Micron in the U.S. District Court for the District of Delaware alleging that six U.S. patents are infringed by certain SSD, GDDR5, GDDR6, GDDR6X, and DDR3 SDRAM products. On October 5, 2022, Bell filed a third complaint against Micron in the District of Idaho alleging that one U.S. patent is infringed by Micron’s process for designing a NAND flash device included in certain Micron SSD products. Each of Bell’s complaints in the District Courts seeks damages, injunctive relief, attorneys’ fees, and costs. On October 6, 2022, Bell filed a complaint with the ITC alleging violations of Section 337 of the Tariff Act of 1930 based on alleged importation of certain SSDs that infringe two U.S. patents also asserted by Bell in two of the lawsuits pending in the District of Idaho. The complaint requests institution of an investigation and, after the investigation, issuance of a limited exclusion order and cease and desist orders prohibiting Micron from importing, selling, offering for sale, or marketing the accused products in the United States.

On August 16, 2022, Sonrai Memory Ltd. filed a patent infringement action against Micron in the U.S. District Court for the Western District of Texas. The complaint alleges that two U.S. patents are infringed by certain SSD and NAND flash products. The complaint seeks 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. Micron and Micron B.V. appealed the judgments to the German Appeals Court, which 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 March 31, 2020, the expert presented an opinion to the Appeals Court concluding that the amount paid by Micron was within an acceptable range of fair value. On October 5, 2022, the Appeals Court ruled that the relevant issue to be addressed is whether Qimonda's creditors were prejudiced such that the original transaction should be voided. A hearing of the Appeals Court has been scheduled for December 2022.

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 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. The plaintiffs appealed to the U.S. Court of Appeals for the Ninth Circuit. On March 7, 2022, the Court of Appeals affirmed the District Court's ruling dismissing plaintiffs' claims, and subsequently denied the plaintiffs' request for rehearing. The plaintiffs did not further appeal the ruling of the Court of Appeals.

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 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. On October 1, 2021, the plaintiffs filed a notice of appeal to the U.S. Court of Appeals for the Ninth Circuit. On June 29, 2022, the Court of Appeals granted a joint motion to dismiss the plaintiffs' appeal.

Additionally, six cases have been filed in the following Canadian courts on the dates indicated: Superior Court of Quebec (April 30, 2018 and May 3, 2018), the Federal Court of Canada (May 2, 2018), the Ontario Superior Court of Justice (May 15, 2018), and the Supreme Court of British Columbia (May 10, 2018). The plaintiffs in these cases are individuals seeking certification of class actions on behalf of direct and indirect purchasers of DRAM in Canada (or regions of Canada) between June 1, 2016 and February 1, 2018. 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 Matters

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.

Contingency Assessment

We are unable to predict the outcome of any of the 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.

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 35.4 million shares of our common stock for \$2.43 billion in 2022 and 15.6 million shares for \$1.20 billion in 2021. Through September 1, 2022, we had repurchased an aggregate of \$6.47 billion under the authorization. Amounts repurchased are included in treasury stock.

Dividends: On September 29, 2022, we announced that our Board of Directors had declared a quarterly dividend of \$0.115 per share, payable in cash on October 26, 2022, to shareholders of record as of the close of business on October 11, 2022.

Accumulated Other Comprehensive Income (Loss): Changes in accumulated other comprehensive income (loss) by component for the year ended September 1, 2022 were as follows:

	Gains (Losses) on Derivative Instruments	Unrealized Gains (Losses) on Investments	Pension Liability Adjustments	Cumulative Foreign Currency Translation Adjustment	Total
As of September 2, 2021	\$ (22)	\$ 1	\$ 22	\$ 1	\$ 2
Other comprehensive income before reclassifications	(720)	(63)	6	(1)	(778)
Amount reclassified out of accumulated other comprehensive income	53	1	(2)	—	52
Tax effects	151	14	(1)	—	164
Other comprehensive income (loss)	(516)	(48)	3	(1)	(562)
As of September 1, 2022	\$ (538)	\$ (47)	\$ 25	\$ —	\$ (560)

Fair Value Measurements

The estimated fair values and carrying values of our outstanding debt instruments were as follows:

As of	2022		2021	
	Fair Value	Carrying Value	Fair Value	Carrying Value
Notes	\$ 5,472	\$ 6,020	\$ 6,584	\$ 5,973

The fair values of our 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 1, 2022			
Derivative instruments with hedge accounting designation			
Cash flow currency hedges	\$ 5,427	\$ —	\$ (330)
Cash flow commodity hedges	97	1	(6)
Fair value interest rate hedges	900	—	(91)
Derivative instruments without hedge accounting designation			
Non-designated currency hedges	2,821	7	(13)
		<u>\$ 8</u>	<u>\$ (440)</u>
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)
		<u>\$ 20</u>	<u>\$ (68)</u>

⁽¹⁾ Included in receivables and other noncurrent assets.

⁽²⁾ Included in accounts payable and accrued expenses 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 to minimize 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 from cash flow hedges of \$735 million and \$52 million for 2022 and 2021, respectively, and gains of \$51 million for 2020, in accumulated other comprehensive income. We reclassified \$53 million of losses and \$41 million of gains in 2022 and 2021, respectively, from accumulated other comprehensive income to earnings, primarily to cost of goods sold. The reclassifications were not significant in 2020. As of September 1, 2022, we expect to reclassify \$263 million of pre-tax losses related to cash flow hedges from accumulated other comprehensive income into earnings in the next 12 months.

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. We recognized interest expense of \$96 million for changes in the fair value of our interest rate swaps in 2022. We also recognized offsetting interest expense of the same amounts related to the changes in the fair value of the hedged portion of the underlying debt for these periods. The amounts recognized for 2021 were not significant.

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. The amounts recognized for derivative instruments without hedge accounting designation were not significant for the periods presented.

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 1, 2022 and September 2, 2021, amounts netted under our master netting arrangements were not significant.

Equity Plans

As of September 1, 2022, 90 million shares of our common stock were available for future awards under our equity plans, including 18 million shares approved for issuance under our employee stock purchase plan (“ESPP”).

Restricted Stock and Restricted Stock Units (“Restricted Stock Awards”)

As of September 1, 2022, there were 23 million shares of Restricted Stock Awards outstanding, 20 million of which contained only service conditions. For service-based Restricted Stock Awards granted through October 2021, restrictions generally lapse in one-fourth or one-third increments during each year of employment after the grant date. For service-based Restricted Stock Awards granted beginning in November 2021, restrictions generally lapse on 25% of the units granted after the first year and on 6.25% each quarter thereafter over the remaining three years of employment. 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. In 2022, our Board of Directors approved dividend equivalent rights for unvested restricted stock units awarded on or after October 13, 2021.

Restricted Stock Awards activity for 2022 is summarized as follows:

	Number of Shares	Weighted- Average Grant Date Fair Value Per Share
Outstanding as of September 2, 2021	20	\$ 49.39
Granted	13	70.81
Restrictions lapsed	(7)	47.36
Canceled	(3)	57.00
Outstanding as of September 1, 2022	<u>23</u>	<u>60.93</u>

For the year ended	2022	2021	2020
Restricted stock award shares granted	13	11	8
Weighted-average grant-date fair value per share	\$ 70.81	\$ 53.58	\$ 46.44
Aggregate vesting-date fair value of shares vested	\$ 498	\$ 385	\$ 294

Employee Stock Purchase Plan (“ESPP”)

Our ESPP is offered to substantially all employees 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	2022	2021	2020
Weighted-average grant-date fair value per share	\$ 18.87	\$ 20.71	\$ 14.24
Average expected life in years	0.5	0.5	0.5
Weighted-average expected volatility (based on implied volatility)	43 %	41 %	45 %
Weighted-average risk-free interest rate	2.0 %	0.1 %	0.8 %
Expected dividend yield	0.6 %	0.3 %	0.0 %

Under the ESPP, employees purchased 4 million shares of common stock for \$215 million in 2022, 3 million shares for \$140 million in 2021, and 3 million shares for \$118 million in 2020.

Stock Options

As of September 1, 2022, stock options of 3 million shares were outstanding, all of which were fully exercisable. Stock options expire 8 years from the date of grant. We did not grant any stock options in 2022, 2021, or 2020. Stock options of 1 million shares were exercised in 2022. The total intrinsic value for options exercised was \$54 million, \$143 million, and \$130 million in 2022, 2021, and 2020, respectively.

Stock-based Compensation Expense

For the year ended	2022	2021	2020
Stock-based compensation expense by caption			
Cost of goods sold	\$ 193	\$ 186	\$ 139
Research and development	175	110	86
Selling, general, and administrative	133	99	103
Restructure	(5)	—	—
	<u>\$ 496</u>	<u>\$ 395</u>	<u>\$ 328</u>
Stock-based compensation expense by type of award			
Restricted stock awards	\$ 429	\$ 333	\$ 272
ESPP	66	52	39
Stock options	1	10	17
	<u>\$ 496</u>	<u>\$ 395</u>	<u>\$ 328</u>

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 \$77 million, \$83 million, and \$72 million for 2022, 2021, and 2020, respectively. Stock-based compensation expense of \$48 million and \$30 million was capitalized and remained in inventory as of September 1, 2022 and September 2, 2021, respectively. As of September 1, 2022, \$1.02 billion 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 2026, resulting in a weighted-average period of 1.3 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 \$66 million, \$77 million, and \$66 million in 2022, 2021, and 2020, respectively.

Retirement Plans

We have pension plans available to employees at various foreign sites. As of September 1, 2022, the projected benefit obligations of our plans were \$186 million and plan assets were \$221 million. As of September 2, 2021, the projected benefit obligations of our plans were \$222 million and plan assets were \$256 million. Pension expense was not material for 2022, 2021, or 2020.

Revenue

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 1, 2022, our future performance obligations beyond one year were not significant.

As of September 1, 2022 and September 2, 2021, other current liabilities included \$1.26 billion and \$846 million for estimates of consideration payable to customers, respectively, including estimates for pricing adjustments and returns.

Revenue by Technology

For the year ended	2022	2021	2020
DRAM	\$ 22,386	\$ 20,039	\$ 14,510
NAND	7,811	7,007	6,131
Other (primarily 3D XPoint memory and NOR)	561	659	794
	<u>\$ 30,758</u>	<u>\$ 27,705</u>	<u>\$ 21,435</u>

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

Restructure and Asset Impairments

For the year ended	2022	2021	2020
Restructure and asset impairments	\$ 48	\$ 488	\$ 60

Restructure and asset impairments for 2022 and 2021 are primarily related to the 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.

Other Operating (Income) Expense, Net

For the year ended	2022	2021	2020
Patent license charges	\$ —	\$ 128	\$ —
(Gain) loss on disposition of property, plant, and equipment	(41)	(24)	(3)
Other	7	(9)	11
	<u>\$ (34)</u>	<u>\$ 95</u>	<u>\$ 8</u>

Other Non-Operating Income (Expense), Net

For the year ended	2022	2021	2020
Gain (loss) on investments	\$ 26	\$ 82	\$ 22
Gain (loss) on debt prepayments, repurchases, and conversions	(83)	(1)	40
Other	19	—	(2)
	<u>\$ (38)</u>	<u>\$ 81</u>	<u>\$ 60</u>

Income Taxes

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

For the year ended	2022	2021	2020
Income (loss) before income taxes, net income (loss) attributable to noncontrolling interests, and equity in net income (loss) of equity method investees			
U.S.	\$ 112	\$ (211)	\$ 308
Foreign	9,459	6,429	2,675
	<u>\$ 9,571</u>	<u>\$ 6,218</u>	<u>\$ 2,983</u>
Income tax (provision) benefit			
Current			
U.S. federal	\$ (65)	\$ (42)	\$ (20)
State	(1)	(1)	(2)
Foreign	(528)	(370)	(148)
	<u>(594)</u>	<u>(413)</u>	<u>(170)</u>
Deferred			
U.S. federal	(166)	(9)	39
State	(225)	28	23
Foreign	97	—	(172)
	<u>(294)</u>	<u>19</u>	<u>(110)</u>
Income tax (provision) benefit	<u>\$ (888)</u>	<u>\$ (394)</u>	<u>\$ (280)</u>

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

For the year ended	2022		2021		2020	
U.S. federal income tax (provision) benefit at statutory rate	\$ (2,010)	21.0 %	\$ (1,306)	21.0 %	\$ (626)	21.0 %
U.S. tax on foreign operations	(322)	3.4 %	(226)	3.6 %	(14)	0.5 %
Change in valuation allowance	(241)	2.5 %	54	(0.9)%	(20)	0.7 %
Change in unrecognized tax benefits	(67)	0.7 %	(238)	3.8 %	(33)	1.1 %
Foreign tax rate differential	1,601	(16.7)%	951	(15.3)%	253	(8.5)%
Research and development tax credits	66	(0.7)%	123	(2.0)%	62	(2.1)%
Foreign derived intangible income deduction	41	(0.4)%	18	(0.3)%	67	(2.2)%
State taxes, net of federal benefit	—	— %	59	(0.9)%	23	(0.8)%
Debt premium deductions	—	— %	130	(2.1)%	—	— %
Other	44	(0.5)%	41	(0.6)%	8	(0.3)%
Income tax (provision) benefit	<u>\$ (888)</u>	<u>9.3 %</u>	<u>\$ (394)</u>	<u>6.3 %</u>	<u>\$ (280)</u>	<u>9.4 %</u>

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 \$1.12 billion (benefiting our diluted earnings per share by \$1.00) for 2022, by \$758 million (\$0.66 per diluted share) for 2021, and by \$215 million (\$0.19 per diluted share) for 2020.

As of September 1, 2022, certain non-U.S. subsidiaries had cumulative undistributed earnings of \$4.38 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.

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	2022	2021
Deferred tax assets		
Net operating loss and tax credit carryforwards	\$ 796	\$ 783
Accrued salaries, wages, and benefits	157	206
Operating lease liabilities	138	109
Inventories	77	—
Property, plant, and equipment	44	37
Other	142	115
Gross deferred tax assets	1,354	1,250
Less valuation allowance	(471)	(233)
Deferred tax assets, net of valuation allowance	883	1,017
Deferred tax liabilities		
Right-of-use assets	(126)	(90)
Product and process technology	—	(12)
Other	(68)	(143)
Deferred tax liabilities	(194)	(245)
Net deferred tax assets	\$ 689	\$ 772
Reported as		
Deferred tax assets	\$ 702	\$ 782
Deferred tax liabilities (included in other noncurrent liabilities)	(13)	(10)
Net deferred tax assets	\$ 689	\$ 772

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 1, 2022, and September 2, 2021, we had a valuation allowance of \$471 million and \$233 million, respectively, against our net deferred tax assets, primarily related to carryforwards in U.S. states and Malaysia. Changes in 2022 in the valuation allowance were due to adjustments based on management's assessment of the realizability of tax credits, allowances and net operating losses based on a level that is more likely than not to be realized.

On March 16, 2022, the Idaho governor signed a new law that changed the way corporations calculate Idaho taxable income. This new law is expected to reduce our Idaho taxable income, and consequently, we do not expect to utilize our tax credits in Idaho for the foreseeable future. As a result, we recorded a valuation allowance against our Idaho deferred tax assets and an increase to tax expense of \$189 million in 2022.

As of September 1, 2022, our net operating loss carryforward amounts and expiration periods, as reported to tax authorities, were as follows:

Year of Expiration	State	Japan	Malaysia	Other	Total
2023 - 2027	\$ 44	\$ 418	\$ —	\$ 12	\$ 474
2028 - 2032	377	234	—	—	611
2033 - 2037	249	—	—	—	249
2038 - 2042	197	—	—	—	197
Indefinite	6	—	851	4	861
	\$ 873	\$ 652	\$ 851	\$ 16	\$ 2,392

As of September 1, 2022, 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
2023 - 2027	\$ —	\$ 46	\$ 46
2028 - 2032	—	103	103
2033 - 2037	—	128	128
2038 - 2042	278	5	283
Indefinite	—	115	115
	<u>\$ 278</u>	<u>\$ 397</u>	<u>\$ 675</u>

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

For the year ended	2022	2021	2020
Beginning unrecognized tax benefits	\$ 660	\$ 411	\$ 383
Increases related to tax positions from prior years	14	2	14
Increases related to tax positions taken in current year	80	260	27
Decreases related to tax positions from prior years	(23)	(13)	(13)
Ending unrecognized tax benefits	<u>\$ 731</u>	<u>\$ 660</u>	<u>\$ 411</u>

As of September 1, 2022, gross unrecognized tax benefits were \$731 million, which would have an impact of approximately \$564 million on our effective tax rate in the future, if recognized. 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 2018 through 2022. 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 2016 to 2022. 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	2022	2021	2020
Net income attributable to Micron – Basic	\$ 8,687	\$ 5,861	\$ 2,687
Assumed conversion of debt	—	—	(4)
Net income attributable to Micron – Diluted	<u>\$ 8,687</u>	<u>\$ 5,861</u>	<u>\$ 2,683</u>
Weighted-average common shares outstanding – Basic	1,112	1,120	1,110
Dilutive effect of equity plans and convertible notes	10	21	21
Weighted-average common shares outstanding – Diluted	<u>1,122</u>	<u>1,141</u>	<u>1,131</u>
Earnings per share			
Basic	\$ 7.81	\$ 5.23	\$ 2.42
Diluted	7.75	5.14	2.37

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	2022	2021	2020
Equity plans	5	2	5

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.

Embedded Business Unit (“EBU”): Includes memory and storage products sold into automotive, industrial, and consumer 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.

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 1, 2022 and September 2, 2021, CNBU, MBU, SBU, and EBU had goodwill of \$832 million, \$198 million, \$101 million, and \$97 million, respectively.

For the year ended	2022	2021	2020
Revenue			
CNBU	\$ 13,693	\$ 12,280	\$ 9,184
MBU	7,260	7,203	5,702
EBU	5,235	4,209	2,759
SBU	4,553	3,973	3,765
All Other	17	40	25
	<u>\$ 30,758</u>	<u>\$ 27,705</u>	<u>\$ 21,435</u>
Operating income (loss)			
CNBU	\$ 5,844	\$ 4,295	\$ 2,010
MBU	2,160	2,173	1,074
EBU	1,752	1,006	301
SBU	513	173	36
All Other	12	20	(2)
	<u>10,281</u>	<u>7,667</u>	<u>3,419</u>
Unallocated			
Stock-based compensation	(501)	(395)	(328)
Inventory accounting policy change to FIFO	—	(133)	—
Change in inventory cost absorption	—	(160)	—
3D XPoint inventory write-down	—	(49)	—
Restructure and asset impairments	(48)	(488)	(60)
Patent license charges	—	(128)	—
Other	(30)	(31)	(28)
	<u>(579)</u>	<u>(1,384)</u>	<u>(416)</u>
Operating income	<u>\$ 9,702</u>	<u>\$ 6,283</u>	<u>\$ 3,003</u>

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

For the year ended	2022	2021	2020
CNBU	\$ 2,766	\$ 2,497	\$ 2,318
MBU	1,725	1,553	1,436
EBU	1,280	1,028	741
SBU	1,323	1,101	1,115
All Other	2	8	12
Unallocated	20	27	28
	<u>\$ 7,116</u>	<u>\$ 6,214</u>	<u>\$ 5,650</u>

Certain Concentrations

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

For the year ended	2022	2021	2020
Mobile	25 %	25 %	25 %
Client and graphics	20 %	20 %	20 %
Enterprise and cloud server	20 %	20 %	20 %
SSDs and other storage	15 %	15 %	20 %
Automotive, industrial, and consumer	15 %	15 %	15 %

Revenue from Kingston Technology Company, Inc. was 12% and 11% of total revenue for 2022 and 2020, respectively. Revenue from WPG Holdings Limited was 11% and 13% of total revenue in 2022 and 2021, respectively. Sales to Kingston were primarily included in our CNBU and SBU segments; and sales to WPG were primarily included in our MBU, CNBU, 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	2022	2021	2020
United States	\$ 16,026	\$ 12,155	\$ 10,381
Taiwan	6,185	6,606	3,657
Mainland China (excluding Hong Kong)	3,311	2,456	2,337
Japan	1,696	1,652	1,387
Hong Kong	1,665	2,582	1,792
Other Asia Pacific	1,223	1,420	1,157
Other	652	834	724
	<u>\$ 30,758</u>	<u>\$ 27,705</u>	<u>\$ 21,435</u>

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

As of	2022	2021
Taiwan	\$ 13,143	\$ 11,457
Singapore	12,045	9,411
Japan	7,113	7,222
United States ⁽¹⁾	5,155	5,205
Malaysia	994	757
China	440	436
Other	337	175
	<u>\$ 39,227</u>	<u>\$ 34,663</u>

⁽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 1, 2022 and September 2, 2021, 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 1, 2022, including the related notes and schedule of valuation and qualifying accounts for each of the three years in the period ended September 1, 2022 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 1, 2022, 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 1, 2022 and September 2, 2021, and the results of its operations and its cash flows for each of the three years in the period ended September 1, 2022 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 1, 2022, based on criteria established in *Internal Control – Integrated Framework* (2013) issued by the COSO.

Change 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 in 2021.

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 1, 2022, the Company had a net inventory balance for finished goods and work in process inventory totaling approximately \$5.9 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 7, 2022

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 amended (the “Exchange Act”)) 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 SEC’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 2022, 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 1, 2022. The effectiveness of our internal control over financial reporting as of September 1, 2022 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 2022 Proxy Statement which will be filed with the SEC within 120 days after September 1, 2022 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 1, 2022	\$ 233	\$ 241	\$ (3)	\$ 471
Year ended September 2, 2021	294	(54)	(7)	233
Year ended September 3, 2020	277	20	(3)	294

Index to Exhibits

Exhibit Number	Description of Exhibit	Filed Herewith	Form	Period Ending	Exhibit/Appendix	Filing Date
3.1	<u>Restated Certificate of Incorporation of the Registrant</u>		8-K		99.2	1/26/15
3.2	<u>Bylaws of the Registrant, Amended and Restated</u>		8-K		3.1	2/16/21
4.1	<u>Indenture, dated as of February 6, 2019, by and between Micron Technology, Inc. and U.S. Bank National Association, as Trustee</u>		8-K		4.1	2/6/19
4.2	<u>First Supplemental Indenture, dated as of February 6, 2019, by and between Micron Technology, Inc. and U.S. Bank National Association, as Trustee</u>		8-K		4.2	2/6/19
4.3	<u>Form of Note for Micron Technology, Inc.'s 4.975% Senior Notes due 2026 (included in Exhibit 4.2)</u>		8-K		4.4	2/6/19
4.4	<u>Form of Note for Micron Technology, Inc.'s 5.327% Senior Notes due 2029 (included in Exhibit 4.2)</u>		8-K		4.5	2/6/19
4.5	<u>Second Supplemental Indenture, dated as of July 12, 2019, by and between Micron Technology, Inc. and U.S. Bank National Association, as Trustee</u>		8-K		4.2	7/12/19
4.6	<u>Form of Note for Micron Technology, Inc.'s 4.185% Senior Notes due 2027 (included in Exhibit 4.5)</u>		8-K		4.3	7/12/19
4.7	<u>Form of Note for Micron Technology, Inc.'s 4.663% Senior Notes due 2030 (included in Exhibit 4.5)</u>		8-K		4.4	7/12/19
4.8	<u>Fourth Supplemental Indenture, dated as of November 1, 2021, by and between Micron Technology, Inc. and U.S. Bank National Association, as Trustee</u>		8-K		4.2	11/1/21
4.9	<u>Form of Note for Micron Technology, Inc.'s 2.703% Senior Notes due 2032 (included in Exhibit 4.8)</u>		8-K		4.3	11/1/21
4.10	<u>Form of Note for Micron Technology, Inc.'s 3.366% Senior Notes due 2041 (included in Exhibit 4.8)</u>		8-K		4.4	11/1/21
4.11	<u>Form of Note for Micron Technology, Inc.'s 3.477% Senior Notes due 2051 (included in Exhibit 4.8)</u>		8-K		4.5	11/1/21
4.12	<u>Description of Registrant's Securities</u>	X				
10.1*	<u>Micron Technology, Inc. Executive Officer Performance Incentive Plan</u>		DEF 14A		B	12/7/17
10.2*	<u>Amended and Restated 2004 Equity Incentive Plan</u>		10-K	9/1/16	10.6	10/28/16
10.3*	<u>2004 Equity Incentive Plan Forms of Agreement and Terms and Conditions</u>		10-K	9/1/16	10.7	10/28/16
10.4*	<u>Amended and Restated 2007 Equity Incentive Plan</u>		DEF 14A		A	12/1/20
10.5*	<u>2007 Equity Incentive Plan Forms of Agreement and Terms and Conditions</u>		10-Q	12/2/21	10.1	1/6/22
10.6*	<u>Nonstatutory Stock Option Plan, as Amended</u>		10-K	9/1/16	10.10	10/28/16
10.7*	<u>Nonstatutory Stock Option Plan Form of Agreement and Terms and Conditions</u>		10-K	9/1/16	10.11	10/28/16
10.8*	<u>Form of Indemnification Agreement between the Registrant and its officers and directors</u>		10-Q	2/27/14	10.3	4/7/14
10.9*	<u>Form of Severance Agreement</u>		8-K		99.2	11/1/07
10.10*	<u>Deferred Compensation Plan, as amended</u>		10-Q	6/2/22	10.2	7/1/22
10.11*	<u>Amended and Restated Executive Agreement by and between Micron Technology, Inc. and Sanjay Mehrotra</u>	X				
10.12*	<u>Severance Benefits for Sumit Sadana</u>		10-Q	11/30/17	10.70	12/20/17
10.13*	<u>Form of Amendment to Executive/Severance Agreement</u>		8-K		99.1	11/13/17
10.14*	<u>Severance Benefits for Manish Bhatia</u>		10-Q	11/30/17	10.74	12/20/17
10.15*	<u>Micron Technology, Inc. Employee Stock Purchase Plan, as amended and restated</u>		10-Q	6/2/22	10.1	7/1/22

Exhibit Number	Description of Exhibit	Filed Herewith	Form	Period Ending	Exhibit/Appendix	Filing Date
10.16*	<u>Severance Benefits for Mark Murphy</u>		10-Q	6/2/22	10.3	7/1/22
10.17	<u>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</u>		10-Q	6/3/21	10.22	7/1/21
10.18	<u>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</u>		10-Q	6/3/21	10.23	7/1/21
21.1	<u>Subsidiaries of the Registrant</u>	X				
23.1	<u>Consent of Independent Registered Public Accounting Firm</u>	X				
31.1	<u>Rule 13a-14(a) Certification of Chief Executive Officer</u>	X				
31.2	<u>Rule 13a-14(a) Certification of Chief Financial Officer</u>	X				
32.1	<u>Certification of Chief Executive Officer Pursuant to 18 U.S.C. 1350</u>	X				
32.2	<u>Certification of Chief Financial Officer Pursuant to 18 U.S.C. 1350</u>	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				

* Indicates management contract or compensatory plan or arrangement.

ITEM 16. FORM 10-K SUMMARY

None.

**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 7, 2022

/s/ Sanjay Mehrotra

Sanjay Mehrotra
President and Chief Executive Officer and Director

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

I, Mark Murphy, 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 7, 2022

/s/ Mark Murphy

Mark Murphy
Executive Vice President and Chief Financial Officer

**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 1, 2022, 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 7, 2022

/s/ Sanjay Mehrotra

Sanjay Mehrotra

President and Chief Executive Officer and Director

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

I, Mark Murphy, 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 1, 2022, 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 7, 2022

/s/ Mark Murphy

Mark Murphy
Executive Vice President and Chief Financial Officer