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 October 31, 2022

or

☐ **TRANSITION REPORT PURSUANT TO SECTION 13 OR 15(d) OF THE SECURITIES EXCHANGE ACT OF 1934.**
For transition period from to

Commission File Number: 001-15405

Agilent Technologies, Inc.

(Exact name of registrant as specified in its charter)

Delaware	**77-0518772**
(State or other jurisdiction of incorporation or organization)	(IRS Employer Identification No.)

Address of principal executive offices: 5301 Stevens Creek Blvd., Santa Clara, California 95051
Registrant's telephone number, including area code: (800) 227-9770
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, $0.01 par value	A	New York Stock Exchange

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

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

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

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

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

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

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

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

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

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

The aggregate market value of the registrant's common equity held by non-affiliates as of April 30, 2022, was approximately $26.6 billion. Shares of stock held by officers, directors and 5 percent or more stockholders have been excluded in that such persons may be deemed to be affiliates. This determination of affiliate status is not necessarily a conclusive determination for other purposes.

As of December 9, 2022 there were 296,072,040 outstanding shares of common stock, par value $0.01 per share.

DOCUMENTS INCORPORATED BY REFERENCE

Document Description	**10-K Part**
Portions of the Proxy Statement for the Annual Meeting of Stockholders (the "Proxy Statement") to be held on March 15, 2023, and to be filed pursuant to Regulation 14A within 120 days after registrant's fiscal year ended October 31, 2022 are incorporated by reference into Part III of this Report	III

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Forward-Looking Statements

This report contains forward-looking statements including, without limitation, statements regarding growth opportunities, including for revenue and our end markets, strength and drivers of the markets we sell into, sales funnels, our strategic direction, new product and service introductions and the position of our current products and services, market demand for and adoption of our products, the ability of our products and solutions to address customer needs and meet industry requirements, our focus on differentiating our product solutions, improving our customers' experience and growing our earnings, future financial results, our operating margin, mix, our investments, including in manufacturing infrastructure, research and development and expanding and improving our applications and solutions portfolios, expanding our position in developing countries and emerging markets, our focus on balanced capital allocation, our contributions to our pension and other defined benefit plans, impairment of goodwill and other intangible assets, the impact of foreign currency movements, our hedging programs and other actions to offset the effects of tariffs and foreign currency movements, our future effective tax rate, tax valuation allowance and unrecognized tax benefits, the impact of local government regulations on our ability to pay vendors or conduct operations, our ability to satisfy our liquidity requirements, including through cash generated from operations, the potential impact of adopting new accounting pronouncements, indemnification, source and supply of materials used in our products, our sales, our purchase commitments, our capital expenditures, the integration and effects of our acquisitions and other transactions, our stock repurchase program and dividends and the potential or anticipated direct or indirect impact of COVID-19 on our business that involve risks and uncertainties. Our actual results could differ materially from the results contemplated by these forward-looking statements due to various factors, including those discussed in Part I Item 1A and elsewhere in this Form 10-K.

PART I

Item 1. *Business*

Overview

Agilent Technologies Inc. ("we", "Agilent" or the "company"), incorporated in Delaware in May 1999, is a global leader in life sciences, diagnostics and applied chemical markets, providing application focused solutions that include instruments, software, services and consumables for the entire laboratory workflow.

For fiscal year ended October 31, 2022, we have three business segments comprised of the life sciences and applied markets business, the diagnostics and genomics business and the Agilent CrossLab business.

Our life sciences and applied markets business provides application-focused solutions that include instruments and software that enable customers to identify, quantify and analyze the physical and biological properties of substances and products, as well as enable customers in the clinical and life sciences research areas to interrogate samples at the molecular and cellular level. Our consumables portfolio is designed to improve customer outcomes. Our diagnostics and genomics business is comprised of six areas of activity providing active pharmaceutical ingredients ("APIs") for oligo-based therapeutics as well as solutions that include reagents, instruments, software and consumables which enable customers in the clinical and life sciences research areas to interrogate samples at the cellular and molecular level. The Agilent CrossLab business spans the entire lab with its extensive services portfolio, which is designed to improve customer outcomes. In addition, we conduct centralized order fulfillment and supply chain operations for our businesses through the order fulfillment and supply chain organization ("OFS"). OFS provides resources for manufacturing, engineering and strategic sourcing to our respective businesses. Each of our businesses, together with OFS and Agilent Technologies Research Laboratories, is supported by our global infrastructure organization, which provides shared services in the areas of finance, information technology, legal, certain procurement services, workplace services and human resources.

We sell our products primarily through direct sales, but we also utilize distributors, resellers, manufacturers' representatives and electronic commerce. As of October 31, 2022, we employed approximately 18,100 people worldwide. Our primary research and development and manufacturing sites are in California, Colorado, Delaware, Massachusetts, Texas, Vermont and Washington in the U.S. and in Australia, China, Denmark, Germany, Italy, Japan, Malaysia, Singapore and the United Kingdom.

Life Sciences and Applied Markets Business

Our life sciences and applied markets business provides application-focused solutions that include instruments and software that enable customers to identify, quantify and analyze the physical and biological properties of substances and products, as well as enable customers in the clinical and life sciences research areas to interrogate samples at the molecular and cellular level. Key product categories include: liquid chromatography ("LC") systems and components; liquid chromatography mass spectrometry ("LCMS") systems; gas chromatography ("GC") systems and components; gas chromatography mass spectrometry ("GCMS") systems; inductively coupled plasma mass spectrometry ("ICP-MS") instruments; atomic absorption ("AA") instruments; microwave plasma-atomic emission spectrometry ("MP-AES") instruments; inductively coupled plasma optical emission spectrometry ("ICP-OES") instruments; raman spectroscopy; cell analysis plate based assays; flow cytometer; real-time cell analyzer; cell imaging systems; microplate reader; laboratory software for sample tracking; information management and analytics; laboratory automation and robotic systems; dissolution testing; vacuum pumps and measurement technologies. Our consumables portfolio is designed to improve customer outcomes. Most of the portfolio is vendor neutral, meaning Agilent can serve and supply customers regardless of their instrument purchase choices. Solutions range from chemistries to supplies. Key product categories in consumables include GC and LC columns, sample preparation products, custom chemistries, and a large selection of laboratory instrument supplies.

We employed approximately 6,900 people as of October 31, 2022 in our life sciences and applied markets business.

Life Sciences and Applied Markets

Our life sciences and applied markets business focuses primarily on the following five markets:

The Pharmaceutical, Biopharmaceutical, CRO & CMO Market. This market consists of “for-profit” companies who participate across the pharmaceutical value chain in the areas of therapeutic research, discovery & development, clinical trials, manufacturing and quality assurance and quality control. One sub-segment of this market is core and emerging pharmaceutical companies ("pharma"). A second sub-segment includes biopharmaceutical companies ("biopharma"), contract research organizations ("CROs") and contract manufacturing organizations ("CMOs"). Biopharma companies and, to a somewhat lesser extent, CROs and CMOs typically participate in specific points in the pharmaceutical industry value chain. Additionally, due to the relatively low drug efficacy within oncology, pharma companies are partnering with diagnostic companies to bring validated tests to the market with their new drugs.

The Academic and Government Market. This market consists primarily of “not-for-profit” organizations and includes academic institutions, large government institutes and privately funded organizations. The academic and government market plays an influential role in technology adoption and therapeutic developments for pharmaceutical and molecular diagnostics companies. After decades of investment in basic biomedical research by government funding bodies, the focus has widened to include translational research - multidisciplinary scientific efforts directed at accelerating therapy development.

The Chemicals & Advanced Materials Market. Our products and solutions are used throughout the chemicals sector in the development, manufacturing, and quality control of commodity chemicals, specialty and agrochemicals, and fine chemicals. Chemical market customers use our products to determine chemical composition, perform impurity analysis, qualify raw materials, conduct materials characterization, and verify and ensure the environmental safety of operations and employees. Our products are used to test for safety, quality, and compliance across the value chains of advanced materials – including semiconductors, batteries, and specially engineered polymers and polymeric materials. The natural gas and petroleum exploration and refining markets use our products to analyze crude oil composition, perform intermediate material analysis, verify and improve refining processes and ensure the overall quality of gasoline, fuels, lubricants and other products.

The Environmental & Forensics Market. Our instruments, software and workflow solutions are used by the environmental market for applications such as laboratory and field analysis of chemical pollutants in air, water, soil and solid waste. Environmental industry customers include all levels of government, the industrial and manufacturing sectors, engineering and consulting companies, commercial testing laboratories and colleges and universities. Drug testing and forensics laboratories use our instruments, software and workflow solutions for applications such as analyzing evidence associated with crime, screening athletes for performance enhancing drugs, analyzing samples for recreational drugs, or detecting and identifying biological and chemical warfare agents. Some of our instruments are used in mobile laboratories as well. Customers include local, state, federal, and international law enforcement agencies and health laboratories.

The Food Market. Our instruments, software, and workflow solutions are used throughout the food production chain, including incoming inspection, new product development, quality control and assurance, and packaging. For example, our mass spectrometer portfolio is used to analyze contaminants and residual pesticides in food. There is also a significant food safety market involved in analyzing food for pathogen contamination, accurate verification of species type and evidence of genetically modified content.

Life Sciences and Applied Markets Products and Applications

Our products fall into the following main areas of work: liquid chromatography, gas chromatography, mass spectrometry, spectroscopy, software and informatics, lab automation and robotics, vacuum technology, cell analysis, remarketed instruments and chemistries and supplies.

Our key products and applications include the following technologies:

Liquid Chromatography

A liquid chromatograph ("LC") or a high-performance liquid chromatograph ("HPLC") is used to separate molecules of a liquid mixture to determine the quantity and identity of the molecules present. The Agilent LC portfolio is modular in construction and can be configured as analytical and preparative systems. These systems can be stepwise upgraded to highly sophisticated, automated workflow solutions such as method development, multi-method/walk-up, high-capacity/high-throughput or multi-dimensional LC and can be extended to application-based analyzers (e.g., for bio-molecular separations, chiral analysis or size exclusion chromatography). As a leader in liquid chromatography, we continue to expand our application space with new HPLC columns, new services and diagnostics offerings and ongoing instrument and software product enhancements.

Gas Chromatography

Agilent is the world's leading provider of gas chromatographs ("GC"), both laboratory and portable models. GCs are used to separate any gas, liquid or solid that can be vaporized and then detect the molecules present to determine their identity and quantity. Agilent provides custom or standard analyzers configured for specific chemical analysis applications, such as detailed speciation of a complex hydrocarbon stream, calculation of gas calorific values in the field, or analysis of a new bio-fuel formulation. We also offer related software, accessories and consumable products for these and other similar instruments.

Mass Spectrometry

A mass spectrometer (“MS”) identifies and quantifies compounds based on their molecular mass and characteristic patterns of fragment ion masses that result when a molecule is broken apart. MS is an important tool in analyzing small molecules and can also be used to characterize and quantify large molecules, such as proteins and other biological entities. Liquid chromatography ("LC") and gas chromatography ("GC") are commonly used to separate compounds and introduce them to the MS system. Agilent's LCMS portfolio includes instruments built around four main analyzer types - single quadrupole, triple quadrupole, time-of-flight ("TOF") and quadrupole time-of-flight ("QTOF"). Agilent's GC/MS portfolio includes instruments built around three main analyzer types - single quadrupole, triple quadrupole, and quadrupole time-of-flight ("QTOF"). We significantly expanded our mass spectrometry portfolio in recent years with a focus on improving performance, sensitivity, and ease of use.

Spectroscopy

Spectroscopy is a technique for analyzing the individual chemical components of substances based on the absorption or emission of electromagnetic radiation of specific wavelengths of light. Our spectroscopy instruments include AA spectrometers, microwave plasma-atomic emission spectrometers ("MP-AES"), ICP-OES, ICP-MS, fluorescence spectrophotometers, ultraviolet-visible ("UV-Vis") spectrophotometers, Fourier Transform infrared ("FT-IR") spectrometers, near-infrared ("NIR") spectrometers, raman spectrometers and sample automation products. We also offer related software, accessories and consumable products for these and other similar instruments.

Software and Informatics

We provide informatics and scientific software for instrument control, data acquisition, data analysis, secure storage of results, and laboratory information/workflow management. Our software facilitates the compliant use of instruments in pharmaceutical quality assurance/quality control environments. With our OpenLab Laboratory Software Suite, Agilent has a scalable, open software platform that enables customers to capture, analyze, and share scientific data throughout the lab and across the enterprise.

Laboratory Automation and Robotics

We offer a comprehensive suite of workflow solutions to our life science customers with the addition of automated liquid handling and robotics that range from standalone instrumentation to bench-top automation solutions. These solutions strengthen our offering of automated sample preparation solutions across a broad range of applications.

Vacuum Technology

Our vacuum technologies products are used to create, control, measure and test vacuum environments in life science, industrial and scientific applications where ultra-clean, high-vacuum environments are needed. Vacuum technologies' customers are typically OEMs that manufacture equipment for these applications, or government and research organizations that require vacuum solutions in their facilities. Products include a wide range of high and ultra-high vacuum pumps (diffusion, turbomolecular and ion getter), primary vacuum pumps (rotary vane and dry scroll), vacuum instrumentation (vacuum control instruments, sensor gauges and meters) and vacuum components (valves, flanges and other mechanical hardware). These products also include helium mass spectrometry and helium-sensing leak detection instruments used to identify and measure leaks in hermetic or vacuum environments. In addition to product sales, we also offer a wide range of services including an exchange and rebuild program, assistance with the design and integration of vacuum systems, applications support and training in basic and advanced vacuum technologies.

Cell Analysis

Our cell analysis tools are used to study cell signaling pathways, general cell function and behavior through metabolic profile analysis, real-time cellular impedance measurements, and traditional cytometry techniques. Characterizing cellular behavior and function is an increasingly critical step in understanding normal behavior versus diseased states, advancements of those diseases, and response to therapies, providing researchers with a more targeted approach for drug discovery and ultimately more effective therapeutics. Our cell analysis portfolio includes cell analysis plate-based assays, flow cytometer, real-time cell analyzer, microplate reader, cell imaging system and related consumables. Cell analysis customers are typically academic institutions and pharma and biopharma companies.

Chemistries and Supplies

We offer a broad range of market specific consumables and supplies to complete customers' analytical workflows from sample preparation through separation and analysis to storage, with the support of our technology platforms. This includes sample preparation consumables such as solid phase extraction ("SPE") and filtration products, self-manufactured GC and LC columns, chemical standards, and instrument replacement parts. Consumable products also include scientific instrument parts and supplies such as filters and fittings for GC systems; xenon lamps and cuvettes for UV-Vis-NIR, fluorescence, FT-IR and raman spectroscopy instruments; and graphite furnace tubes, hollow cathode lamps and specialized sample introduction glassware for our AA, ICP-OES and ICP-MS products.

Remarketed Instruments

We refurbish and resell certified pre-owned instruments to value-oriented customers who demand Agilent quality and performance at a budget conscious price.

Life Sciences and Applied Markets Customers

We had approximately 53,800 customers for our life sciences and applied markets business in fiscal 2022. A significant number of our life sciences and applied markets customers are also customers of our Agilent CrossLab business.

The life sciences and applied markets business is susceptible to seasonality in its orders and revenues primarily related to U.S. and foreign government budgets, chemicals and advanced materials and environmental customers and large

pharmaceutical company budgets. Historically, the result is that our first and fourth fiscal quarters tend to deliver the strongest profits for this group. However, general economic trends, new product introductions and competition might overshadow this trend in any given year.

Life Sciences and Applied Markets Sales, Marketing and Support

The life sciences and applied markets channels focus on the therapeutics and human disease research customer base (pharma, biopharma, CRO, CMO and generics), clinical customer base (high complexity clinical testing labs), emerging life sciences opportunities in life science research institutes and applied markets (chemicals and advanced materials, food, environmental and forensics). We deploy a multi-channel approach, marketing products to our customers through direct sales, electronic commerce, resellers, manufacturers' representatives and distributors. We primarily use direct sales to market our solutions to our pharmaceutical, biopharmaceutical, clinical, life science research and applied market accounts. Sales agents supplement direct sales by providing broader geographic coverage and coverage of smaller accounts. Our active reseller program augments our ability to provide more complete solutions to our customers. We sell our consumable products through distributors, electronic commerce and direct sales.

Our products typically come with standard warranties, and extended warranties are available for additional cost.

Life Sciences and Applied Markets Manufacturing

Our manufacturing supports our diverse product range and customer-centric focus. We assemble highly configurable products to individual customer orders and make standard products to stock. We employ advanced manufacturing techniques and supply chain management systems to reduce costs and manufacturing cycle times. Our manufacturing process then converts these designs into standard as well as custom products for shipment to customers. We selectively use third parties to provide some supply chain processes for manufacturing, warehousing and logistics. Inside the U.S., we have manufacturing facilities in California, Delaware, Massachusetts and Vermont. Outside of the U.S., we have manufacturing facilities in Germany, Malaysia and Singapore. We have FDA registered sites in California, Vermont, Germany and Singapore.

Life Sciences and Applied Markets Competition

The markets for analytical instruments in which we compete are characterized by evolving industry standards and intense competition. Our principal competitors in the life sciences and applied markets arena include: Danaher Corporation, PerkinElmer Inc., Shimadzu Corporation, Thermo Fisher Scientific Inc. and Waters Corporation. Agilent competes on the basis of product performance, reliability, support quality, applications expertise, global channel coverage and price.

Diagnostics and Genomics Business

Our diagnostics and genomics business includes the genomics, nucleic acid contract manufacturing and research and development, pathology, companion diagnostics, reagent partnership and biomolecular analysis businesses.

Our diagnostics and genomics business is comprised of six areas of activity providing active pharmaceutical ingredients ("APIs") for oligo-based therapeutics as well as solutions that include reagents, instruments, software and consumables, which enable customers in the clinical and life sciences research areas to interrogate samples at the cellular and molecular level. First, our genomics business includes arrays for DNA mutation detection, genotyping, gene copy number determination, identification of gene rearrangements, DNA methylation profiling, gene expression profiling, as well as next generation sequencing ("NGS") target enrichment and genetic data management and interpretation support software. This business also includes solutions that enable clinical labs to identify DNA variants associated with genetic disease and help direct cancer therapy. Second, our nucleic acid solutions business is a contract and development manufacturing organization that provides services related to and the production of synthesized oligonucleotides under pharmaceutical good manufacturing practices ("GMP") conditions for use as API in a class of drugs that utilize nucleic acid molecules for disease therapy. Third, our pathology solutions business is focused on product offerings for cancer diagnostics and anatomic pathology workflows. The broad portfolio of offerings includes immunohistochemistry ("IHC"), in situ hybridization ("ISH"), hematoxylin and eosin ("H&E") staining and special staining. Fourth, we also collaborate with a number of major pharmaceutical companies to develop new potential tissue and liquid-based pharmacodiagnostics, also known as companion diagnostics, which may be used to identify patients most likely to benefit from a specific targeted therapy. Fifth, the reagent partnership business provides clinical flow cytometry reagents for routine cancer diagnostics. This business also provides bulk antibodies as raw materials and associated assay development services to in vitro diagnostics ("IVD") manufacturers, biotechnology and pharmaceutical companies. Finally, our biomolecular analysis business provides complete workflow solutions, including instruments, consumables and software, for quality control analysis of nucleic acid samples. Samples are analyzed using quantitative and qualitative techniques to ensure accuracy in further genomics analysis techniques including NGS, utilized in clinical and life science research applications.

We employed approximately 3,200 people as of October 31, 2022 in our diagnostics and genomics business.

Diagnostics and Genomics Market

Within the diagnostics and genomics business, we focus primarily on the diagnostics and clinical market. Our high-quality, automated pathology tissue staining platforms and solutions are used most heavily by the large labs located in hospitals and medical centers, and reference labs. The market is skewed towards mature economies, with most of the market in North America, Western Europe and Japan. The mix is changing, however, as emerging markets increase spending on human health.

The clinical market for genomics consists of high complexity clinical labs performing patient testing, including "for-profit" reference laboratories, hospital labs, and molecular diagnostic companies. While some labs purchase IVD labeled testing kits, others often develop and validate their own molecular based tests. Analyte Specific Reagents ("ASRs") are often used by these labs.

Diagnostics and Genomics Products

Our products fall into eight main areas of work: pathology products, specific proteins and flow cytometry reagents, companion diagnostics, target enrichment, cytogenetic research solutions and microarrays, PCR and qPCR instrumentation and molecular biology reagents, nucleic acid solutions and automated electrophoresis and microfluidics.

Pathology

This area consists of routine clinical solutions for tissue-based cancer diagnostics with solutions that comprise antibodies, reagents, instruments and software targeting both primary and advanced cancer diagnostics. Our CoverStainer and Artisan based product families target primary cancer diagnostics through hematoxylin and eosin staining as well as special stains for additional insights and detection of potentially carcinogenic tissue. Dako Omnis and Autostainer based IHC solution and Instant Quality Fluorescence In Situ Hybridization ("IQFISH") technologies provide advanced tumor typing through investigation of protein and gene expression. These products also include companion diagnostic tests that are used to help identify patients most likely to benefit from a specific targeted therapy.

Specific Proteins and Flow Cytometry Reagents

In these areas, we partner with IVD manufacturers, biotechnology and pharmaceutical companies by offering antibodies as raw materials and a range of associated assay development services and solutions. We operate in several areas of clinical relevance for the customers and address multiple technologies such as turbidimetry, gel techniques and chemiluminescence immunoassays. In the area of flow cytometry reagents we provide reagents and kits directly to clinical laboratories working in routine cancer diagnostics, with particular focus on blood cancers.

Companion Diagnostics

In our companion diagnostics business, we partner with a number of major pharmaceutical companies to develop new potential pharmacodiagnostics, which may be used to identify patients most likely to benefit from a specific targeted therapy. We support pharmaceutical companies during each phase of their drug development process, from early pre-clinical through commercial launch activities. Companion diagnostics has a history of developing clinically relevant and validated tests, with accurate and effective scoring and interpretation guidelines, that enable successful regulatory approvals in our worldwide markets.

Target Enrichment

We provide a target enrichment portfolio via our SureSelect products, which enables customers to select specific target regions of the genome for sequencing. Customers can customize our products for their regions of interest using the SureDesign software, or they can choose from a range of catalog products, including gene panels for specific applications and Exome designs, which allow analysis of the entire coding sequences of the genome. SureSelect provides a sample prep workflow that can be automated with the Agilent Bravo platform for scalability or leverages the Magnis NGS sample prep ecosystem of instruments and consumables for maximum ease-of-use. These products are used for mutation detection and genotyping. Results can be easily analyzed using Agilent's Alissa software solutions. Our solutions also enable clinical labs to identify DNA variants associated with genetic diseases and help direct cancer therapy.

Cytogenetic Research Solutions and Microarrays

We provide microarrays for comparative genomic hybridization ("CGH"), mostly used by customers in cytogenetic laboratories. The arrays allow customers to detect genome-wide copy number alterations, with high levels of resolution (from entire chromosomal copy number changes to specific microdeletions or duplications). The arrays are offered in many formats allowing the customers to choose from different levels of resolution and number of samples per arrays. Arrays can also be customized using the SureDesign software. In addition to the microarrays, Agilent's solution includes reagents for sample processing, hardware for reading the microarrays, and software to help users view the data in a meaningful way. In addition to the CGH portfolio, the cytogenetics solution comprises a line of oligonucleotide probes for fluorescent in situ hybridization ("FISH") called SureFISH. Additionally, Agilent provides a wide range of microarrays to the research market for different types of applications: gene expression, microRNA, methylation, splice variants, and chromatin immunoprecipitation applications. Arrays are offered as catalog designs or customizable designs, with no minimum order size and short delivery time, which differentiates us from other vendors and enables researchers the maximum flexibility in their studies.

PCR and qPCR Instrumentation and Molecular Biology Reagents

Polymerase chain reaction ("PCR") is a standard laboratory method used to amplify the amount of genetic material of a given sample to enable further interrogation. Quantitative PCR ("qPCR") or real time PCR is also a standard method used in genomic research facilities to measure the amount of a specific nucleic acid sequence within a sample. There are several applications for qPCR; among the most common are identifying the expression level of a specific gene or calculating the amount of a specific pathogen present in a sample. Agilent offers a complete portfolio of qPCR instruments, as well as specialty enzymes for amplifying difficult sample types. In addition to qPCR enzymes, Agilent offers a wide range of molecular biology reagents including tools for cloning and mutagenesis applications.

Nucleic Acid Solutions

Our nucleic acid solutions business is a contract manufacturing and development services business with equipment and expertise focused on mid to large scale production of synthesized oligonucleotide APIs under pharmaceutical GMP conditions for a class of drugs that utilize oligonucleotide molecules for disease therapy. These drugs have advanced from single strand DNA molecules to complex, highly modified molecules including antisense, aptamers, double-stranded RNA, and RNA mixtures. These advancements in the technology have greatly improved the efficacy of delivery and stability of the oligos in-vivo. Our nucleic acid solutions business offers industry leading experience to efficiently advance our customers' oligo drug candidates from clinical trials to commercial scale volumes with a common goal of patient health and safety.

Automated Electrophoresis and Microfluidics

Automated electrophoresis is a separation technique for biomolecules such as proteins, peptides and nucleic acids (RNA and DNA) and is used to determine the identity of a molecule by either size or charge. It is widely used as a QC tool to check sample integrity prior to subsequent analysis. Prominent examples are nucleic acid preparation products in front of polymerase chain reaction, NGS and microarrays.

Diagnostics and Genomics Customers

We had approximately 11,900 customers for our diagnostics and genomics business in fiscal 2022.

Diagnostics and Genomics Sales, Marketing and Support

The diagnostics and genomics channels focus on the therapeutics and human disease research customer base (pharma, biopharma, CRO, CMO and generics), clinical customer base (pathology labs and high complexity clinical testing labs) and on emerging life sciences opportunities in life science research institutes. We deploy a multi-channel approach, marketing products to our customers through direct sales, electronic commerce, resellers, manufacturers' representatives and distributors. We primarily use direct sales to market our solutions to our pharmaceutical, biopharmaceutical and clinical accounts. Sales agents supplement direct sales by providing broader geographic coverage and coverage of smaller accounts. Our active reseller program augments our ability to provide more complete solutions to our customers. We sell our consumable products through distributors, telesales, electronic commerce and direct sales. We utilize telesales for more mature product lines, as well as for reorders of reagent products.

Diagnostics and Genomics Manufacturing

Our manufacturing supports our diverse product range and customer-centric focus. We assemble highly configurable products to individual customer orders and make standard products to stock. We employ advanced manufacturing techniques and supply chain management systems to reduce costs and manufacturing cycle times. We selectively use third parties to provide some supply chain processes for manufacturing, warehousing and logistics. In the U.S., we have manufacturing facilities in California, Colorado, Iowa, and Texas. Outside of the U.S., we have manufacturing facilities in China, Denmark, Germany and Malaysia. Our FDA registered sites include California, Colorado, Texas and Denmark.

Diagnostics and Genomics Competition

The markets for diagnostics and genomics analytical products in which we compete are characterized by evolving industry standards and intense competition. Our principal competitors in the diagnostics and genomics arena include: Abbott Laboratories, Affymetrix, Inc., a division of Thermo Fisher Scientific Inc., Illumina, Inc., Leica Biosystems, Inc., a division of Danaher Corporation, Roche Ventana Medical Systems, Inc., a member of the Roche Group, Avecia, a division of Nitto Denko and Twist Bioscience Corporation. Agilent competes on the basis of product performance, reliability, support quality, applications expertise, whole solution offering, global channel coverage and price.

Diagnostics and Genomics Government Regulation

Some of the products the diagnostics and genomics business sells are subject to regulatory approval by the FDA and other regulatory bodies throughout the world. These regulations govern a wide variety of product related activities, from quality management, design and development to labeling, manufacturing, promotion, sales and distribution. We continually invest in our manufacturing infrastructure to gain and maintain certifications necessary for the level of clearance.

Agilent CrossLab Business

The Agilent CrossLab business spans the entire lab with its extensive services portfolio, which is designed to improve customer outcomes. The majority of the portfolio is vendor neutral, meaning Agilent can serve customers regardless of their instrument purchase choices. Services include startup, operational, training and compliance support, software as a service, as well as asset management and consultative services that help increase customer productivity. Custom service bundles are tailored to meet the specific application needs of various industries and to keep instruments fully operational and compliant with the respective industry requirements.

Our Agilent CrossLab business employed approximately 5,300 people as of October 31, 2022.

Agilent CrossLab Markets

The *Pharmaceutical, Biopharmaceutical, CRO & CMO Market*. Our services support customers in this market that consists of “for-profit” companies who participate across the pharmaceutical value chain in the areas of therapeutic research, discovery and development, clinical trials, manufacturing and quality assurance and quality control. One sub-segment of this market is core and emerging pharmaceutical companies ("pharma"). A second sub-segment includes biopharmaceutical companies ("biopharma"), contract research organizations ("*CROs*") and contract manufacturing organizations ("CMOs"). Biopharma companies and, to a somewhat lesser extent, CROs and CMOs typically participate in specific points in the pharmaceutical industry value chain. Additionally, due to the relatively low drug efficacy within oncology, pharma companies are partnering with diagnostic companies to bring validated tests to the market with their new drugs.

The *Academic and Government Market.* Our services support customers in this market that consists primarily of “not-for-profit” organizations and includes academic institutions, large government institutes and privately funded organizations. The academic and government market plays an influential role in technology adoption and therapeutic developments for pharmaceutical and molecular diagnostics companies. After decades of investment in basic biomedical research by government funding bodies, the focus has widened to include translational research - multidisciplinary scientific efforts directed at accelerating therapy development.

The *Chemicals & Advanced Materials Market*. Our services, software and technical support are used throughout the chemicals sector in the development, manufacturing, and quality control of commodity chemicals, specialty and agrochemicals, and fine chemicals. Chemical market customers use our services, software and technical support to maintain, optimize, and enable higher productivity and profitability for labs, and support quality control and compliance with environmental and safety regulations. Additionally, our services, software and technical support are used to support the testing for safety, quality, and

compliance across the value chains of advanced materials – including semiconductors, batteries, and specially engineered polymers and polymeric materials. The natural gas and petroleum exploration and refining markets use our services, software and technical support to support quality control, environmental safety reviews, analysis of crude oil composition, and improve their refining processes and quality of products.

The *Environmental & Forensics Market*. Our services support the environmental industry customers that perform laboratory and field analysis of chemical pollutants in air, water, soil and solid waste. Environmental industry customers include all levels of government, the industrial and manufacturing sectors, engineering and consulting companies, commercial testing laboratories and colleges and universities. Our services also support drug testing and forensics laboratories that are involved with analyzing evidence associated with crime, screening athletes for performance enhancing drugs, analyzing samples for recreational drugs, or detecting and identifying biological and chemical warfare agents. Customers include local, state, federal, and international law enforcement agencies and commercial testing laboratories.

The *Food Market.* Our services support the food production chain, including incoming inspection, new product development, quality control and assurance, and packaging. Our services also support the food safety market in their work to analyze food for concerns ranging from pathogen contamination, genetic modification, species verification and others.

The *Diagnostics and Clinical Market.* Our services support clinical diagnostic customers in pathology labs throughout the world.

Agilent CrossLab Services and Applications

Services and Support

We offer a wide range of startup, operational, educational and compliance support services for our measurement and data handling systems. Our support services include maintenance, troubleshooting, repair and training for all of our chemical and bioanalytical instrumentation hardware and software products. With advances in digital and virtual support technologies, many of those services can be offered remotely. Special service bundles have also been designed to meet the specific application needs of various industries. As customers continue to outsource laboratory operations and consolidate suppliers, our enterprise services consist of a broad portfolio of integrated laboratory management services including instrument services, lab supply management, asset management, procurement, informatics and scientific services. Advancements in our offering software and service solutions will help our customers operate a more digitally connected smart lab that can derive more value out of data analytics, artificial intelligence and robotics.

Agilent CrossLab Customers

We had approximately 49,200 Agilent CrossLab customers in fiscal 2022. A significant number of our Agilent CrossLab customers are also customers of our life sciences and applied markets business.

The service business is mostly recurring in nature and is less susceptible to market seasonality and industry cycles in comparison to our instrument businesses. The vendor neutral portion of the portfolio allows the business to perform relatively independent from our instrument business.

Agilent CrossLab Sales, Marketing and Support

We deploy a multi-channel approach, marketing services to our customers through direct sales, electronic commerce, resellers, manufacturers' representatives and distributors. We primarily use direct sales to market our solutions to our large accounts. Sales agents supplement direct sales by providing broader geographic coverage and coverage of smaller accounts. Our active reseller program augments our ability to provide more complete solutions to our customers. Some of our service contract sales are processed by our digital commerce infrastructure. All channels are supported by technical product and application specialists to meet our customers' specific requirements.

We deliver our support services to customers in a variety of ways, including on-site assistance with repair or exchange of returned products, as well as a growing number of remote service delivery options. In addition to the traditional telephone support and on-site service, our teams remotely engage customers through various digital tools and omni-channel platforms. We also offer special industry-focused service bundles that are designed to meet the specific needs of pharmaceutical and

biopharmaceutical, advanced materials, environmental and hydrocarbon processing customers to keep instruments fully operational and compliant with the respective industry requirements. Our products typically come with standard warranties, and extended warranties are available for additional cost.

Agilent CrossLab Manufacturing

Our direct service delivery organization is regionally based and operating in 29 countries.

Agilent CrossLab Competition

Our principal competitors in the services arena include many of our competitors from the instrument business such as: Danaher Corporation, PerkinElmer Inc., Shimadzu Corporation, Thermo Fisher Scientific Inc. and Waters Corporation, as well as numerous niche service providers. Agilent competes on the basis of reliability, support quality, applications expertise, global channel coverage and price.

Agilent Technologies Research Laboratories

Agilent Technologies Research Laboratories ("Agilent Labs") is our central research organization based in Santa Clara, California. The Research Labs create competitive advantage through high-impact technology, driving market leadership and growth in Agilent's core businesses and expanding Agilent's footprint into adjacent markets. At the cross-roads of the organization, the Research Labs are able to identify and enable synergies across Agilent's businesses to create competitive differentiation and compelling customer value.

The technical staff have advanced degrees that cover a wide range of scientific and engineering fields, including molecular and cell biology, chemistry, physics, pathology, mathematics, software and informatics, artificial intelligence, deep and machine learning, image processing, nano/microfabrication, and fluidics.

Global Infrastructure Organization

We provide support to our businesses through our global infrastructure organization. This support includes services in the areas of finance, tax, treasury, legal, real estate, insurance services, workplace services, human resources, information technology services, order administration and other corporate infrastructure expenses. Generally, these organizations are managed from Santa Clara, California, with operations and services provided worldwide. As of October 31, 2022, our global infrastructure organization employed approximately 2,700 people worldwide.

Agilent Order Fulfillment Organizations

Our order fulfillment and supply chain organization (“OFS”) focuses on order fulfillment and supply chain operations in our businesses. OFS provides resources for manufacturing, engineering and strategic sourcing to our respective businesses. In general, OFS employees are dedicated to specific businesses and the associated costs are directly allocated to those businesses.

The following discussions of Research and Development, Backlog, Intellectual Property, Materials, Environmental, Regulatory Affairs and Human Capital Management include information common to each of our businesses.

Research and Development

We anticipate that we will continue to have significant research and development expenditures in order to maintain our competitive position with a continuing flow of innovative, high-quality products and services. Our research and development efforts focus on potential new products and product improvements covering a wide variety of technologies, none of which is individually significant to our operations. Our research seeks to improve on various technical competencies in software, systems and solutions, life sciences and diagnostics. In each of these research fields, we conduct research that is focused on specific product development for release in the short-term as well as other research that is intended to be the foundation for future products over a longer time-horizon. Most of our product development research is designed to improve products already in production, focus on major new product releases, and develop new product segments for the future. We remain committed to invest significantly in research and development and have focused our development efforts on key strategic opportunities to align our business with available markets and position ourselves to capture market share.

Backlog

We believe that backlog is not a meaningful indicator of future business prospects for our business segments since a significant portion of our revenue for a given quarter is derived from the current quarter's orders. Therefore, we believe that backlog information is not material to an understanding of our business.

Intellectual Property

We generate patent and other intellectual property rights covering significant inventions and other innovations in order to create a competitive advantage. While we believe that our licenses, patents and other intellectual property rights have value, in general no single license, patent or other intellectual property right is in itself material. In addition, our intellectual property rights may be challenged, invalidated or circumvented or may otherwise not provide significant competitive advantage.

Materials

Our life sciences and applied markets, diagnostics and genomics and Agilent CrossLab businesses all purchase materials from thousands of suppliers on a global basis. Some of the parts that require custom design work are not readily available from alternate suppliers due to their unique design or the length of time necessary for design work. Our long-term relationships with suppliers allow us to proactively manage technology road maps and product discontinuance plans and monitor their financial health. To address any potential disruption in our supply chain, we use a number of techniques, including qualifying multiple sources of supply and redesign of products for alternative components. In addition, while we generally attempt to keep our inventory at minimal levels, we do purchase incremental inventory as circumstances warrant to protect the supply chain.

Environmental

Our research and development, manufacturing and distribution operations involve the use of hazardous substances and are regulated under international, federal, state and local laws governing health and safety and the environment. We apply strict standards for protection of the environment and occupational health and safety to sites inside and outside the U.S., even if not subject to regulation imposed by foreign governments. We believe that our properties and operations at our facilities comply in all material respects with applicable environmental laws and occupational health and safety laws. We are also regulated under a number of international, federal, state, and local laws regarding recycling, product packaging and product content requirements. We believe we are substantially in compliance with such environmental, product content/disposal and recycling laws. We also maintain a comprehensive Environmental Site Liability insurance policy which may cover certain clean-up costs or legal claims related to environmental contamination. This policy covers specified active, inactive and divested locations.

Climate change may impact our business by increasing operating costs due to impairments of our facilities and distribution systems, disruptions to our manufacturing processes and additional regulatory requirements. Although we address these potential risks in our business continuity planning, such events could make it difficult for us to deliver products and services to our customers and cause us to incur substantial expense.

In addition to monitoring and managing compliance with environmental regulations, we are also committed to sustainability and environmental protection. In 2021, we announced our commitment to achieve net-zero greenhouse gas emissions no later than 2050. For more information on our approach to sustainability management, refer to our 2021 ESG report, which is available on our website.

Regulatory Affairs

A number of our products and services are subject to regulation by the FDA, the U.S. Department of Health and Human Services, the Centers for Medicare and Medicaid Services and certain similar foreign regulatory agencies. These regulations govern a wide variety of product and service related activities, from quality management, design and development to labeling, manufacturing, promotion, sales and distribution. If we fail to comply with FDA and other applicable regulatory requirements or are perceived to potentially have failed to comply, we may face, among other things, warning letters; adverse publicity; investigations or notices of non-compliance, fines, injunctions, and civil or criminal penalties; import or export restrictions; partial suspensions or total shutdown of production facilities or the imposition of operating restrictions; suspension or revocation of our license to operate; increased difficulty in obtaining required FDA clearances or approvals or foreign equivalents; seizures or recalls of our products or those of our customers; or the inability to sell our products. In Europe, the European Union has started to enforce new requirements, known as the EU In Vitro Diagnostic Regulation (“EU IVDR”), which imposes stricter requirements for the marketing and sale of in vitro diagnostics in the European Union. These new

regulations are more stringent in a variety of areas, including clinical requirements, quality systems and post-market surveillance activities. The new EU IVDR requirements became effective starting in May 2022.

We are subject to laws and regulations governing government contracts, and failure to address these laws and regulations or comply with government contracts could harm our business by leading to a reduction in revenue associated with these customers. We have agreements relating to the sale of our products to government entities and, as a result, we are subject to various statutes and regulations that apply to companies doing business with the government. We are also subject to investigation for compliance with the regulations governing government contracts. A failure to comply with these regulations could result in suspension of these contracts, criminal, civil and administrative penalties or debarment.

We are also subject to various significant international, federal, state and local regulations in the areas of health and safety, packaging, product content, employment, labor and immigration, import/export controls, trade restrictions and anti-competition. Violations of these laws and regulations could result in fines and penalties, criminal sanctions, restrictions on our business conduct and on our ability to offer our products in one or more countries, and could also materially affect our brand, our ability to attract and retain employees, our international operations, our business and our operating results.

In addition, as a global organization, we are subject to data privacy and security laws, regulations, and customer-imposed controls in numerous jurisdictions as a result of having access to and processing confidential, personal, sensitive and/or patient health data in the course of our business. Global privacy laws, including the EU's General Data Protection Regulation ("GDPR"), Brazil's *Lei Geral de Protecao de Dados*, China's Personal Information Protection Law and Data Security Law, and the California Consumer Privacy Act, apply to our activities involving the processing of personal data, both in relation to our product and service offerings and the management of our workforce. The global proliferation of privacy laws, with governmental authorities around the world passing or considering passing legislative and regulatory proposals concerning privacy and data protection, continues to result in new requirements regarding the handling of personal data, with many such laws imposing significant penalties for non-compliance (including possible fines of up to four percent of total company revenue under the GDPR). Each of these privacy, security and data protection laws and regulations could impose significant limitations and increase our cost of providing our products and services where we process end user personal data and could harm our results of operations and expose us to significant fines, penalties and other damages.

While we believe we are in compliance in all material respects with such laws and regulations, any noncompliance could result in substantial fines or otherwise restrict our ability to operate and thereby have an adverse effect on our financial condition. To date, none has had a material impact on our operations.

Human Capital Management

As of October 31, 2022, we employed approximately 18,100 persons, of whom approximately 7,000 were based in the Americas, 4,400 in Europe and 6,700 in Asia Pacific. We also leverage temporary workers to provide flexibility for our business and manufacturing needs.

Culture. Agilent instruments, software, services, solutions and people provide trusted answers to customers' most challenging questions. Whether we are working with our customers to keep food supplies safe, improve the quality of air, water and soil, or fight cancer with more precise diagnoses and targeted treatments, Agilent employees share a passion and commitment to advancing the quality of life. We believe that our future success largely depends upon our continued ability to attract and retain highly skilled employees in order to fulfil that commitment.

Engagement. Agilent engages with our employees through consultation, surveys, ad-hoc feedback and reviews. Our executive officers hold all-managers meetings on a quarterly basis to provide business updates and answer questions. We conduct an annual leadership survey that allows employees to provide feedback on leadership effectiveness, culture and job satisfaction. We have an open-door policy where employees are encouraged and empowered to bring issues to management's attention. Employees have regular performance reviews with immediate supervisors. Employee sessions are held regularly to share business and market updates and answer employee questions.

Diversity and Inclusion. As a global company, much of our success is rooted in the diversity of our teams and our commitment to inclusion. We value diversity at all levels and continue to focus on extending our diversity and inclusion initiatives across our entire workforce, from providing managers transparency of their workforce pay equity to working with managers to develop strategies for building diverse teams to promoting the advancement of leaders from different backgrounds. Agilent is committed to creating a diverse work environment and is proud to be an equal opportunity employer. We believe in an inclusive workforce, where employees from a number of cultures and countries are engaged and encouraged to leverage their collective talents. As of October 31, 2022, approximately 38 percent of our full-time employees were female. Approximately 42

percent of our board is comprised of directors representing underrepresented groups as of the date of this report. We have launched a number of company-wide initiatives including employee-network groups aimed at promoting engagement of traditionally underrepresented groups of employees.

Retention. We provide our employees with competitive salaries and bonuses, opportunities for equity ownership, development programs that enable continued learning and growth and a robust employment package that promotes well-being across all aspects of their lives, including health care, retirement planning and paid time off. Our benefits are offered to eligible employees and comply with local legal requirements. We have a number of programs and policies designed to help employees in our diverse workforce manage their work and personal lives while meeting company objectives for business success, including flexible work arrangements, health and welfare benefits, employee and family assistance plans and parental leave.

Development. As part of our promotion and retention efforts, we also invest in ongoing leadership development for current and rising managers. Training at Agilent takes several forms: face-to-face classroom experiences, on-the-job learning, virtual classroom events and self-paced e-learning. We are committed to providing an environment in which employees can expand their knowledge, develop new skills, and contribute their best work. Our culture of continuous development instills in our employees the behaviors that bring our values to life every day. We encourage our people to stay up-to-date on current research and technology while enhancing their current skills and growing new skills to meet future needs; we also put special emphasis on training managers at all levels to effectively communicate, role model and reinforce our values and culture.

Health and Safety. The health and safety of our employees is a top priority for us. Our environmental, health and safety management system provides a framework for assessing and managing risks relating to health and safety. We regularly evaluate and review with senior management the performance of our programs and processes. In response to the COVID-19 pandemic, we took proactive actions to protect the health and safety of our employees, customers, partners and suppliers. In the U.S., we enacted safety measures, including social distancing protocols, encouraging employees to work from home when possible, suspending non-essential work travel, implementing various access controls at our facilities, frequently disinfecting our workspaces and providing appropriate personal protective equipment to employees who are physically present at our facilities. As COVID-19 conditions improved, we implemented a phased reopening process and continued to prioritize health and safety. We expect to continue to implement appropriate safety measures as necessary, and we may take further actions as government authorities require or recommend or as we determine to be in the best interests of our employees, customers, partners and suppliers.

Community. Each year Agilent employees throughout the world devote thousands of volunteer hours to community service activities. Our employees may take up to six days of paid time off each year for volunteer activities with charities and organizations. We also support a giving program, which provides employees the opportunity to support a broad range of eligible non-profit organizations in their communities in the areas of health and human services, arts and culture, education and literacy, environment and conservation, and family and civic betterment.

Information about our Executive Officers

The names of our current executive officers and their ages, titles and biographies appear below:

Henrik Ancher-Jensen, 57, has served as our Senior Vice President, Agilent and President, Order Fulfillment since September 2013. From September 2012 to September 2013, Mr. Ancher-Jensen served as our Vice President, Global Product Supply, Diagnostics and Genomics Group. From September 2010 to September 2012 he served as Corporate Vice President, Global Operations of Dako A/S, a Danish diagnostics company, and as Dako's Vice President, Supply Chain and Chief Information Officer from 2006 to September 2010. Prior to joining Dako, he spent more than 15 years in senior management roles and management consulting with Chr. Hansen, Deloitte Consulting and NVE.

Rodney Gonsalves, 57, has served as our Vice President, Corporate Controllership and Chief Accounting Officer since May 2015. From September 2009 to May 2015, Mr. Gonsalves served as Vice President and operational CFO for various business groups within the company, most recently for the Life Sciences and Applied Markets Group. Prior to that, Mr. Gonsalves served in various capacities for Agilent, including as vice president of Investor Relations, controller, corporate governance and customer financing in Agilent's Global Infrastructure Organization, and controller for the Photonics Systems Business Unit. Before joining Agilent, Mr. Gonsalves held a variety of positions in finance with Hewlett-Packard Company.

Dominique P. Grau, 63, has served as our Senior Vice President, Human Resources and Global Communications since November 2018. From August 2014 to October 2018 he served as Senior Vice President, Human Resources. From May 2012 to August 2014 Mr. Grau served as Vice President, Worldwide Human Resources. Prior to that, he served as Vice President, Compensation, Benefits and HR Services from May 2006 to May 2012. Mr. Grau had previously served in various capacities for Agilent and Hewlett-Packard Company.

Padraig McDonnell, 51, has served as our Chief Commercial Officer and President, Agilent CrossLab Group since November 2021. From May 2020 to November 2021, he served as Senior Vice President, Agilent and President, Agilent CrossLab Group. From November 2016 to April 2020, he served as our Vice President and General Manager of the Chemistries and Supplies Division. Prior to that, he served as our Vice President and General Manager of EMEAI Laboratory Solutions Sales. Mr. McDonnell has previously held a variety of positions with Agilent and Hewlett-Packard Company.

Robert W. McMahon, 54, has served as our Senior Vice President, Agilent since August 2018 and as our Chief Financial Officer since September 2018. He previously served as the Chief Financial Officer of Hologic, Inc., a medical technology company from May 2014 to August 2018. Prior to Hologic, Mr. McMahon spent 20 years with Johnson & Johnson most recently as Worldwide Vice President of Finance and Business Development for Ortho Clinical Diagnostics a division of Johnson & Johnson's Medical Device and Diagnostics Group.

Michael R. McMullen, 61, has served as Chief Executive Officer since March 2015 and as President since September 2014. From September 2014 to March 2015 he also served as Chief Operating Officer. From September 2009 to September 2014, he served as Senior Vice President, Agilent and President, Chemical Analysis Group. Prior to that, he served in various capacities for Agilent, including as our Vice President and General Manager of the Chemical Analysis Solutions Unit of the Life Sciences and Chemical Analysis Group and Country Manager for Agilent's China, Japan and Korea Life Sciences and Chemical Analysis Group. Prior to that, Mr. McMullen served as Controller for the Hewlett-Packard Company and Yokogawa Electric Joint Venture from July 1996 to March 1999. Since September 2018, Mr. McMullen has served as a member of the Board of Directors of Coherent, Inc.

Samraat S. Raha, 50, has served as our Senior Vice President, Agilent and President, Diagnostics and Genomics Group since April 2018. From May 2017 to April 2018, Mr. Raha served as our Senior Vice President, Strategy and Corporate Development. From June 2013 to January 2017 he served as Vice President, Global Marketing for Illumina, Inc. and from 2008 to 2012 he served as Vice President and General Manager, Genomic Assays / NextGen qPCR for Life Technologies, Inc.

Michael Tang, 48, has served as our Senior Vice President, General Counsel and Secretary since January 2016. From May 2015 to January 2016 he served as Vice President, Assistant General Counsel and Secretary and from November 2013 to April 2015 he served as Vice President, Assistant General Counsel and Assistant Secretary. From March 2012 to October 2013 he served as Business Development Manager in Agilent’s Corporate Development group. Prior to that, Mr. Tang served in various capacities in Agilent's legal department. Before joining Agilent, Mr. Tang worked at Wilson Sonsini Goodrich & Rosati, a California law firm and Fenwick & West LLP, a California law firm.

Jacob Thaysen, 47, has served as our Senior Vice President, Agilent and President, Life Sciences and Applied Markets Group, since April 2018. From November 2014 to April 2018 he served as Senior Vice President, Agilent and President, Diagnostics and Genomics Group. From October 2013 to November 2014 he served as Vice President and General Manager of the Diagnostics and Genomics business. Prior to that he served as Vice President and General Manager of the Genomics Solutions unit from January 2013 to October 2013. Before joining Agilent, he served in various capacities at Dako A/S, a Danish diagnostics company, including as Corporate Vice President of R&D, Vice President, System Development, R&D, Vice President, Strategic Marketing and Vice President, Global Sales Operations. Prior to Dako, Mr. Thaysen worked as a management consultant and Chief Technical Officer and founder of a high-tech start-up company.

Investor Information

We are subject to the informational requirements of the Securities Exchange Act of 1934 (“Exchange Act”). Therefore, we file periodic reports, proxy statements and other information with the Securities and Exchange Commission (“SEC”). The SEC maintains an Internet site (https://www.sec.gov) that contains reports, proxy and information statements and other information regarding issuers that file electronically.

Our financial and other information can be accessed at our Investor Relations website. The address is www.investor.agilent.com. We make available, free of charge, copies of our annual report on Form 10-K, quarterly reports on Form 10-Q, current reports on Form 8-K and amendments to those reports filed or furnished pursuant to Section 13(a) or 15(d)

of the Exchange Act as soon as reasonably practicable after filing such material electronically or otherwise furnishing it to the SEC.

Our Amended and Restated Bylaws, Corporate Governance Standards, the charters of our Audit and Finance Committee, our Compensation Committee, our Executive Committee and our Nominating/Corporate Governance Committee, as well as our Standards of Business Conduct (including code of ethics provisions that apply to our principal executive officer, principal financial officer, principal accounting officer and senior financial officers) are available on our website at www.investor.agilent.com under "Corporate Governance". These items are also available in print to any stockholder in the United States and Canada who requests them by calling (877) 942-4200. This information is also available by writing to the company at the address on the cover of this Annual Report on Form 10-K.

Item 1A. Risk Factors

Business and Strategic Risks

The COVID-19 pandemic has adversely impacted, and continues to pose risks to, certain elements of our business, results of operations and financial condition, the nature and extent of which are highly uncertain and unpredictable.

Our global operations expose us to risks associated with public health crises, including epidemics and pandemics such as COVID-19. The global spread of COVID-19 had, and may continue to have, an adverse impact on our operations, sales and delivery and supply chains. Many countries including the United States implemented measures such as quarantine, shelter-in-place, curfew, travel and activity restrictions and similar isolation measures, including government orders and other restrictions on the conduct of business operations. Due to these measures we experienced significant and unpredictable reductions or increases in demand for certain of our products. Moreover, these measures caused delays in installations and significantly impacted our ability to service our customers on site. For example, in the second quarter of fiscal year 2022, the outbreak of COVID-19 in China led to a mandated shutdown of our facilities in Shanghai, which negatively impacted our business and results, and impacted our supply chain. The COVID-19 pandemic also impacted our supply chain as we experienced disruptions or delays in shipments of certain materials or components of our products. While many of our customers have returned to work and economic activity has ramped up, we are unable to accurately predict the full extent and duration of the impact of the COVID-19 pandemic on our business and operations due to numerous uncertainties, including the duration and severity of the pandemic, the efficacy and distribution of vaccines, containment measures and additional waves of infection. As COVID-19 conditions improved, there have been increases in demand for certain of our products, which posed challenges to our supply chain. If there are supply shortages or delays and we are not able to meet increasing product demand, our results would be adversely affected.

Additionally, the COVID-19 pandemic caused significant volatility in U.S. and international markets. The impact of the pandemic may increase the possibility of uncertainty in the global financial markets, high inflation and extended economic downturn, which could reduce our ability to incur debt or access capital and impact our results and financial condition even after local conditions improve. There are no assurances that the credit markets or the capital markets will be available to us in the future or that the lenders participating in our credit facilities will be able to provide financing in accordance with their contractual obligations.

As COVID-19 conditions have improved, the duration and sustainability of any such improvements will be uncertain and continuing adverse impacts and/or the degree of improvement may vary dramatically by geography and by business. The actions we take in response to any improvements in conditions may also vary widely by geography and by business and will likely be made with incomplete information; pose the risk that such actions may prove to be premature, incorrect or insufficient; and could have a material, adverse impact on our business and results of operations.

General economic conditions may adversely affect our operating results and financial condition.

Our business is sensitive to negative changes in general economic conditions, both inside and outside the United States. Slower global economic growth, inflationary pressures, instability and uncertainty in the markets in which we operate may adversely impact our business resulting in:

- reduced demand for our products, delays in the shipment of orders, or increases in order cancellations;
- increased risk of excess and obsolete inventories;
- increased price pressure for our products and services; and
- greater risk of impairment to the value, and a detriment to the liquidity, of our investment portfolio.

Our operating results and financial condition could be harmed if the markets into which we sell our products decline or do not grow as anticipated.

Visibility into our markets is limited. Our quarterly sales and operating results are highly dependent on the volume and timing of orders received during the fiscal quarter, which are difficult to forecast and may be cancelled by our customers. In addition, our revenue and earnings forecasts for future fiscal quarters are often based on the expected seasonality of our markets. However, the markets we serve do not always experience the seasonality that we expect as customer spending policies and budget allocations, particularly for capital items, may change. Any decline in our customers' markets or in general economic conditions would likely result in a reduction in demand for our products and services. Also, if our customers' markets decline, we may not be able to collect on outstanding amounts due to us. Such declines could harm our consolidated financial position, results of operations, cash flows and stock price, and could limit our profitability. Also, in such an environment, pricing pressures could intensify. Since a significant portion of our operating expenses is relatively fixed in nature due to sales, research and development and manufacturing costs, if we were unable to respond quickly enough, these pricing pressures could further reduce our operating margins.

If we do not introduce successful new products and services in a timely manner to address increased competition through frequent new product and service introductions, rapid technological changes and changing industry standards, our products and services may become obsolete, and our operating results may suffer.

We generally sell our products in industries that are characterized by increased competition through frequent new product and service introductions, rapid technological changes and changing industry standards. Without the timely introduction of new products, services and enhancements, our products and services may become technologically obsolete over time, in which case our revenue and operating results could suffer. The success of our new products and services will depend on several factors, including our ability to:

- properly identify customer needs and predict future needs;
- innovate and develop new technologies, services and applications;
- appropriately allocate our research and development spending to products and services with higher growth prospects;
- successfully commercialize new technologies in a timely manner;
- manufacture and deliver new products in sufficient volumes and on time;
- differentiate our offerings from our competitors' offerings;
- price our products competitively;
- anticipate our competitors' development of new products, services or technological innovations; and
- control product quality in our manufacturing process.

In addition, if we fail to accurately predict future customer needs and preferences or fail to produce viable technologies, we may invest in research and development of products and services that do not lead to significant revenue, which would adversely affect our profitability. Even if we successfully innovate and develop new and enhanced products and services, we may incur substantial costs in doing so, and our operating results may suffer. In addition, promising new products may fail to reach the market or realize only limited commercial success because of real or perceived concerns of our customers. Furthermore, as we collaborate with pharmaceutical customers to develop drugs such as companion diagnostics assays or provide drug components like active pharmaceutical ingredients, we face risks that those drug programs may be cancelled upon clinical trial failures.

Failure to adjust our purchases due to changing market conditions or failure to accurately estimate our customers' demand could adversely affect our income.

Our income could be harmed if we are unable to adjust our purchases to reflect market fluctuations, including those caused by the seasonal nature of the markets in which we operate. The sales of our products and services are dependent, to a large degree, on customers whose industries are subject to seasonal trends in the demand for their products. During a market upturn, we may not be able to purchase sufficient supplies or components to meet increasing product demand, which could materially affect our results. In the past, we have experienced a shortage of parts for some of our products. In addition, some of the parts that require custom design are not readily available from alternate suppliers due to their unique design or the length of time necessary for design work. Should a supplier cease manufacturing such a component, we would be forced to reengineer our product. In addition to discontinuing parts, suppliers may also extend lead times, limit supplies or increase prices due to capacity constraints or other factors. In order to secure components for the production of products, we may continue to enter into non-cancelable purchase commitments with vendors, or at times make advance payments to suppliers, which could impact our ability to adjust our inventory to declining market demands. If demand for our products is less than we expect, we may experience additional excess and obsolete inventories and be forced to incur additional expenses.

Demand for some of our products and services depends on the capital spending policies of our customers, research and development budgets and on government funding policies.

Our customers include pharmaceutical companies, laboratories, universities, healthcare providers, government agencies and public and private research institutions. Many factors, including public policy spending priorities, available resources, mergers and consolidations, institutional and governmental budgetary policies and spending priorities, and product and economic cycles, have a significant effect on the capital spending policies of these entities. Fluctuations in the research and development budgets at these organizations could have a significant effect on the demand for our products and services. Research and development budgets fluctuate due to changes in available resources, consolidation, spending priorities, general economic conditions and institutional and governmental budgetary policies. The timing and amount of revenue from customers that rely on government funding or research may vary significantly due to factors that can be difficult to forecast, including changes in spending authorizations and budgetary priorities for our products and services. If demand for our products and services is adversely affected, our revenue and operating results would suffer.

Our business will suffer if we are not able to retain and hire key personnel.

Our future success depends partly on the continued service of our key research, engineering, sales, marketing, manufacturing, executive and administrative personnel. If we fail to retain and hire a sufficient number of these personnel, we will not be able to maintain or expand our business. The markets in which we operate are very dynamic, and our businesses continue to respond with reorganizations, workforce reductions and site closures. We believe our pay levels are very competitive within the regions that we operate. However, there is intense competition for certain highly technical specialties in geographic areas where we continue to recruit, and it may become more difficult to hire and retain our key employees.

Economic, political, foreign currency and other risks associated with international sales and operations could adversely affect our results of operations.

Because we sell our products worldwide, our business is subject to risks associated with doing business internationally. We anticipate that revenue from international operations will continue to represent a majority of our total revenue. International revenue and costs are subject to the risk that fluctuations in foreign currency exchange rates could adversely affect our financial results when translated into U.S. dollars for financial reporting purposes. Foreign currency movements for the year ended October 31, 2022, had an overall unfavorable impact on revenue of approximately 4 percentage points when compared to the same period last year. When movements in foreign currency exchange rates have a negative impact on revenue, they will also have a positive impact by reducing our costs and expenses. In addition, many of our employees, contract manufacturers, suppliers, job functions, outsourcing activities and manufacturing facilities are located outside the United States. Accordingly, our future results could be harmed by a variety of factors, including:

- interruption to transportation flows for delivery of parts to us and finished goods to our customers;
- ongoing instability or changes in a specific country's or region's political, economic or other conditions, including inflation, recession, interest rate fluctuations and actual or anticipated military or political conflicts, including uncertainties and instability in economic and market conditions caused by the COVID-19 pandemic, the Ukraine/Russia conflict and political and trade uncertainties in the greater China region;
- changes in diplomatic and trade relationships, as well as, new tariffs, trade protection measures, import or export licensing requirements, new or different customs duties, trade embargoes and sanctions and other trade

barriers;

- tariffs imposed by the U.S. on goods from other countries and tariffs imposed by other countries on U.S. goods, including the tariffs enacted by the U.S. government on various imports from China and by the Chinese government on certain U.S. goods;
- negative consequences from changes in or differing interpretations of laws and regulations, including those related to tax and import/export;
- difficulty in staffing and managing widespread operations;
- differing labor regulations;
- differing protection of intellectual property;
- unexpected changes in regulatory requirements;
- geopolitical uncertainty or turmoil, terrorism and war; and
- impact of public health crises, including pandemics and epidemics, such as COVID-19 on the global economy.

We sell our products into many countries and we also source many components and materials for our products from and manufacture our products in various countries. Future tariffs and tariffs already implemented could have negative impact on our business, results of operations and financial condition. It may be time-consuming and expensive for us to alter our business operations in order to adapt to any such change. Further, additional tariffs, the scope and duration of which, if implemented, remains uncertain, which have been proposed or threatened and the potential escalation of a trade war and retaliatory measures could have a material adverse effect on our business, results of operations and financial condition.

Most of our accounting and tax processes including general accounting, cost accounting, accounts payable, accounts receivable and tax functions are centralized at locations in India and Malaysia. If economical, political, health or other conditions change in those countries, it may adversely affect operations, including impairing our ability to pay our suppliers and collect our receivables. Our results of operations, as well as our liquidity, may be adversely affected and possible delays may occur in reporting financial results.

In addition, although the majority of our products are priced and paid for in U.S. dollars, a significant amount of certain types of expenses, such as payroll, utilities, tax, and marketing expenses, are paid in local currencies. Our hedging programs reduce, but do not always entirely eliminate, within any given twelve-month period, the impact of currency exchange rate movements, and therefore fluctuations in exchange rates, including those caused by currency controls, could impact our business, operating results and financial condition by resulting in lower revenue or increased expenses. For expenses beyond that twelve-month period, our hedging strategy does not mitigate our exposure. In addition, our currency hedging programs involve third-party financial institutions as counterparties. The weakening or failure of financial institution counterparties may adversely affect our hedging programs and our financial condition through, among other things, a reduction in available counterparties, increasingly unfavorable terms, and the failure of the counterparties to perform under hedging contracts.

Our strategic initiatives to adjust our cost structure could have long-term adverse effects on our business, and we may not realize the operational or financial benefits from such actions.

We have implemented multiple strategic initiatives across our businesses to adjust our cost structure, and we may engage in similar activities in the future. These strategic initiatives and our regular ongoing cost reduction activities may distract management, could slow improvements in our products and services and limit our ability to increase production quickly if demand for our products increases. In addition, delays in implementing our strategic initiatives, unexpected costs or failure to meet targeted improvements may diminish the operational and financial benefits we realize from such actions. Any of the above circumstances could have an adverse effect on our business and operating results and financial condition.

Our acquisitions, strategic investments and alliances, joint ventures, exiting of businesses and divestitures may result in financial results that are different than expected.

In the normal course of business, we frequently engage in discussions with third parties relating to possible acquisitions, strategic investments and alliances, joint ventures and divestitures, and generally expect to complete several transactions per year. In addition, we may decide to exit a particular business within our product portfolio. As a result of such transactions, our financial results may differ from our own or the investment community's expectations in a given fiscal quarter or over the long term. We may have difficulty developing, manufacturing and marketing the products of a newly acquired company in a way that enhances the performance of our combined businesses or product lines. Acquired businesses may also expose us to new risks and new markets, and we may have difficulty addressing these risks in a cost effective and timely manner. Transactions such as acquisitions have resulted, and may in the future result in, unexpected significant costs and expenses. In the future, we may be required to record charges to earnings during the period if we determine there is an impairment of goodwill or intangible assets, up to the full amount of the value of the assets, or, in the case of strategic investments and alliances,

consolidate results, including losses, of third parties or write down investment values or loans and convertible notes related to the strategic investment.

Integrating the operations of acquired businesses within Agilent could be a difficult, costly and time-consuming process that involves a number of risks. Acquisitions and strategic investments and alliances may require us to integrate and collaborate with a different company culture, management team, business model, business infrastructure and sales and distribution methodology and assimilate and retain geographically dispersed, decentralized operations and personnel. Depending on the size and complexity of an acquisition, our successful integration of the entity depends on a variety of factors, including introducing new products and meeting revenue targets as expected, the retention of key employees and key customers, increased exposure to certain governmental regulations and compliance requirements and increased costs and use of resources. Further, the integration of acquired businesses is likely to result in our systems and internal controls becoming increasingly complex and more difficult to manage. Any difficulties in the assimilation of acquired businesses into our control system could harm our operating results or cause us to fail to meet our financial reporting obligations.

Even if we are able to successfully integrate acquired businesses within Agilent, we may not be able to realize the revenue and other synergies and growth that we anticipated from the acquisition in the time frame that we expected, and the costs of achieving these benefits may be higher than what we expected. As a result, the acquisition and integration of acquired businesses may not contribute to our earnings as expected, we may not achieve our operating margin targets when expected, or at all, and we may not achieve the other anticipated strategic and financial benefits of such transactions.

A successful divestiture depends on various factors, including our ability to effectively transfer liabilities, contracts, facilities and employees to the purchaser, identify and separate the intellectual property to be divested from the intellectual property that we wish to keep and reduce fixed costs previously associated with the divested assets or business. In addition, if customers of the divested business do not receive the same level of service from the new owners, this may adversely affect our other businesses to the extent that these customers also purchase other Agilent products. In exiting a business, we may still retain liabilities associated with the support and warranty of those businesses and other indemnification obligations. All of these efforts require varying levels of management resources, which may divert our attention from other business operations. If we do not realize the expected benefits or synergies of such transactions, our consolidated financial position, results of operations, cash flows and stock price could be negatively impacted.

The impact of consolidation and acquisitions of competitors is difficult to predict and may harm our business.

The life sciences industry is intensely competitive and has been subject to increasing consolidation. Consolidation in our industries could result in existing competitors increasing their market share through business combinations and result in stronger competitors, which could have a material adverse effect on our business, financial condition and results of operations. We may not be able to compete successfully in increasingly consolidated industries and cannot predict with certainty how industry consolidation will affect our competitors or us.

Regulatory, Legal and Compliance Risks

If we fail to maintain an effective system of internal controls, we may not be able to accurately report our financial results, which could lead to a loss of investor confidence in our financial statements and have an adverse effect on our stock price.

Effective internal controls are necessary for us to provide reliable and accurate financial statements and to effectively prevent fraud. We devote significant resources and time to comply with the internal control over financial reporting requirements of the Sarbanes Oxley Act of 2002 and continue to enhance our controls. However, we cannot be certain that we will be able to prevent future significant deficiencies or material weaknesses. Inadequate internal controls could cause investors to lose confidence in our reported financial information, which could have a negative effect on investor confidence in our financial statements, the trading price of our stock and our access to capital.

Our customers and we are subject to various governmental regulations. Compliance with or changes in such regulations may cause us to incur significant expenses, and if we fail to maintain satisfactory compliance with certain regulations, we may be forced to recall products and cease their manufacture and distribution, and we could be subject to civil or criminal penalties.

Our customers and we are subject to various significant international, federal, state and local regulations, including but not limited to regulations in the areas of health and safety, packaging, product content, employment, labor and immigration, import/export controls, trade restrictions and anti-competition. In addition, as a global organization, we are subject to data

privacy and security laws, regulations, and customer-imposed controls in numerous jurisdictions as a result of having access to and processing confidential, personal, sensitive and/or patient health data in the course of our business. Global privacy laws, including the EU's General Data Protection Regulation ("GDPR"), Brazil's Lei Geral de Protecao de Dados, the California Consumer Privacy Act and China's Personal Information Protection Law and Data Security Law, apply to our activities involving the processing of personal data, both in relation to our product and service offerings and the management of our workforce. The global proliferation of privacy laws, with governmental authorities around the world passing or considering passing legislative and regulatory proposals concerning privacy and data protection, continues to result in new requirements regarding the handling of personal data and when personal data may be transferred outside the country where it was collected. Many such laws impose significant penalties for non-compliance (including possible fines of up to four percent of total company revenue under the GDPR or orders to stop processing personal data in a particular jurisdiction). Each of these privacy, security and data protection laws and regulations could impose significant limitations and increase our cost of providing our products and services where we process personal data and could harm our results of operations and expose us to significant fines, penalties and other damages.

We must also comply with complex foreign and U.S. laws and regulations, such as the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act, and other local laws prohibiting corrupt payments to governmental officials, anti-competition regulations and sanctions imposed by the U.S. Office of Foreign Assets Control and other similar laws and regulations. Such laws demand that we implement, test, and monitor an effective compliance program. Violations of these laws and regulations could result in fines and penalties, criminal sanctions, restrictions on our business conduct and on our ability to offer our products in one or more countries, and could also materially affect our brand, our ability to attract and retain employees, our international operations, our business and our operating results. Although we have implemented policies and procedures designed to ensure compliance with these laws and regulations, there can be no assurance that our employees, contractors, or agents will not violate our policies.

These regulations are complex, change frequently and have tended to become more stringent over time. We may be required to incur significant expenses to comply with these regulations or to remedy any violations of these regulations. Any failure by us to comply with applicable government regulations could also result in the cessation of our operations or portions of our operations, product recalls or impositions of fines and restrictions on our ability to carry on or expand our operations. In addition, because many of our products are regulated or sold into regulated industries, we must comply with additional regulations in marketing our products. We develop, configure and market our products to meet customer needs created by these regulations. Any significant change in these regulations could reduce demand for our products, force us to modify our products to comply with new regulations or increase our costs of producing these products. If demand for our products is adversely affected or our costs increase, our operating results and business would suffer.

Our products and operations are also often subject to the rules of industrial standards bodies, like the International Standards Organization, as well as regulation by other agencies such as the FDA. We also must comply with work safety rules. If we fail to adequately address any of these regulations, our businesses could be harmed.

We are subject to extensive regulation by the FDA and certain similar foreign regulatory agencies, and failure to comply with such regulations could harm our reputation, business, financial condition and results of operations.

A number of our products and services are subject to regulation by the FDA, the U.S. Department of Health and Human Services, the Centers for Medicare & Medicaid Services and certain similar foreign regulatory agencies. In addition, a number of our products and services may in the future be subject to regulation by the FDA and certain similar foreign regulatory agencies. These regulations govern a wide variety of product and service-related activities, from quality management, design and development to labeling, manufacturing, promotion, sales and distribution. In addition, we are subject to inspections by these and other regulatory authorities. If we or any of our suppliers, distributors or customers fail to comply with FDA and other applicable regulatory requirements or are perceived to potentially have failed to comply, we may face, among other things, warning letters; adverse publicity affecting both us and our customers; investigations or notices of non-compliance, fines, injunctions, and civil or criminal penalties; import or export restrictions; partial suspensions or total shutdown of production facilities or the imposition of operating restrictions; suspension or revocation of our license to operate, increased difficulty in obtaining required FDA clearances or approvals or foreign equivalents; seizures or recalls of our products or those of our customers; or the inability to sell our products. Any such FDA or other regulatory agency actions could disrupt our business and operations, lead to significant remedial costs and have a material adverse impact on our financial position and results of operations. In addition, the global regulatory environment has become increasingly stringent for our products and services. For example, the EU has started to enforce new requirements, known as the EU In Vitro Diagnostic Regulation (the "EU IVDR"), which imposes stricter requirements for the marketing and sale of in vitro diagnostics in the European Union. These new regulations are more stringent in a variety of areas, including clinical requirements, quality systems and post-market

surveillance activities. The new EU IVDR requirements became effective starting in May 2022. Failure to meet these requirements could adversely impact our business in the EU and other regions that tie their product registrations to the EU requirements.

Some of our products are subject to particularly complex regulations such as regulations of toxic substances, and failure to comply with such regulations could harm our business.

Some of our products and related consumables are used in conjunction with chemicals whose manufacture, processing, distribution and notification requirements are regulated by the U.S. Environmental Protection Agency ("EPA") under the Toxic Substances Control Act and by regulatory bodies in other countries under similar laws. The Toxic Substances Control Act regulations govern, among other things, the testing, manufacture, processing and distribution of chemicals, the testing of regulated chemicals for their effects on human health and safety and the import and export of chemicals. The Toxic Substances Control Act prohibits persons from manufacturing any chemical in the United States that has not been reviewed by the EPA for its effect on health and safety and placed on an EPA inventory of chemical substances. We must ensure conformance of the manufacturing, storing, processing, distribution of and notification about these chemicals to these laws and adapt to regulatory requirements in all applicable countries as these requirements change. If we fail to comply with the notification, record-keeping and other requirements in the manufacture or distribution of our products, then we could be subject to civil penalties, criminal prosecution and, in some cases, prohibition from distributing or marketing our products until the products or component substances are brought into compliance.

Our business may suffer if we fail to comply with government contracting laws and regulations.

We derive a portion of our revenue from direct and indirect sales to U.S. federal, state, local, and foreign governments and their respective agencies. Such contracts are subject to various procurement laws and regulations and contract provisions relating to their formation, administration and performance. Failure to comply with these laws, regulations or provisions in our government contracts could result in the imposition of various civil and criminal penalties, termination of contracts, forfeiture of profits, suspension of payments, increased pricing pressure or suspension from future government contracting. If our government contracts are terminated, if we are suspended from government work, or if our ability to compete for new contracts is adversely affected, our business could suffer.

Our reputation, ability to do business and financial statements may be harmed by improper conduct by any of our employees, agents or business partners.

We cannot provide assurance that our internal controls and compliance systems will always protect us from acts committed by employees, agents or business partners of ours (or of businesses we acquire or partner with) that would violate U.S. and/or non-U.S. laws, including the laws governing payments to government officials, bribery, fraud, kickbacks and false claims, pricing, sales and marketing practices, conflicts of interest, competition, employment practices and workplace behavior, export and import compliance, money laundering and data privacy. In particular, the U.S. Foreign Corrupt Practices Act, the U.K. Bribery Act and similar anti-bribery laws in other jurisdictions generally prohibit companies and their intermediaries from making improper payments to government officials for the purpose of obtaining or retaining business, and we operate in many parts of the world that have experienced governmental corruption to some degree. Any such improper actions or allegations of such acts could damage our reputation and subject us to civil or criminal investigations in the United States and in other jurisdictions, and related shareholder lawsuits could lead to substantial civil and criminal, monetary and non-monetary penalties and could cause us to incur significant legal and investigatory fees. In addition, the government may seek to hold us liable as a successor for violations committed by companies in which we invest or that we acquire. We also rely on our suppliers to adhere to our supplier standards of conduct, and material violations of such standards of conduct could occur that could have a material effect on our business, reputation and financial statements.

Environmental contamination from past and ongoing operations could subject us to substantial liabilities.

Certain properties we have previously owned or leased are undergoing remediation for subsurface contamination. Although we are indemnified for liability relating to the required remediation at some of those properties, we may be subject to liability if these indemnification obligations are not fulfilled. In other cases, we have agreed to indemnify the current owners of certain properties for liabilities related to contamination, including companies with which we have previously been affiliated such as HP, Inc., Hewlett-Packard Enterprise (formerly Hewlett-Packard Company) and Siemens Healthineers (formerly Varian Medical Systems, Inc.). Further, other properties we have previously owned or leased at which we have operated in the past, or for which we have otherwise contractually assumed or provided indemnities, certain actual or contingent environmental liabilities may or do require remediation. While we are not aware of any material liabilities associated with any potential environmental contamination at any of those properties or facilities, we may be exposed to material liability if environmental

contamination at material levels is found to exist. In addition, in connection with the acquisition of certain companies, we have assumed other costs and potential or contingent liabilities for environmental matters. Any significant costs or liabilities could have an adverse effect on results of operations.

We are subject to environmental laws and regulations that expose us to a number of risks and could result in significant liabilities and costs.

Our current and historical manufacturing and research and development processes and facilities are subject to various foreign, federal, state and local environment protection and health and safety laws and regulations. As a result, we may become subject to liabilities for environmental contamination, and these liabilities may be substantial. Although our policy is to apply strict standards for environmental protection and health and safety at our sites inside and outside the United States, we may not be aware of all conditions that could subject us to liability. Further, in the event that any future climate change legislation would require that stricter standards be imposed by domestic or international environmental regulatory authorities, we may be required to make certain changes and adaptations to our manufacturing processes and facilities. We cannot predict how changes will affect our business operations or the cost of compliance to us, our customers or our suppliers. Failure to comply with these environmental protection and health and safety laws and regulations could result in civil, criminal, regulatory, administrative or contractual sanction, including fines, penalties or suspensions, restrictions on our operations and reputational damage. If we have any violations of, or incur liabilities pursuant to these laws or regulations, our financial condition and operating results could be adversely affected.

Third parties may claim that we are infringing their intellectual property, and we could suffer significant litigation or licensing expenses or be prevented from selling products or services.

From time to time, third parties may claim that one or more of our products or services infringe their intellectual property rights. We analyze and take action in response to such claims on a case by case basis. Any dispute or litigation regarding patents or other intellectual property could be costly and time-consuming due to the complexity of our technology and the uncertainty of intellectual property litigation and could divert our management and key personnel from our business operations. A claim of intellectual property infringement could force us to enter into a costly or restrictive license agreement, which might not be available under acceptable terms or at all, could require us to redesign our products, which would be costly and time-consuming, and/or could subject us to significant damages or to an injunction against the development and sale of certain of our products or services. Our intellectual property portfolio may not be useful in asserting a counterclaim, or negotiating a license, in response to a claim of intellectual property infringement. In certain of our businesses, we rely on third-party intellectual property licenses, and we cannot ensure that these licenses will continue to be available to us in the future or can be expanded to cover new products on favorable terms or at all.

Third parties may infringe our intellectual property, and we may suffer competitive injury or expend significant resources enforcing our rights.

Our success depends in large part on our proprietary technology, including technology we obtained through acquisitions. We rely on various intellectual property rights, including patents, copyrights, trademarks and trade secrets, as well as confidentiality provisions and licensing arrangements, to establish our proprietary rights. If we do not enforce our intellectual property rights successfully, our competitive position may suffer, which could harm our operating results.

Our pending patent, copyright and trademark registration applications may not be allowed, or competitors may challenge the validity or scope of our patents, copyrights or trademarks. In addition, our patents, copyrights, trademarks and other intellectual property rights may not provide us with a significant competitive advantage.

We may need to spend significant resources monitoring and enforcing our intellectual property rights, and we may not be aware of or able to detect or prove infringement by third parties. Our competitive position may be harmed if we cannot detect infringement and enforce our intellectual property rights quickly or at all. In some circumstances, we may choose to not pursue enforcement because an infringer has a dominant intellectual property position or for other business reasons. In addition, competitors might avoid infringement by designing around our intellectual property rights or by developing non-infringing competing technologies. Intellectual property rights and our ability to enforce them may be unavailable or limited in some countries, which could make it easier for competitors to capture market share and could result in lost revenues. Furthermore, some of our intellectual property is licensed to others which may allow them to compete with us using that intellectual property.

We are subject to evolving corporate governance and public disclosure expectations and regulations that impact compliance costs and risks of noncompliance.

We are subject to changing rules and regulations promulgated by a number of governmental and self-regulatory organizations, including the SEC and NYSE, as well as evolving investor expectations around corporate governance and environmental and social practices and disclosures. These rules and regulations continue to evolve in scope and complexity, and many new requirements have been created in response to laws enacted by the U.S. and foreign governments, making compliance more difficult and uncertain. The increase in costs to comply with such evolving expectations, rules and regulations, as well as any risk of noncompliance, could adversely impact us.

Operational Risks

If we are unable to successfully manage the consolidation and streamlining of our manufacturing operations, we may not achieve desired efficiencies, and our ability to deliver products to our customers could be disrupted.

Although we utilize manufacturing facilities throughout the world, we have consolidated, and may further consolidate, our manufacturing operations to certain of our plants to achieve efficiencies and gross margin improvements. Additionally, we typically consolidate the production of products from our acquisitions into our supply chain and manufacturing processes, which are technically complex and require expertise to operate. If we are unable to establish processes to efficiently and effectively produce high quality products in the consolidated locations, we may not achieve the anticipated synergies and production may be disrupted, which could adversely affect our business and operating results.

Our operating results may suffer if our manufacturing capacity does not match the demand for our products.

Because we cannot immediately adapt our production capacity and related cost structures to rapidly changing market conditions, when demand does not meet our expectations, our manufacturing capacity may exceed our production requirements. If during an economic downturn we had excess manufacturing capacity which could occur due to our plans to expand certain manufacturing capacities, then our fixed costs associated with excess manufacturing capacity would adversely affect our gross margins and operating results. If, during a general market upturn or an upturn in one of our segments, we cannot increase our manufacturing capacity to meet product demand, we may not be able to fulfill orders in a timely manner which could lead to order cancellations, contract breaches or indemnification obligations. This inability could materially and adversely limit our ability to improve our results.

Dependence on contract manufacturing and outsourcing other portions of our supply chain, including logistics and third-party package delivery services, may adversely affect our ability to bring products to market and damage our reputation. Dependence on outsourced information technology and other administrative functions may impair our ability to operate effectively.

As part of our efforts to streamline operations and to manage costs, we outsource aspects of our manufacturing processes and other functions and continue to evaluate additional outsourcing. If our contract manufacturers or other outsourcers fail to perform their obligations in a timely manner or at satisfactory quality levels, our ability to bring products to market and our reputation could suffer. For example, during a market upturn, our contract manufacturers may be unable to meet our demand requirements, which may preclude us from fulfilling our customers' orders on a timely basis. The ability of these manufacturers to perform is largely outside of our control. If one or more of the third-party package delivery providers experiences a significant disruption in services or institutes a significant price increase, we may have to seek alternative providers, our costs could increase, and the delivery of our products could be prevented or delayed. Additionally, changing or replacing our contract manufacturers, logistics providers or other outsourcers could cause disruptions or delays. In addition, we outsource significant portions of our information technology ("IT") and other administrative functions. Since IT is critical to our operations, any failure to perform on the part of our IT providers could impair our ability to operate effectively. In addition to the risks outlined above, problems with manufacturing or IT outsourcing could result in lower revenue and unexecuted efficiencies and impact our results of operations and our stock price.

If we suffer a loss to our factories, facilities or distribution system due to catastrophe, our operations could be seriously harmed.

Our factories, facilities and distribution system are subject to catastrophic loss due to fire, flood, terrorism, public health crises, increasing severity or frequency of extreme weather events, or other climate-change related risks, including resource scarcity, rationing or unexpected costs from increases in fuel and raw material prices that may be caused by extreme weather

conditions. For example, in the second quarter of fiscal year 2022, the outbreak of COVID-19 in China led to mandated shutdown of our facilities in Shanghai, which adversely impacted our business and results, and impacted our supply chain. In addition, several of our facilities could be subject to a catastrophic loss caused by earthquake due to their locations. Our production facilities, headquarters and laboratories in California, and our production facilities in Japan, are all located in areas with above-average seismic activity. In addition, our facilities in California are susceptible to extreme weather conditions such as drought and wildfires. If any of our facilities were to experience a catastrophic loss, it could disrupt our operations, delay production, shipments and revenue and result in large expenses to repair or replace the facility. If such a disruption were to occur, we could breach agreements, our reputation could be harmed, and our business and operating results could be adversely affected. In addition, because we have consolidated our manufacturing facilities and we may not have redundant manufacturing capability readily available, we are more likely to experience an interruption to our operations in the event of a catastrophe in any one location. Although we carry insurance for property damage and business interruption, we do not carry insurance or financial reserves for interruptions or potential losses arising from earthquakes or terrorism. Also, our third-party insurance coverage will vary from time to time in both type and amount depending on availability, cost and our decisions with respect to risk retention. Economic conditions and uncertainties in global markets may adversely affect the cost and other terms upon which we are able to obtain third-party insurance. If our third-party insurance coverage is adversely affected or to the extent we have elected to self-insure, we may be at a greater risk that our financial condition will be harmed by a catastrophic loss.

If we experience a significant disruption in, or breach in security of, our information technology systems, or if we fail to implement new systems and software successfully, our business could be adversely affected.

We rely on several centralized information technology systems throughout our company to provide products and services, keep financial records, process orders, manage inventory, process shipments to customers and operate other critical functions. Our information technology systems may be susceptible to damage, disruptions or shutdowns due to power outages, hardware failures, computer viruses, attacks by computer hackers, telecommunication failures, user errors, catastrophes or other unforeseen events. For example, in December 2020, it was widely reported that SolarWinds, an information technology company, was the subject of a cyberattack that created security vulnerabilities for thousands of its clients. We identified an impacted SolarWinds server and promptly took steps to contain and remediate the incidents. While we believe that there were no disruptions to our operations as a result of this attack, other similar attacks could have a significant negative impact on our systems and operations. Our information technology systems also may experience interruptions, delays or cessations of service or produce errors in connection with system integration, software upgrades or system migration work that takes place from time to time. If we were to experience a prolonged system disruption in the information technology systems that involve our interactions with customers or suppliers, it could result in the loss of sales and customers and significant incremental costs, which could adversely affect our business. In addition, security breaches of our information technology systems could result in the misappropriation or unauthorized disclosure of confidential information belonging to us or to our employees, partners, customers or suppliers, which could result in our suffering significant financial or reputational damage.

Financial and Tax Risks

Our retirement and post retirement pension plans are subject to financial market risks that could adversely affect our future results of operations and cash flows.

We have significant retirement and post retirement pension plan assets and obligations. The performance of the financial markets and interest rates impact our plan expenses and funding obligations. Significant decreases in market interest rates, decreases in the fair value of plan assets and investment losses on plan assets will increase our funding obligations and adversely impact our results of operations and cash flows.

Changes in tax laws, unfavorable resolution of tax examinations, or exposure to additional tax liabilities could have a material adverse effect on our results of operations, financial condition and liquidity.

We are subject to taxes in the U.S., Singapore and various foreign jurisdictions. Governments in the jurisdictions in which we operate implement changes to tax laws and regulations periodically. Any implementation of tax laws that fundamentally change the taxation of corporations in the U.S. or Singapore could materially impact our effective tax rate and could have a significant adverse impact on our financial results.

We are also subject to examinations of our tax returns by tax authorities in various jurisdictions around the world. We regularly assess the likelihood of adverse outcomes resulting from ongoing tax examinations to determine the adequacy of our provision for taxes. These assessments can require a high degree of judgment and estimation. Intercompany transactions associated with the sale of inventory, services, intellectual property and cost share arrangements are complex and affect our tax liabilities. The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax laws and

regulations in multiple jurisdictions. There can be no assurance that the outcomes from ongoing tax examinations will not have an adverse effect on our operating results and financial condition. A difference in the ultimate resolution of tax uncertainties from what is currently estimated could have an adverse effect on our financial results and condition.

If tax incentives change or cease to be in effect, our income taxes could increase significantly.

We benefit from tax incentives extended to our foreign subsidiaries to encourage investment or employment. Singapore has granted us tax incentives which require renewal at various times in the future. The incentives are conditioned on achieving various thresholds of investments and employment or specific types of income. Our taxes could increase if the incentives are not renewed upon expiration. If we cannot or do not wish to satisfy all or parts of the tax incentive conditions, we may lose the related tax incentive and could be required to refund tax incentives previously realized. As a result, our effective tax rate could be higher than it would have been had we maintained the benefits of the tax incentives.

We have outstanding debt and may incur other debt in the future, which could adversely affect our financial condition, liquidity and results of operations.

We are party to a $1.35 billion five-year unsecured credit facility that will expire on March 13, 2024 and a $600 million term loan facility that matures on April 15, 2025. Furthermore, we are permitted pursuant to the credit agreement to establish incremental facilities of up to $500 million. As of October 31, 2022, we had no borrowings outstanding under the credit facility or the incremental facilities. On June 18, 2021, we increased the maximum amount of our commercial paper program to $1.35 billion. As of October 31, 2022, we had borrowings of $35 million outstanding under our U.S. commercial paper program and had a weighted average annual interest rate of 3.54 percent. We also currently have outstanding an aggregate principal amount of $2.1 billion in senior unsecured notes and $600 million outstanding under the term loan facility. We may borrow additional amounts in the future and use the proceeds from any future borrowing for general corporate purposes, future acquisitions, expansion of our business or repurchases of our outstanding shares of common stock.

Our incurrence of this debt, and increases in our aggregate levels of debt, may adversely affect our operating results and financial condition by, among other things:

- increasing our vulnerability to downturns in our business, to competitive pressures and to adverse economic and industry conditions;
- requiring the dedication of an increased portion of our expected cash flows from operations to service our indebtedness, thereby reducing the amount of expected cash flows available for other purposes, including capital expenditures, acquisitions, stock repurchases and dividends; and
- limiting our flexibility in planning for or reacting to changes in our business and our industry.

Our credit facility and our term loan facility each imposes restrictions on us, including restrictions on our ability to create liens on our assets and engage in certain types of sale and leaseback transactions and the ability of our subsidiaries to incur indebtedness, and requires us to maintain compliance with specified financial ratios. Our ability to comply with these ratios may be affected by events beyond our control. In addition, the indentures governing our senior notes contain covenants that may adversely affect our ability to incur certain liens or engage in certain types of sale and leaseback transactions. If we breach any of the covenants and do not obtain a waiver from the lenders or noteholders, then, subject to applicable cure periods, our outstanding indebtedness could be declared immediately due and payable.

We cannot assure that we will continue to pay dividends on our common stock.

Since the first quarter of fiscal year 2012, we have paid a quarterly dividend on our common stock. The timing, declaration, amount and payment of any future dividends fall within the discretion of our Board of Directors and will depend on many factors, including our available cash, estimated cash needs, earnings, financial condition, operating results, capital requirements, as well as limitations in our contractual agreements, applicable law, regulatory constraints, industry practice and other business considerations that our Board of Directors considers relevant. A change in our dividend program could have an adverse effect on the market price of our common stock.

Adverse conditions in the global banking industry and credit markets may adversely impact the value of our cash investments or impair our liquidity.

As of October 31, 2022, we had cash and cash equivalents of approximately $1,053 million invested or held in a mix of money market funds, time deposit accounts and bank demand deposit accounts. Disruptions and volatility in the financial markets may, in some cases, result in an inability to access assets such as money market funds that traditionally have been viewed as highly liquid or hinder our ability to borrow money in the amounts, at interest rates or upon the more favorable terms and conditions that might be available under different economic circumstances. Any failure of our counterparty financial institutions or funds in which we have invested may adversely impact our cash and cash equivalent positions and, in turn, our operating results and financial condition.

Item 1B. ***Unresolved Staff Comments***

None.

Item 2. ***Properties***

As of October 31, 2022, we owned or leased a total of approximately 6.7 million square feet of space worldwide. Of that, we owned approximately 4.7 million square feet and leased the remaining 2.0 million square feet. Our sales and support facilities occupied a total of approximately 0.7 million square feet. Our manufacturing plants, R&D facilities and warehouse and administrative facilities occupied approximately 6.0 million square feet. All of our businesses share sales offices throughout the world.

Information about each of our businesses appears below:

Life Sciences & Applied Markets Business. Our life sciences and applied markets business has manufacturing and R&D facilities in Australia, China, Germany, Italy, Japan, Malaysia, Netherlands, Singapore, United Kingdom and the United States.

Diagnostics and Genomics Business. Our diagnostics and genomics business has manufacturing and R&D facilities in Belgium, Denmark, Germany, Malaysia and the United States.

Agilent CrossLab Business. Our direct service delivery organization is regionally based and operating in 29 countries.

Item 3. ***Legal Proceedings***

We are involved in lawsuits, claims, investigations and proceedings, including, but not limited to, intellectual property, commercial, real estate, environmental and employment matters, which arise in the ordinary course of business. There are no matters pending that we currently believe are probable and reasonably possible of having a material impact to our business, consolidated financial condition, results of operations or cash flows.

Item 4. ***Mine Safety Disclosures***

Not applicable.

PART II

Item 5. ***Market for the Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities***

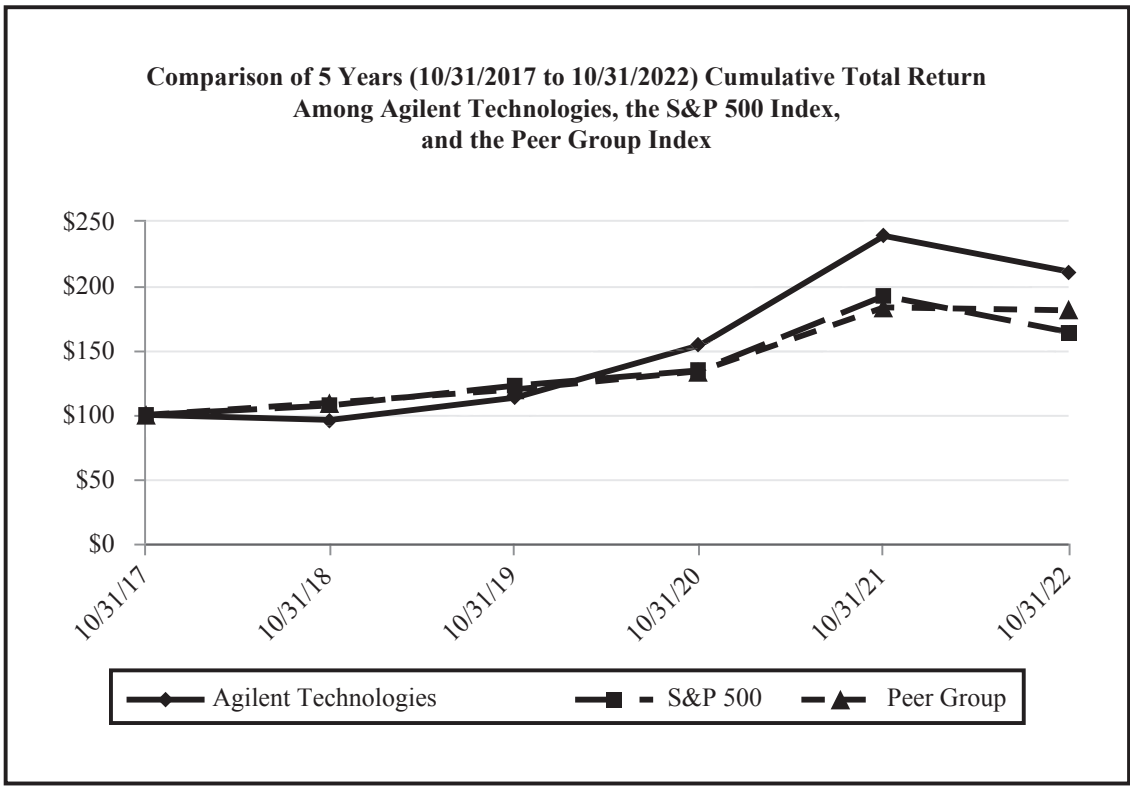
Our common stock is listed on the New York Stock Exchange with the ticker symbol “A”. As of December 1, 2022, there were 18,545 common stockholders of record.

The information required by this item with respect to equity compensation plans is included under the caption "*Equity Compensation Plans"* in our Proxy Statement for the Annual Meeting of Stockholders to be held March 15, 2023, to be filed with the Securities and Exchange Commission pursuant to Regulation 14A, and is incorporated herein by reference.

STOCK PRICE PERFORMANCE GRAPH

The graph below shows the cumulative total stockholder return on our common stock with the cumulative total return of the S&P 500 Index and our peer group, consisting of all companies in the Health Care and Materials Indexes of the S&P 500, assuming an initial investment of $100 on October 31, 2017 and the reinvestment of all dividends.

Agilent’s stock price performance shown in the following graph is not indicative of future stock price performance. The data for this performance graph was compiled for us by Standard and Poor’s.



	Base Period	INDEXED RETURNS Years Ending				
Company Name / Index	**10/31/2017**	**10/31/2018**	**10/31/2019**	**10/31/2020**	**10/31/2021**	**10/31/2022**
Agilent Technologies	**100**	96.10	113.35	154.08	239.05	211.34
S&P 500	**100**	107.35	122.72	134.64	192.42	164.31
Peer Group	**100**	109.48	119.77	133.99	183.53	181.23

ISSUER PURCHASES OF EQUITY SECURITIES

The table below summarizes information about the company's purchases, based on trade date, of its equity securities registered pursuant to Section 12 of the Exchange Act during the quarterly period ended October 31, 2022. The total number of shares of common stock purchased by the company during the fiscal year ended October 31, 2022 was 8,368,478 shares.

Period	Total Number of Shares of Common Stock Purchased(1)	Weighted Average Price Paid per Share of Common Stock(2)	Total Number of Shares of Common Stock Purchased as Part of Publicly Announced Plans or Programs(1)	Maximum Approximate Dollar Value of Shares of Common Stock that May Yet Be Purchased Under the Plans or Programs (in millions)(1)
August 1, 2022 through August 31, 2022	293,540	$ 132.94	293,540	$ 534
September 1, 2022 through September 30, 2022	392,890	$ 128.47	392,890	$ 483
October 1, 2022 through October 31, 2022	350,791	$ 129.65	350,791	$ 438
Total	1,037,221	$ 130.14	1,037,221	

(1) On February 16, 2021 we announced that our board of directors had approved a new share repurchase program (the "2021 repurchase program") designed, among other things, to reduce or eliminate dilution resulting from issuance of stock under the company's employee equity incentive programs. The 2021 repurchase program authorizes the purchase of up to $2.0 billion of our common stock at the company's discretion and has no fixed termination date. The 2021 repurchase program which became effective on February 18, 2021, replaced and terminated the 2019 repurchase program on that date. The 2021 repurchase program does not require the company to acquire a specific number of shares and may be suspended, amended or discontinued at any time. As of October 31, 2022, all repurchased shares to date have been retired.

(2) The weighted average price paid per share of common stock does not include the cost of commissions.

Item 6. *[Reserved]*

Item 7. *Management's Discussion and Analysis of Financial Condition and Results of Operations*

The following discussion should be read in conjunction with the consolidated financial statements and notes thereto included elsewhere in this Annual Report on Form 10-K. This report contains forward-looking statements including, without limitation, statements regarding growth opportunities, including for revenue and our end markets, strength and drivers of the markets into which we sell, sales funnels, our strategic direction, new product and service introductions and the position of our current products and services, market demand for and adoption of our products, the ability of our products and solutions to address customer needs and meet industry requirements, our focus on differentiating our product solutions, improving our customers' experience and growing our earnings, future financial results, our operating margin, mix, our investments, including in manufacturing infrastructure, research and development and expanding and improving our applications and solutions portfolios, expanding our position in developing countries and emerging markets, our focus on balanced capital allocation, our contributions to our pension and other defined benefit plans, impairment of goodwill and other intangible assets, the impact of foreign currency movements, our hedging programs and other actions to offset the effects of tariffs and foreign currency movements, our future effective tax rate, tax valuation allowance and unrecognized tax benefits, the impact of local government regulations on our ability to pay vendors or conduct operations, our ability to satisfy our liquidity requirements, including through cash generated from operations, the potential impact of adopting new accounting pronouncements, indemnification, source and supply of materials used in our products, our sales, our purchase commitments, our capital expenditures, the integration and effects of our acquisitions and other transactions, our stock repurchase program and dividends and the potential or anticipated direct or indirect impact of COVID-19 on our business that involve risks and uncertainties. Our actual results could differ materially from the results contemplated by these forward-looking statements due to various factors, including those discussed in Part I Item 1A and elsewhere in this Form 10-K.

Overview and Executive Summary

Agilent Technologies Inc. ("we", "Agilent" or the "company"), incorporated in Delaware in May 1999, is a global leader in life sciences, diagnostics and applied chemical markets, providing application focused solutions that include instruments, software, services and consumables for the entire laboratory workflow.

In the first quarter of fiscal year 2022, we announced a change in organizational structure designed to enable our growth strategies and strengthen our focus on customers. Our chemistries and supplies business and our remarketed instruments business moved from our Agilent CrossLab business segment to our life sciences and applied markets business segment. We also moved BioTek's service revenue and related cost of sales from our life sciences and applied markets business segment to our Agilent CrossLab business segment. We began reporting under this new structure with the Quarterly Report on Form 10-Q for the period ended January 31, 2022. Historical financial segment information has been recast to conform to this new presentation in our financial statements and accompanying notes. There was no change to our diagnostics and genomics business segment.

COVID-19 Pandemic

Both our domestic and international operations have been and continue to be affected by the ongoing global pandemic of a novel strain of coronavirus ("COVID-19") and the resulting volatility and uncertainty it has caused in the U.S. and international markets. In fiscal 2022, many businesses and countries, including the U.S., continued applying preventative and precautionary measures to mitigate the spread of the virus.

In the latter part of our second quarter, we had to shut down our primary gas chromatography production facility and logistics center in Shanghai in compliance with lockdown measures related to COVID-19. We successfully managed the unplanned shutdown of our facility and fully recognized the revenue that was delayed from our second quarter within fiscal year 2022.

While conditions related to the COVID-19 pandemic have improved in 2022 compared to 2021, the pandemic continues to be dynamic, and near-term challenges across the economy remain. The ongoing effects of COVID-19 remain difficult to predict due to numerous uncertainties, including the severity, duration and resurgence of the outbreak, new variants and the contagiousness of these new variants, the effectiveness of health and safety measures including vaccines and therapies, government and community responses including additional lockdowns, the pace and strength of the economic recovery, supply chain pressures, delivery and installation delays due to variable access to customer sites, among others. We will continue to actively monitor the effects of the pandemic and will continue to take appropriate steps to mitigate the impacts to our employees and on our business results.

Russia-Ukraine Conflict

In response to the ongoing conflict in Ukraine, at the beginning of March, we suspended sales prohibited by sanctions, halted the shipment of products to Russia with the exception of diagnostics and healthcare products and limited our in-country service to those diagnostics and healthcare customers. Subsequently, effective May 23, 2022, we ceased major operations within Russia, and as a result, we recorded an immaterial expense associated with the shutdown of operations for the three months ended April 30, 2022. For the year ended October 31, 2022 and 2021, sales derived from customers based in Russia represented an immaterial percentage of our total revenue.

Term Loan Facility

On April 15, 2022, we entered into a term loan agreement with a group of financial institutions, which provided for a $600 million delayed draw term loan that will mature on April 15, 2025. As of October 31, 2022, we had $600 million borrowings outstanding under the term loan facility and had a weighted average interest rate of 3.98 percent. Loans under the term loan agreement bear interest, at our option, either at: (i) the alternate base rate, as defined in the term loan agreement, plus the applicable margin for such loans or (ii) adjusted term SOFR, as defined in the term loan agreement, plus the applicable margin for such loans. The term loan agreement contains customary representations and warranties as well as customary affirmative and negative covenants. We were in compliance with the covenants for the term loan during the year ended October 31, 2022.

On May 4, 2022, we used the proceeds from the term loan facility and repaid the $600 million outstanding aggregate principal amount of our 2023 senior notes. The total redemption price of approximately $609 million was computed in accordance with the terms of the 2023 senior notes as the present value of the remaining scheduled payments of principal and unpaid interest on the notes being redeemed. In May 2022, we recorded a loss on extinguishment of debt of $9 million in other income (expense), net in the consolidated statement of operations. In addition, $7 million of accrued interest, up to but not including the applicable redemption date, was paid.

Actual Results

During 2022, we navigated through a challenging environment marked by supply chain and logistics pressures, high inflation, a COVID-related shutdown in China and were able to deliver strong results. Agilent's net revenue of $6,848 million in 2022 increased 8 percent when compared to 2021. Foreign currency movements for 2022 had an overall unfavorable impact on revenue growth of 4 percentage points when compared to 2021. Net revenue increased in all business segments, geographic regions and most key end markets. Revenue in the life sciences and applied markets business increased 9 percent in 2022 when compared to 2021. Foreign currency movements had an overall unfavorable impact on revenue growth of 4 percentage points in 2022 when compared to 2021. Revenue in the diagnostics and genomics business increased 7 percent in 2022 when compared to 2021. Foreign currency movements had an overall unfavorable impact on revenue growth of 4 percentage points in 2022 when compared to 2021. Revenue in the Agilent CrossLab business increased 7 percent in 2022 when compared to 2021. Foreign currency movements had an overall unfavorable impact on revenue growth of 4 percentage points in 2022 when compared to 2021.

Agilent's net revenue of $6,319 million increased 18 percent in 2021 when compared to 2020. Foreign currency movements for 2021 had an overall favorable impact on revenue growth of 3 percentage points when compared to 2020. Net revenue increased in all business segments, geographic regions and key end markets compared to 2020. Revenue in the life sciences and applied markets business increased 18 percent in 2021 when compared to 2020. In 2021, acquisitions from 2019 had an overall favorable impact of 7 percentage points when compared to 2020. Foreign currency movements had an overall favorable impact on revenue growth of 3 percentage points in 2021 when compared to 2020. Revenue in the diagnostics and genomics business increased 24 percent in 2021 when compared to 2020. Foreign currency movements had an overall favorable impact on revenue growth of 3 percentage points in 2021 when compared to 2020. Revenue in the Agilent CrossLab business increased 16 percent in 2021 when compared to 2020. Foreign currency movements had an overall favorable impact on revenue growth of 4 percentage points in 2021 when compared to 2020.

Net income was $1,254 million in 2022 compared to net income of $1,210 million and $719 million in 2021 and 2020, respectively. Net income in 2022 was impacted by higher sales volume partially offset by supply chain, logistics and inflationary pressures increasing our costs. Net income in 2021 was impacted by higher sales volume and net gains on fair value of equity securities partially offset by significant expense increases from our variable pay, share-based compensation expense and sales commissions. Net income in 2020 was impacted by revenue declines in certain of our businesses associated with the COVID-19 pandemic and increased costs and expenses which included an impairment charge of $98 million related to the closure of our sequencer development program. As of October 31, 2022 and 2021, we had cash and cash equivalents balances of $1,053 million and $1,484 million, respectively.

2019 Repurchase Program. During the year ended October 31, 2020, we repurchased and retired 5.2 million shares for $469 million under the 2019 repurchase program authorization. During the year ended October 31, 2021, we repurchased and retired 3.1 million shares for $365 million under this authorization. Effective February 18, 2021, the 2019 repurchase program was terminated and replaced by the 2021 repurchase program. The remaining authorization under the 2019 repurchase plan of $193 million expired on February 18, 2021.

2021 Repurchase Program. During the year ended October 31, 2021, we repurchased and retired 3.0 million shares for $423 million under the 2021 repurchase program authorization. During the year ended October 31, 2022, we repurchased and retired 8.4 million shares for $1,139 million under this authorization. As of October 31, 2022, we had remaining authorization to repurchase up to approximately $438 million of our common stock under the 2021 repurchase program.

Dividends. During the year ended October 31, 2022, cash dividends of $0.840 per share, or $250 million were declared and paid on the company's outstanding common stock. During the year ended October 31, 2021, cash dividends of $0.776 per share, or $236 million were declared and paid on the company's outstanding common stock. During the year ended October 31, 2020, cash dividends of $0.720 per share, or $222 million were declared and paid on the company's outstanding common stock.

On November 16, 2022 we declared a quarterly dividend of $0.225 per share of common stock, or approximately $66 million which will be paid on January 25, 2023 to shareholders of record as of the close of business on January 3, 2023. The timing and amounts of any future dividends are subject to determination and approval by our board of directors.

Looking forward, we remain focused on improving our customers' experience, differentiating product solutions and productivity. We expect to face continued inflationary and logistical pressures (such as longer lead times and limited sources of supply in the near term) which we will continue to mitigate through targeted pricing and various sourcing strategies. While we anticipate an increasingly uncertain macroeconomic environment in fiscal year 2023, we remain optimistic about our growth opportunities in all of our key end markets in fiscal year 2023.

Critical Accounting Policies and Estimates

The preparation of financial statements in accordance with accounting principles generally accepted in the U.S. requires management to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and accompanying notes. Management bases its estimates on historical experience and various other assumptions believed to be reasonable. Although these estimates are based on management's best knowledge of current events and actions that may impact the company in the future, actual results may be different from the estimates. An accounting policy is deemed to be critical if it requires an accounting estimate to be made based on assumptions about matters that are highly uncertain at the time the estimate is made and if different estimates that reasonably could have been used or changes in the accounting estimate that are reasonably likely to occur could materially change the financial statements. Our critical accounting policies are those that affect our financial statements materially and involve difficult, subjective or complex judgments by management. Those policies are revenue recognition, inventory valuation, retirement and post-retirement plan assumptions, valuation of goodwill and purchased intangible assets and accounting for income taxes.

Revenue Recognition. We enter into contracts to sell products, services or combinations of products and services. Products may include hardware or software and services may include one-time service events or services performed over time.

We derive revenue primarily from the sale of analytical and diagnostics products and services. A performance obligation is a promise in a contract to transfer a distinct product or service to a customer and is the unit of account under Accounting Standard Codification Topic 606, Revenue from Contracts with Customers, ("ASC 606''). Revenue is recognized when control of the promised products or services is transferred to our customers and the performance obligation is fulfilled in an amount that reflects the consideration that we expect to be entitled in exchange for those products or services, the transaction price. For equipment, consumables, and most software licenses, control transfers to the customer at a point in time. We use present right to payment, legal title, physical possession of the asset, and risks and rewards of ownership as indicators to determine the transfer of control to the customer. For products that transfer control over time, revenue is recognized as the performance obligation is satisfied. Product over time revenue is assessed against the following criteria: the performance creates an asset that the customer controls as the asset is created; the asset has no alternative use; and we have an enforceable right to payment. Where acceptance is not a formality, the customer must have documented their acceptance of the product or service. For products that include installation, if the installation meets the criteria to be considered a separate performance obligation, product revenue is recognized when control has passed to the customer, and recognition of installation revenue occurs once completed. Product revenue, including sales to resellers and distributors is reduced for provisions for warranties, returns, and other adjustments in the period the related sales are recorded.

Service revenue includes extended warranty, customer and software support including: Software as a Service, post contract support, consulting including companion diagnostics, and training and education. Instrument service contracts and software maintenance contracts are typically annual contracts, which are billed at the beginning of the contract or maintenance period. Revenue for these contracts is recognized on a straight-line basis to revenue over the service period, as a time-based measure of progress best reflects our performance in satisfying this obligation. There are no deferred costs associated with the service contract, as the cost of the service is recorded when the service is performed. Service calls not included in a support contract are recognized to revenue at the time a service is performed.

We have sales from standalone software. These arrangements typically include software licenses and maintenance contracts, both of which we have determined are distinct performance obligations. We determine the amount of the transaction price to allocate to the license and maintenance contract based on the relative standalone selling price of each performance obligation. Software license revenue is recognized at the point in time when control has been transferred to the customer. The revenue allocated to the software maintenance contract is recognized on a straight-line basis over the maintenance period, which is the contractual term of the contract, as a time-based measure of progress best reflects our performance in satisfying this obligation. Unspecified rights to software upgrades are typically sold as part of the maintenance contract on a when-and-if-available basis.

Our multiple-element arrangements are generally comprised of a combination of instruments, installation or other start-up services, and/or software, and/or support or services. Hardware and software elements are typically delivered at the same time and revenue is recognized when control passes to the customer. Service revenue is deferred and recognized over the contractual period or as services are rendered and accepted by the customer. Our arrangements generally do not include any provisions for cancellation, termination, or refunds that would significantly impact recognized revenue.

For contracts with multiple performance obligations, we allocate the consideration to which we expect to be entitled to each performance obligation based on relative standalone selling prices and recognize the related revenue when or as control of each individual performance obligation is transferred to customers. We estimate the standalone selling price by calculating the average historical selling price of our products and services per country for each performance obligation. Stand-alone selling prices are determined for each distinct good or service in the contract, and then we allocate the transaction price in proportion to those standalone selling prices by performance obligations.

A portion of our revenue relates to lease arrangements. Standalone lease arrangements are outside the scope of ASC 606 and are therefore accounted for in accordance with ASC 842, Leases ("ASC 842") beginning in 2020 and ASC 840, Leases ("ASC 840") for prior periods. Each of these contracts is evaluated as a lease arrangement, either as an operating lease or a sales-type finance lease using the current lease classification guidance. In a lease arrangement that is a multiple-element arrangement that contains equipment leases and the supply of consumables, the revenue associated with the instrument rental is treated under the lease accounting standard ASC 842, whereas the revenue associated with the consumables, the non-lease component, is recognized in accordance with the ASC 606 revenue standard.

Inventory Valuation. We assess the valuation of our inventory on a periodic basis and make adjustments to the value for estimated excess and obsolete inventory based upon estimates about future demand and actual usage. Such estimates are difficult to make under most economic conditions. The excess balance determined by this analysis becomes the basis for our excess inventory charge. Our excess inventory review process includes analysis of sales forecasts, managing product rollovers and working with manufacturing to maximize recovery of excess inventory. If actual market conditions are less favorable than those projected by management, additional write-downs may be required. If actual market conditions are more favorable than anticipated, inventory previously written down may be sold to customers, resulting in lower cost of sales and higher income from operations than expected in that period.

Retirement and Post-Retirement Benefit Plan Assumptions. Retirement and post-retirement benefit plan costs are a significant cost of doing business. They represent obligations that will ultimately be settled sometime in the future and therefore are subject to estimation. Pension accounting is intended to reflect the recognition of future benefit costs over the employees' average expected future service to Agilent based on the terms of the plans and investment and funding decisions. To estimate the impact of these future payments and our decisions concerning funding of these obligations, we are required to make assumptions using actuarial concepts within the framework of accounting principles generally accepted in the U.S. Two critical assumptions are the discount rate and the expected long-term return on plan assets. Other important assumptions include expected future salary increases, expected future increases to benefit payments, expected retirement dates, employee turnover, retiree mortality rates, and portfolio composition. We evaluate these assumptions at least annually.

The discount rate is used to determine the present value of future benefit payments at the measurement date - October 31 for both U.S. and non-U.S. plans. For 2022 and 2021, the U.S. discount rates were based on the results of matching expected plan benefit payments with cash flows from a hypothetically constructed bond portfolio. In 2022, discount rates for the U.S. pension and retiree medical plans increased compared to the previous year due to the increase in the corporate bond rates. For 2022 and 2021, the discount rates for non-U.S. plans were generally based on published rates for high quality corporate bonds and in 2022, increased compared to the previous year. If we had changed our discount rate by 1 percent, the impact would have been approximately $3 million on U.S. pension expense and $16 million on non-U.S. pension expense for the year ended October 31, 2022. Lower discount rates usually increase present values of the pension benefit obligation and subsequent year pension expense; higher discount rates usually decrease present values of the pension benefit obligation and subsequent year pension expense.

The company uses alternate methods of amortization as allowed by the authoritative guidance which amortizes the actuarial gains and losses on a consistent basis for the years presented. For U.S. Plans, gains and losses are amortized over the average future lifetime of participants using the corridor method. For most Non-U.S. Plans and U.S. Post-Retirement Benefit Plans, gains and losses are amortized using a separate layer for each year's gains and losses.

In the U.S., target asset allocations for our retirement and post-retirement benefit plans were approximately 50 percent to equities and approximately 50 percent to fixed income investments as of October 31, 2022. Our Deferred Profit-Sharing Plan

target asset allocation is approximately 60 percent to equities and approximately 40 percent to fixed income investments. Approximately 1 percent of the retirement and post-retirement plans consists of limited partnerships. Outside the U.S., our target asset allocation ranges from 15 percent to 60 percent to equities, from 30 percent to 80 percent to fixed income investments, from zero to 25 percent to real estate and from zero to 55 percent to annuity contracts, depending on the plan. All plans' assets are broadly diversified. Due to fluctuations in equity and bond markets, our actual allocations of plan assets at October 31, 2022, may differ from the target allocation. Our policy is to bring the actual allocation in line with the target allocation.

Equity securities include exchange-traded common stock and preferred stock of companies from broadly diversified industries. Fixed income securities include a global portfolio of corporate bonds of companies from diversified industries, government securities, mortgage-backed securities, asset-backed securities, derivative instruments and other. The annuity contract is an insurance buy-in contract issued by a third-party insurance company for a portion of benefit obligations of listed pensioners under the U.K. defined benefit plan, and is funded with existing pension plan assets with no adjustment made to the benefit obligations. Real estate securities include holdings of managed investment funds which invest primarily in the equity instruments of real estate investment trusts and other similar real estate investments. Other investments include a group trust consisting primarily of private equity partnerships.

The expected long-term return on plan assets is estimated using current and expected asset allocations as well as historical and expected returns. Plan assets are valued at fair value. If we had changed our estimated return on assets by 1 percent, the impact would have been $6 million on U.S. pension expense and $10 million on non-U.S. pension expense for the year ended October 31, 2022. The total periodic pension and post-retirement benefit costs recorded were a $2 million benefit in 2022, $24 million expense in 2021 and $22 million expense in 2020. These costs included a loss on settlement of $4 million, $1 million and $4 million, for the years ended October 31, 2022, 2021 and 2020, respectively.

Goodwill and Purchased Intangible Assets. We assess our goodwill and purchased intangible assets for impairment annually or whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Under the authoritative guidance, we have the option to perform a qualitative assessment to determine whether further impairment testing is necessary. The accounting standard gives an entity the option to first assess qualitative factors to determine whether performing the quantitative test is necessary. If an entity believes, as a result of its qualitative assessment, that it is more-likely-than-not (i.e., greater than 50% chance) that the fair value of a reporting unit is less than its carrying amount, the quantitative impairment test will be required. Otherwise, no further testing will be required.

The guidance includes examples of events and circumstances that might indicate that a reporting unit's fair value is less than its carrying amount. These include macro-economic conditions such as deterioration in the entity's operating environment or industry or market considerations; entity-specific events such as increasing costs, declining financial performance, or loss of key personnel; or other events such as an expectation that a reporting unit will be sold or a sustained decrease in the stock price on either an absolute basis or relative to peers.

If it is determined, as a result of the qualitative assessment, that it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, then we are required to perform a quantitative impairment test on goodwill to identify and measure the amount of a goodwill impairment loss to be recognized. A goodwill impairment loss, if any, is measured as the amount by which a reporting unit's carrying value, including goodwill, exceeds its fair value, not to exceed the carrying amount of goodwill. As defined in the authoritative guidance, a reporting unit is an operating segment, or one level below an operating segment. We aggregate components of an operating segment that have similar economic characteristics into our reporting units.

In fiscal year 2022, we assessed goodwill impairment for our three reporting units which consisted of our three segments: life sciences and applied markets, diagnostics and genomics and Agilent CrossLab. We performed a quantitative test for goodwill impairment of the three reporting units as of November 1, 2021, due to the change in our segment structure. As of November 1, 2021, there was no impairment of goodwill. We performed a qualitative test for goodwill impairment of the three reporting units, as of September 30, 2022, our annual impairment test date. Based on the results of our qualitative testing, we believe that it is more-likely-than-not that the fair value of each reporting unit is greater than its respective carrying value. Each quarter we review the events and circumstances to determine if goodwill impairment is indicated. There was no impairment of goodwill during the years ended October 31, 2022, 2021 and 2020.

Purchased intangible assets consist primarily of acquired developed technologies, proprietary know-how, trademarks, and customer relationships and are amortized using the best estimate of the asset's useful life that reflects the pattern in which the economic benefits are consumed or used up or a straight-line method ranging from 6 months to 15 years. Our determination of the fair value of the intangible assets acquired involves the use of significant estimates and assumptions. Specifically, our determination of the fair value of the developed product technology and in-process research and development ("IPR&D")

acquired involves significant estimates and assumptions related to revenue growth rates and discount rates. Our determination of the fair value of customer relationships acquired involves significant estimates and assumptions related to revenue growth rates, discount rates, and customer attrition rates. Our determination of the fair value of the tradename acquired involves the use of significant estimates and assumptions related to revenue growth rates, royalty rates and discount rates. The company believes that the fair value assigned to the assets acquired and liabilities assumed are based on reasonable assumptions and estimates that marketplace participants would use. Actual results could differ materially from these estimates. IPR&D is initially capitalized at fair value as an intangible asset with an indefinite life and assessed for impairment thereafter. When the IPR&D project is complete, it is reclassified as an amortizable purchased intangible asset and is amortized over its estimated useful life. If an IPR&D project is abandoned, we will record a charge for the value of the related intangible asset to our consolidated statement of operations in the period it is abandoned.

We continually monitor events and changes in circumstances that could indicate carrying amounts of finite-lived intangible assets may not be recoverable. When such events or changes in circumstances occur, we assess the recoverability of finite-lived intangible assets by determining whether the carrying value of such assets will be recovered through undiscounted expected future cash flows. If the total of the undiscounted future cash flows is less than the carrying amount of those assets, we recognize an impairment loss based on the excess of the carrying amount over the fair value of the assets.

Our indefinite-lived intangible assets are IPR&D intangible assets. The accounting guidance allows a qualitative approach for testing indefinite-lived intangible assets for impairment, similar to the issued impairment testing guidance for goodwill and allows the option to first assess qualitative factors (events and circumstances) that could have affected the significant inputs used in determining the fair value of the indefinite-lived intangible asset to determine whether it is more-likely-than-not (i.e., greater than 50% chance) that the indefinite-lived intangible asset is impaired. An organization may choose to bypass the qualitative assessment for any indefinite-lived intangible asset in any period and proceed directly to calculating its fair value. We performed a qualitative test for impairment of indefinite-lived intangible assets as of September 30, 2022. Based on the results of our qualitative testing, we believe that it is more-likely-than-not that the fair values of these indefinite-lived intangible assets are greater than their respective carrying values. Each quarter we review the events and circumstances to determine if impairment of indefinite-lived intangible assets is indicated. During the year ended October 31, 2022 and 2021 there were no impairments of indefinite-lived intangible assets. During the year ended October 31, 2020, we recorded an impairment of in-process research and development of $90 million related to the shutdown of our sequencer development program in our diagnostics and genomics segment.

Accounting for Income Taxes. We must make certain estimates and judgments in determining income tax expense for financial statement purposes. These estimates and judgments occur in the calculation of tax credits, benefits and deductions, and in the calculation of certain tax assets and liabilities which arise from differences in the timing of recognition of revenue and expense for tax and financial statement purposes, as well as interest and penalties related to uncertain tax positions. Significant changes to these estimates may result in an increase or decrease to our tax provision in a subsequent period. On a quarterly basis, we provide for income taxes based upon an estimated annual effective tax rate. The effective tax rate is highly dependent upon the geographic composition of worldwide earnings, tax regulations governing each region, availability of tax credits and the effectiveness of our tax planning strategies. We monitor the changes in many factors and adjust our effective income tax rate on a timely basis. If actual results differ from these estimates, this could have a material effect on our financial condition and results of operations.

Significant management judgment is also required in determining whether deferred tax assets will be realized in full or in part. When it is more-likely-than-not that all or some portion of deferred tax assets may not be realized, a valuation allowance must be established against such deferred tax assets. We consider all available positive and negative evidence on a jurisdiction-by-jurisdiction basis when assessing whether it is more likely than not that deferred tax assets are recoverable. We consider evidence such as our past operating results, the existence of losses in recent years and our forecast of future taxable income.

The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax law and regulations in a multitude of jurisdictions. Although the guidance on the accounting for uncertainty in income taxes prescribes the use of a recognition and measurement model, the determination of whether an uncertain tax position has met those thresholds will continue to require significant judgment by management. In accordance with the guidance on the accounting for uncertainty in income taxes, for all U.S. and other tax jurisdictions, we recognize potential liabilities for anticipated tax audit issues based on our estimate of whether, and the extent to which, additional taxes and interest will be due. The ultimate resolution of tax uncertainties may differ from what is currently estimated, which could result in a material impact on income tax expense. If our estimate of income tax liabilities proves to be less than the ultimate assessment, a further charge to expense would be required. If events occur and the payment of these amounts ultimately proves to be unnecessary, the reversal of the liabilities would result in tax benefits being recognized in the period when we determine the liabilities are no longer necessary.

We include interest and penalties related to unrecognized tax benefits within the provision for income taxes on the consolidated statements of operations.

Adoption of New Pronouncements

See Note 2, "New Accounting Pronouncements," to the consolidated financial statements for a description of new accounting pronouncements.

Foreign Currency

Our revenues, costs and expenses, and monetary assets and liabilities and equity are exposed to changes in foreign currency exchange rates as a result of our global operating and financing activities. Foreign currency movements for the year ended October 31, 2022, had an overall unfavorable impact on revenue of 4 percentage points when compared to the same period last year. Foreign currency movements for the year ended October 31, 2021, had an overall favorable impact on revenue of 3 percentage points when compared to 2020. When movements in foreign currency exchange rates have a negative impact on revenue, they will also have a positive impact by reducing our costs and expenses. We calculate the impact of movements in foreign currency exchange rates by applying the actual foreign currency exchange rates in effect during the last month of each quarter of the current year to both the applicable current and prior year periods. We hedge revenues, expenses and balance sheet exposures that are not denominated in the functional currencies of our subsidiaries on a short term and anticipated basis. We do experience some fluctuations within individual lines of the consolidated statement of operations and balance sheet because our hedging program is not designed to offset the currency movements in each category of revenues, expenses, monetary assets and liabilities. Our hedging program is designed to hedge currency movements on a relatively short-term basis (up to a rolling thirteen-month period). We may also hedge equity balances denominated in foreign currency on a long-term basis. To the extent that we are required to pay for all, or portions, of an acquisition price in foreign currencies, we may enter into foreign exchange contracts to reduce the risk that currency movements will impact the U.S. dollar cost of the transaction.

Results from Operations

Net Revenue

	Years Ended October 31,			2022 over 2021 Change	2021 over 2020 Change
	2022	2021	2020		
	(in millions)				
Net revenue:					
Products	$ 5,187	$ 4,756	$ 3,993	9%	19%
Services and other	$ 1,661	$ 1,563	$ 1,346	6%	16%
Total net revenue	$ 6,848	$ 6,319	$ 5,339	8%	18%

	Years Ended October 31,			2022 over 2021 Change	2021 over 2020 Change
	2022	2021	2020		
% of total net revenue:					
Products	76 %	75 %	75 %	1 ppt.	—
Services and other	24 %	25 %	25 %	(1) ppt.	—
Total	100 %	100 %	100 %		

Agilent's net revenue of $6,848 million for the year ended October 31, 2022, increased 8 percent when compared to 2021. Foreign currency movements had an overall unfavorable impact on revenue growth of 4 percentage points in 2022 when compared to 2021. For the year ended October 31, 2022, net revenue increased in all our segments, geographic regions and most of our key end markets. Agilent's net revenue of $6,319 million increased 18 percent in 2021 when compared to 2020. Foreign currency movements had an overall favorable impact on revenue growth of 3 percentage points in 2021 when compared to 2020.

Product revenue includes revenue generated from the sales of our analytical instrumentation, software and consumables. Revenue from products increased 9 percent for the year ended October 31, 2022, when compared to 2021. Product revenue growth in the year ended October 31, 2022, was primarily driven by increased sales within our liquid chromatography, spectroscopy, nucleic acid solutions and consumables businesses.

Revenue from products increased 19 percent for the year ended October 31, 2021, when compared to 2020. The growth in product revenue was driven by increased sales within our liquid chromatography and mass spectrometry businesses with continued strong growth in our nucleic acid solutions and cell analysis businesses.

Services and other revenue consist of contract repair, preventative maintenance, compliance services, repair and maintenance, installation services, and consulting services related to the companion diagnostics and nucleic acid solutions businesses. Services and other revenue increased 6 percent in 2022 as compared to 2021. Service revenue increases reflected strong growth from contract repair services, compliance services, installation services, consultative services and relocation services in all key end markets except the academia and government markets.

Services and other revenue increased 16 percent in 2021 as compared to 2020. Service revenue was strong across all service regions and from contract services, on-demand repairs and nearly all other service types. Services sold with instrument sales grew more than twice as fast as the growth in after-market service revenue during that same period. Increase in services from our companion diagnostics, cell analysis and pathology businesses also contributed to the increase in service revenue in 2021.

Net Revenue By Segment

	Years Ended October 31,			2022 over 2021 Change	2021 over 2020 Change
	2022	2021	2020		
	(in millions)				
Net revenue by segment:					
Life sciences and applied markets	$ 4,007	$ 3,663	$ 3,115	9%	18%
Diagnostics and genomics	$ 1,389	$ 1,296	$ 1,047	7%	24%
Agilent CrossLab	$ 1,452	$ 1,360	$ 1,177	7%	16%
Total net revenue	$ 6,848	$ 6,319	$ 5,339	8%	18%

Revenue in the life sciences and applied markets business increased 9 percent in 2022 when compared to 2021. Foreign currency movements had an overall unfavorable impact on revenue growth of 4 percentage points in 2022 when compared to 2021. For the year ended October 31, 2022, revenue growth was strong within the chemicals and advanced materials markets driven by demand for our spectroscopy, gas chromatography and consumable products. Revenue growth was strong within the pharmaceutical market driven by demand for our liquid chromatography, cell analysis and liquid chromatography mass spectrometry products. Revenue in the life sciences and applied markets business increased 18 percent in 2021 when compared to 2020. Foreign currency movements had an overall favorable impact on revenue growth of 3 percentage points in 2021 when compared to 2020. For the year ended October 31, 2021, we saw revenue growth across all key end markets when compared to 2020. Revenue growth was led by strong demand for our products within the pharmaceutical and the chemicals and advanced materials markets when compared to 2020.

Revenue in the diagnostics and genomics business increased 7 percent in 2022 when compared to 2021. Foreign currency movements had an overall unfavorable impact on revenue growth of 4 percentage points in 2022 when compared to 2021. Revenue growth was strong within the pharmaceutical market led by performance from our nucleic acid solutions business. Revenue in the diagnostics and genomics business increased 24 percent in 2021 when compared to 2020. Foreign currency movements had an overall favorable impact on revenue growth of 3 percentage points in 2021 when compared to 2020. For the year ended October 31, 2021, we saw revenue growth across all key end markets when compared to the same period last year. Revenue growth was strong within the pharmaceutical market led by performance from our nucleic acid solutions and biomolecular analysis businesses. Revenue growth was strong within the diagnostics and clinical markets led by performance from our pathology, companion diagnostics and genomics businesses.

Revenue in the Agilent CrossLab business increased 7 percent in 2022 when compared to 2021. Foreign currency movements had an overall unfavorable impact on revenue growth of 4 percentage points in 2022 when compared to 2021. For the year ended October 31, 2022, we saw revenue growth across most of our end markets led by strong revenue growth from the pharmaceutical and chemicals and advanced materials markets when compared to the same periods last year. Revenue

generated by Agilent CrossLab increased 16 percent in 2021 when compared to 2020. Foreign currency movements had an overall favorable impact on revenue growth of 4 percentage points in 2021 when compared to 2020. For the year ended October 31, 2021, we saw revenue growth across all key end markets led by strong growth from the pharmaceutical and chemical and advanced materials and food markets when compared to 2020.

Costs and Expenses

	Years Ended October 31,			2022 over 2021 Change	2021 over 2020 Change
	2022	2021	2020		
(in millions, except margin data)					
Gross margin on products	56.8 %	56.3 %	55.0 %	1 ppt.	1 ppt.
Gross margin on services and other	46.8 %	46.7 %	47.5 %	—	(1) ppt.
Total gross margin	54.4 %	53.9 %	53.1 %	1 ppt.	1 ppt.
Research and development	$ 467	$ 441	$ 495	6%	(11)%
Selling, general and administrative	$ 1,637	$ 1,619	$ 1,496	1%	8%
Operating margin	23.6 %	21.3 %	15.8 %	2 ppts.	6 ppts.

Total gross margin for the year ended October 31, 2022 increased 1 percentage point when compared to 2021. Total gross margin was impacted by higher sales volume, targeted price increases and lower inventory charges which were offset by higher material costs, shipping and logistics costs, wages, transformational initiative costs and intangible amortization expense. Total gross margin for the year ended October 31, 2021 increased 1 percentage point when compared to 2020. Total gross margin increased due to higher sales volume and favorable product mix which was partially offset by higher wages and variable pay, higher shipping and logistics costs, higher intangible amortization expense and higher share-based compensation expense.

Gross inventory charges were $24 million in 2022, $29 million in 2021 and $28 million in 2020. Sales of previously written down inventory were $11 million in 2022, $8 million in 2021 and $7 million in 2020.

Research and development expenses for the year ended October 31, 2022 increased 6 percent when compared to 2021. Research and development expenses increased due to higher wages and program investments in our diagnostics and genomics segment and in our mass spectrometry business within our our life sciences and applied markets segment, and additional research and development expenses related to the Resolution Bioscience acquisition. Research and development expenses for the year ended October 31, 2021 decreased 11 percent when compared to 2020. Excluding the intangible and other assets impairments recorded in 2020, research and development expenses for the year ended October 31, 2021 increased 11 percent due to increased wages and variable pay, higher program investments in our life sciences and applied markets and diagnostics and genomics businesses, additional expenses related to an acquisition, and higher share-based compensation expense.

Selling, general and administrative expenses increased 1 percent in 2022 when compared to 2021. The increase was due to higher wages, share-based compensation expense and inflationary pressures mostly offset by lower commissions, acquisition and integration costs, variable pay, transformational initiatives and a decrease related to the change in the fair value of contingent consideration. Selling, general and administrative expenses increased 8 percent in 2021 compared to 2020. The increase was due to higher wages and variable pay, higher commissions and higher share-based compensation expense partially offset by a decrease related to the change in the fair value of an acquisition-related contingent consideration, lower legal costs and lower transformational initiatives expenses.

Total operating margin for the year ended October 31, 2022 increased 2 percentage points when compared to 2021. Operating margin increased due to higher sales volume, increased gross margin, lower commissions and variable pay partially offset by increases in wages, share-based compensation expense and inflationary pressures. Total operating margin for the year ended October 31, 2021, increased 6 percentage points when compared to 2020. Operating margin increased due to higher sales volume and increased gross margin partially offset by increases in wages and variable pay, commissions, share-based compensation expense and amortization of intangible assets.

Interest income for the year ended October 31, 2022, 2021 and 2020 was $9 million, $2 million and $8 million, respectively. The increase in interest income in 2022 was primarily due to increases in interest rates for our cash and cash equivalents.

Interest expense for the years ended October 31, 2022, 2021 and 2020 was $84 million, $81 million and $78 million, respectively, and relates to the interest charged on our senior notes, term loan, credit facilities, commercial paper and the amortization of the deferred loss recorded upon termination of the forward starting interest rate swap contracts partially offset by the amortization of deferred gains recorded upon termination of interest rate swap contracts.

At October 31, 2022, our headcount was approximately 18,100 compared to 17,000 in 2021.

Other income (expense), net

For the year ended October 31, 2022, other income (expense), net includes income of $11 million related to the provision of site service costs to, and lease income from, Keysight Technologies, Inc. ("Keysight"). The costs associated with these services are reported within income from operations. Other income (expense), net includes $25 million income related to the defined benefit retirement and post-retirement benefit plans (interest cost, expected return on assets, amortization of net actuarial (gain) loss and settlement loss) offset by the net loss on the fair value of equity securities of approximately $67 million and $9 million loss on extinguishment of debt.

For the year ended October 31, 2021, other income (expense), net includes income of $7 million related to the provision of site service costs to, and lease income from, Keysight. The costs associated with these services are reported within income from operations. Other income (expense), net includes a $17 million loss on extinguishment of debt and net gains on the fair value of equity securities of approximately $98 million.

For the year ended October 31, 2020, other income (expense), net includes income of $12 million related to the provision of site service costs to, and lease income from, Keysight. The costs associated with these services are reported within income from operations. Other income (expense), net also includes net gains on the fair value of equity securities of approximately $27 million and income of $22 million related to the settlement of our legal claim against Twist Bioscience Corporation.

Income Taxes

	Years Ended October 31,		
	2022	2021	2020
		(in millions)	
Provision (benefit) for income taxes	$ 250	$ 150	$ 123

For 2022, our income tax expense was $250 million with an effective tax rate of 16.6 percent. For the year ended October 31, 2022, our effective tax rate and the resulting provision for income taxes were impacted by the tax benefit of $46 million related to foreign-derived intangible income.

For 2021, our income tax expense was $150 million with an effective tax rate of 11 percent. For the year ended October 31, 2021, our effective tax rate and the resulting provision for income taxes were impacted by the discrete benefit of $93 million related to the release of tax reserves in various jurisdictions due to audit settlements and the expiration of statutes of limitations. The income taxes for the year ended October 31, 2021, also include the excess tax benefits from stock-based compensation of $29 million.

For 2020, our income tax expense was $123 million with an effective tax rate of 14.6 percent. For the year ended October 31, 2020, our effective tax rate and the resulting provision for income taxes were impacted by foreign income taxed at lower rates.

We have negotiated a tax holiday in Singapore. The tax holiday provides a lower rate of taxation on certain classes of income and requires various thresholds of investments and employment or specific types of income. In December 2018, the tax holiday in Singapore was renegotiated and extended through 2027. As a result of the incentive, the impact of the tax holiday decreased income taxes by $53 million, $35 million, and $71 million in 2022, 2021, and 2020, respectively. The benefit of the tax holiday on net income per share (diluted) was approximately $0.18, $0.11, and $0.23 in 2022, 2021 and 2020, respectively.

With these jurisdictions and the U.S., it is reasonably possible that there could be significant changes to our unrecognized tax benefits in the next twelve months due to either the expiration of a statute of limitation or a tax audit settlement which will be partially offset by an anticipated tax liability related to unremitted foreign earnings, where applicable. Given the number of years and numerous matters that remain subject to examination in various tax jurisdictions, management is unable to estimate the range of possible changes to the balance of our unrecognized tax benefits.

The calculation of our tax liabilities involves dealing with uncertainties in the application of complex tax law and regulations in a multitude of jurisdictions. Although the guidance on the accounting for uncertainty in income taxes prescribes the use of a recognition and measurement model, the determination of whether an uncertain tax position has met those thresholds will continue to require significant judgment by management. In accordance with the guidance on the accounting for uncertainty in income taxes, for all U.S. and other tax jurisdictions, we recognize potential liabilities for anticipated tax audit issues based on our estimate of whether, and the extent to which, additional taxes and interest will be due. The ultimate resolution of tax uncertainties may differ from what is currently estimated, which could result in a material impact on income tax expense. If our estimate of income tax liabilities proves to be less than the ultimate assessment, a further charge to expense would be required. If events occur and the payment of these amounts ultimately proves to be unnecessary, the reversal of the liabilities would result in tax benefits being recognized in the period when we determine the liabilities are no longer necessary. We include interest and penalties related to unrecognized tax benefits within the provision for income taxes on the consolidated statements of operations.

Segment Overview

In the first quarter of fiscal year 2022, we announced a change in organizational structure designed to enable our growth strategies and strengthen our focus on customers. Our chemistries and supplies business and our remarketed instruments business moved from our Agilent CrossLab business segment to our life sciences and applied markets business segment. We also moved BioTek's service revenue and related cost of sales from our life sciences and applied markets business segment to our Agilent CrossLab business segment. Following this reorganization, we continue to have three business segments (life sciences and applied markets, diagnostics and genomics and Agilent CrossLab), each of which continues to comprise a reportable segment. We began reporting under this new structure with the Quarterly Report on Form 10-Q for the period ended January 31, 2022. Historical financial segment information have been recast to conform to this new presentation in our financial statements and accompanying notes. There was no change to our diagnostics and genomics business segment.

Through October 31, 2022, we have three business segments comprised of the life sciences and applied markets business, diagnostics and genomics business and the Agilent CrossLab business.

Life Sciences and Applied Markets

Our life sciences and applied markets business provides application-focused solutions that include instruments and software that enable customers to identify, quantify and analyze the physical and biological properties of substances and products, as well as enable customers in the clinical and life sciences research areas to interrogate samples at the molecular and cellular level. Key product categories include: liquid chromatography ("LC") systems and components; liquid chromatography mass spectrometry ("LCMS") systems; gas chromatography ("GC") systems and components; gas chromatography mass spectrometry ("GCMS") systems; inductively coupled plasma mass spectrometry ("ICP-MS") instruments; atomic absorption ("AA") instruments; microwave plasma-atomic emission spectrometry ("MP-AES") instruments; inductively coupled plasma optical emission spectrometry ("ICP-OES") instruments; raman spectroscopy; cell analysis plate based assays; flow cytometer; real-time cell analyzer; cell imaging systems; microplate reader; laboratory software for sample tracking; information management and analytics; laboratory automation and robotic systems; dissolution testing; vacuum pumps and measurement technologies. Our consumables portfolio is designed to improve customer outcomes. Most of the portfolio is vendor neutral, meaning Agilent can serve and supply customers regardless of their instrument purchase choices. Solutions range from chemistries to supplies. Key product categories in consumables include GC and LC columns, sample preparation products, custom chemistries, and a large selection of laboratory instrument supplies.

Net Revenue

	Years Ended October 31,			2022 over 2021 Change	2021 over 2020 Change
	2022	2021	2020		
	(in millions)				
Net revenue	$ 4,007	$ 3,663	$ 3,115	9%	18%

Life science and applied markets business revenue in 2022 increased 9 percent compared to 2021. Foreign currency movements had an overall unfavorable impact on revenue growth of 4 percentage points in 2022 when compared to the same period last year. Geographically, revenue increased 11 percent in the Americas with no currency impact, increased 2 percent in Europe with a 7 percentage point unfavorable currency impact and increased 13 percent in Asia Pacific with a 3 percentage point unfavorable currency impact. The increase in Asia Pacific was led by strong demand in liquid chromatography systems in China. In 2022, revenue growth was driven by strong growth in liquid chromatography, spectroscopy products and consumables portfolio when compared to the same period last year.

End market revenue performance in 2022 was mixed with pharmaceutical, chemicals and advanced materials markets and diagnostics and clinical market delivering strong revenue growth, food and environmental and forensics delivering modest revenue growth while academia and government remained relatively flat when compared to the same period last year. Revenue growth in the pharmaceutical market was primarily driven by our liquid chromatography, cell analysis and consumables businesses. Revenue growth in the chemicals and advanced materials market was mainly driven by strength in our gas chromatography and spectroscopy portfolio as compared to the same period last year. The academia and government market revenue growth was relatively flat with strength in our liquid chromatography and gas chromatography mass spectrometry businesses offset by other product categories when compared to the same period last year.

Life science and applied markets business revenue in 2021 increased 18 percent compared to 2020. Foreign currency movements for 2021 had an overall favorable impact on revenue growth of 3 percentage points when compared to 2020. Acquisitions had an overall favorable impact on revenue growth of 8 percentage points when compared to 2020. Geographically, revenue increased 20 percent in the Americas with a 1 percentage point favorable currency impact, increased 20 percent in Europe with a 5 percentage point favorable currency impact and increased 15 percent in Asia Pacific with a 3 percentage point favorable currency impact. In 2021, revenue increases were broad based across our portfolio driven primarily by liquid chromatography, liquid chromatography mass spectrometry, cell analysis, spectroscopy products and our consumables portfolio when compared to 2020.

End market revenue performance in 2021 was strong with all end markets (pharmaceutical, chemicals and advanced materials, diagnostics and clinical, food, academia and government and environmental and forensic market) delivering strong results when compared to the same period last year. The revenue growth in the pharmaceutical end market was driven by liquid chromatography, liquid chromatography mass spectrometry, cell analysis products and our consumables portfolio led by broad based strength across all regions. Revenue growth in the chemicals and advanced materials market was mainly driven by strength in spectroscopy, vacuum, consumables, gas chromatography, and gas chromatography mass spectrometry products with broad based strength across regions. Revenue growth in the food and diagnostics and clinical markets was across all products and regions. Revenue growth in the academia and government end market was driven by strong growth in cell analysis and consumables portfolio. Revenue growth in the environmental and forensics market was driven by strong growth in vacuum products and consumables portfolio as compared to the same period last year.

Looking forward, despite supply chain and inflationary pressures and COVID-19 uncertainties, we are optimistic about our long-term growth opportunities in the life sciences and applied markets as our broad portfolio of products and solutions are well suited to address customer needs. While we anticipate volatility in our markets, we expect continued growth across most end markets in the long term from our new product introductions and acquisitions in the last couple of years as we continue to invest in expanding and improving our applications and solutions portfolio.

Gross Margin and Operating Margin

The following table shows the life sciences and applied markets business' margins, expenses and income from operations for 2022 versus 2021, and 2021 versus 2020.

	Years Ended October 31,			2022 over 2021 Change	2021 over 2020 Change
	2022	2021	2020		
(in millions, except margin data)					
Total gross margin	60.2 %	60.2 %	59.6 %	—	1 ppt.
Research and development	$ 293	$ 272	$ 244	8%	11%
Selling, general and administrative	$ 933	$ 915	$ 820	2%	11%
Operating margin	29.6 %	27.8 %	25.4 %	2 ppts.	2 ppts.
Income from operations	$ 1,186	$ 1,017	$ 792	17%	28%

Gross margin was flat in 2022 compared to 2021. Gross margin was impacted by higher materials and logistics costs which were fully offset by price increases, higher sales volume and favorable cash flow hedging gains. Gross margin increased 1 percentage point in 2021 compared to 2020. Gross margin was favorably impacted by higher sales volume which was partially offset by higher wage and variable pay, higher material costs and unfavorable currency impact and cash flow hedging losses.

Research and development expenses increased 8 percent in 2022 when compared to 2021. Research and development expenses increased due to higher wages and program investments in our mass spectrometry and cell analysis businesses. Research and development expenses increased 11 percent in 2021 when compared to 2020. Research and development expenses increased due to higher wage and variable pay, higher program investments in informatics and cell analysis, unfavorable currency impact and higher share-based compensation expense.

Selling, general and administrative expenses increased 2 percent in 2022 compared to 2021. Selling, general and administrative expenses increased due to higher wages and marketing expenses partially offset by lower commissions, variable pay and favorable currency movements when compared to same period last year. Selling, general and administrative expenses increased 11 percent in 2021 compared to 2020. Selling, general and administrative expenses increased due to higher wages and variable pay, higher commissions, higher share-based compensation expense and unfavorable currency movements.

Operating margin increased 2 percentage points in 2022 compared to 2021. Operating margin was impacted by higher sales volume and favorable currency movements on expenses partially offset by higher wages, material and logistics costs. Operating margin increased 2 percentage points in 2021 compared to 2020. Operating margin increased due to higher sales volume and favorable impact of currency on revenue which was partially offset by higher wages and variable pay, unfavorable impact of currency on expenses and higher share-based compensation.

Income from Operations

Income from operations in 2022 increased by $169 million or 17 percent when compared to 2021 on a revenue increase of $344 million. The increase in income from operations was primarily due to higher sales volume. Income from operations in 2021 increased by $225 million or 28 percent when compared to 2020 on a revenue increase of $548 million. The increase in income from operations was primarily due to higher sales volume.

Diagnostics and Genomics

Our diagnostics and genomics business includes the genomics, nucleic acid contract manufacturing and research and development, pathology, companion diagnostics, reagent partnership and biomolecular analysis businesses.

Our diagnostics and genomics business is comprised of six areas of activity providing active pharmaceutical ingredients ("APIs") for oligo-based therapeutics as well as solutions that include reagents, instruments, software and consumables, which enable customers in the clinical and life sciences research areas to interrogate samples at the cellular and molecular level. First, our genomics business includes arrays for DNA mutation detection, genotyping, gene copy number determination, identification of gene rearrangements, DNA methylation profiling, gene expression profiling, as well as next generation sequencing ("NGS") target enrichment and genetic data management and interpretation support software. This business also

includes solutions that enable clinical labs to identify DNA variants associated with genetic disease and help direct cancer therapy. Second, our nucleic acid solutions business is a contract and development manufacturing organization that provides services related to and the production of synthesized oligonucleotides under pharmaceutical good manufacturing practices ("GMP") conditions for use as API in a class of drugs that utilize nucleic acid molecules for disease therapy. Third, our pathology solutions business is focused on product offerings for cancer diagnostics and anatomic pathology workflows. The broad portfolio of offerings includes immunohistochemistry ("IHC"), in situ hybridization ("ISH"), hematoxylin and eosin ("H&E") staining and special staining. Fourth, we also collaborate with a number of major pharmaceutical companies to develop new potential tissue and liquid-based pharmacodiagnostics, also known as companion diagnostics, which may be used to identify patients most likely to benefit from a specific targeted therapy. Fifth, the reagent partnership business provides clinical flow cytometry reagents for routine cancer diagnostics. This business also provides bulk antibodies as raw materials and associated assay development services to IVD manufacturers, biotechnology and pharmaceutical companies. Finally, our biomolecular analysis business provides complete workflow solutions, including instruments, consumables and software, for quality control analysis of nucleic acid samples. Samples are analyzed using quantitative and qualitative techniques to ensure accuracy in further genomics analysis techniques including NGS, utilized in clinical and life science research applications.

Net Revenue

	Years Ended October 31,			2022 over 2021 Change	2021 over 2020 Change
	2022	2021	2020		
	(in millions)				
Net revenue	$ 1,389	$ 1,296	$ 1,047	7%	24%

Diagnostics and genomics business revenue increased 7 percent in 2022 compared to 2021. Foreign currency movements for 2022 had an overall unfavorable impact on revenue growth of 4 percentage points when compared to the same period last year. Geographically, revenue increased 13 percent in the Americas with no currency impact, decreased 1 percent in Europe with a 7 percentage point unfavorable currency impact and increased 6 percent in Asia Pacific with a 7 percentage point unfavorable currency impact. The increase in the Americas was driven by strong performance in our nucleic acid solutions, biomolecular analysis, reagent partnership and genomics portfolios. In Europe, the 7 percentage point unfavorable impact of currency on revenue was partially offset by revenue growth in our reagent partnership, pathology and companion diagnostics businesses. Revenue growth in Asia Pacific was primarily driven by an increase in China as well as a strong performance across our entire portfolio.

In 2022, revenue performance in the pharmaceutical market was led by double-digit revenue growth in our nucleic acid solutions and single digit growth in biomolecular analysis and genomics businesses. We also saw moderate revenue growth in diagnostics and clinical and academia and government markets led by our biomolecular analysis, pathology, genomics and reagent partnership businesses when compared to the same period last year.

Diagnostics and genomics business revenue in 2021 increased 24 percent compared to 2020. Foreign currency movements had an overall favorable impact on revenue growth of 3 percentage points in 2021 when compared to 2020. Geographically, revenue increased 35 percent in the Americas with a 1 percentage point favorable currency impact, increased 12 percent in Europe with a 5 percentage point favorable currency impact and increased 16 percent in Asia Pacific with a 2 percentage point favorable currency impact. The increase in the Americas was driven by strong performance in our nucleic acid solutions and genomics portfolios. In Europe, we saw strong demand for our genomics solutions as well as an increase in our companion diagnostics and pathology businesses. In Asia Pacific, revenue growth was driven by our pathology and genomics product portfolios.

In 2021, revenue performance in the diagnostics and genomics business was led by double-digit revenue growth in our nucleic acid solutions, pathology and genomics businesses. The broad-based growth in the genomics product portfolio was driven by our next generation sequencing quality control product portfolio. Pathology testing volume returning to pre-pandemic levels drove strong growth throughout all pathology product families. All key end markets had revenue increases when compared to 2020.

Looking forward, we are optimistic about our long-term growth opportunities in our end markets and continue to invest in expanding and improving our applications and solutions portfolio. We remain positive about our growth in our end markets as our product portfolio around OMNIS and PD-L1 assays continues to gain strength with our customers in clinical oncology applications, and our next generation sequencing target enrichment solutions continue to be adopted. Market demand in the nucleic acid solutions business related to therapeutic oligo programs continues, and with the planned extension of our nucleic

acid solutions production facility in Frederick, Colorado, we are well positioned to serve more of the market demand. We are expanding our capabilities in NGS-based cancer diagnostics and will provide innovative technology to further serve the needs of the fast-growing precision medicine market. We will continue to invest in research and development and seek to expand our position in developing countries and emerging markets.

Gross Margin and Operating Margin

The following table shows the diagnostics and genomics business' margins, expenses and income from operations for 2022 versus 2021, and 2021 versus 2020.

	Years Ended October 31,			2022 over 2021 Change	2021 over 2020 Change
	2022	2021	2020		
(in millions, except margin data)					
Total gross margin	53.5 %	52.8 %	51.9 %	1 ppt.	1 ppt.
Research and development	$ 138	$ 128	$ 114	8%	12%
Selling, general and administrative	$ 303	$ 283	$ 238	7%	19%
Operating margin	21.7 %	21.0 %	18.3 %	1 ppt.	3 ppts.
Income from operations	$ 301	$ 273	$ 192	10%	42%

Gross margin increased 1 percentage point in 2022 when compared to 2021. Gross margin increased due to higher sales volume offsetting the higher wages and logistics costs. Gross margin increased 1 percentage point in 2021 when compared to 2020. Gross margin increased due to higher sales volume more than offsetting higher wages, variable pay, inventory charges and logistics expenses.

Research and development expenses increased 8 percent in 2022 when compared to 2021. Research and development expenses increased primarily due to higher wages and additional expenses related to the Resolution Bioscience acquisition and higher program investments related to satisfying regulatory requirements such as the EU IVDR guidelines. Research and development expenses increased 12 percent in 2021 when compared to 2020. Research and development expenses included higher program investments related to satisfying regulatory requirements such as the EU IVDR guidelines, wages and variable pay, and additional expenses related to our acquisition which were partially offset by the shutdown of the sequencer development program in 2020.

Selling, general and administrative expenses increased 7 percent in 2022 when compared to 2021. Selling general and administrative expenses increased due to higher wages and additional expenses related to the Resolution Bioscience acquisition and inflationary pressures partially offset by lower commissions and favorable currency movements. Selling, general and administrative expenses increased 19 percent in 2021 when compared to 2020. Selling, general and administrative expenses increased due to higher commissions, share based compensation expenses, higher wages and variable pay.

Operating margin increased 1 percentage point in 2022 when compared to 2021. The increase in operating margin resulted from higher revenue growth and gross margins, which offset the increase in wages, inflationary pressures, logistics costs and program investments. Operating margin increased 3 percentage points in 2021 when compared to 2020. Operating margin improved as revenue growth more than offset the increase in commissions, wages and variable pay.

Income from Operations

Income from operations in 2022 increased by $28 million or 10 percent when compared to 2021 on a revenue increase of $93 million. Income from operations increased due to higher revenue and gross margin improvement partially offset by higher wages, logistics costs and program investments. Income from operations in 2021 increased by $81 million or 42 percent when compared to 2020 on a revenue increase of $249 million. Income from operations increased due to strong sales performance.

Agilent CrossLab

The Agilent CrossLab business spans the entire lab with its extensive services portfolio, which is designed to improve customer outcomes. The majority of the portfolio is vendor neutral, meaning we can serve and supply customers regardless of their instrument purchase choices. The services portfolio includes repairs, parts, maintenance, installations, training, compliance

support, software as a service, asset management, consulting and various other custom services to support the customers' laboratory operations. Custom services are tailored to meet the specific application needs of various industries and to keep instruments fully operational and compliant with the respective industry requirements.

Net Revenue

	Years Ended October 31,			2022 over 2021 Change	2021 over 2020 Change
	2022	2021	2020		
	(in millions)				
Total net revenue	$ 1,452	$ 1,360	$ 1,177	7%	16%

Agilent CrossLab business revenue increased 7 percent in 2022 when compared to 2021. Foreign currency movements for 2022 had an overall unfavorable impact on revenue growth of 4 percentage points when compared to 2021. Geographically, revenue increased 11 percent in the Americas with no currency impact, increased 1 percent in Europe with a 9 percentage point unfavorable currency impact and increased 7 percent in Asia Pacific with a 5 percentage point unfavorable currency impact. During the year ended October 31, 2022, revenue growth in all three regions was driven by contract repair services, compliance services, installation services and consultative services.

Agilent CrossLab business revenue increased 16 percent in 2021 when compared to 2020. Foreign currency movements had an overall favorable impact on revenue growth of 4 percentage points in 2021 when compared to 2020. Geographically, revenue increased 14 percent in the Americas with no currency impact, increased 16 percent in Europe with a 6 percentage point favorable currency impact and increased 17 percent in Asia Pacific with a 4 percentage point favorable currency impact. The strong growth across the regions reflected consistently high demand for services across the entire product portfolio and end markets. Revenue growth also reflected weakened sales in 2020 when many of our customers closed their sites or reduced their operating capacity in response to the COVID-19 pandemic.

Looking forward, Agilent CrossLab services are well positioned to continue their success in our key end markets by supporting a growing installed base of instruments. Digital and remote capabilities will continue to be a key factor in improving the service quality and the experience to customers. Geographically, the business is well diversified across all regions to take advantage of local market opportunities and to hedge against weakness in any one region.

Gross Margin and Operating Margin

The following table shows the Agilent CrossLab business' margins, expenses and income from operations for 2022 versus 2021 and 2021 versus 2020.

	Years Ended October 31,			2022 over 2021 Change	2021 over 2020 Change
	2022	2021	2020		
(in millions, except margin data)					
Total gross margin	47.6 %	46.8 %	46.9 %	1 ppt.	—
Research and development	$ 32	$ 34	$ 33	(5)%	4%
Selling, general and administrative	$ 288	$ 279	$ 247	3%	13%
Operating margin	25.5 %	23.8 %	23.1 %	2 ppts.	1 ppt.
Income from operations	$ 370	$ 323	$ 272	15%	19%

Gross margin increased 1 percentage point in 2022 when compared to 2021. Gross margin was impacted by higher sales volume and targeted price increases that improved margins, which were partially offset by higher wages and service delivery costs for logistics and parts. Gross margin was relatively flat in 2021 when compared to 2020. Higher volumes and targeted price increases did help elevate margins, but those benefits were offset by higher service delivery costs, higher variable pay and higher cash flow hedging losses.

Research and development expenses decreased 5 percent in 2022 when compared to 2021. Research and development expenses decreased mainly due to cost efficiencies in certain research and development projects which led to lower expenditures. Research and development expenses increased 4 percent in 2021 when compared to 2020. Research and

development investment within the Agilent CrossLab business increased due to higher wages and a continued focus on digital service offerings.

Selling, general and administrative expenses increased 3 percent in 2022 when compared to 2021.The increase was due to higher wages, share-based compensation expense and inflationary pressures mostly offset by lower commissions, variable pay, and favorable currency movements. Selling, general and administrative expenses increased 13 percent in 2021 when compared to 2020. Selling, general and administrative expenses increased due to higher wages and variable pay, sales commissions and share-based compensation expense.

Operating margin increased 2 percentage points in 2022 when compared to 2021. Operating margin increased mostly driven by higher sales volume with improved gross margins and higher cash flow hedging gains. Operating margin increased 1 percentage point in 2021 when compared to 2020. Operating margin grew slightly in 2021 due to higher sales volume offset by higher wages and variable pay, higher service delivery costs and cash flow hedging losses.

Income from Operations

Income from operations in 2022 increased by $47 million or 15 percent when compared to 2021 on a revenue increase of $92 million. Income from operations increased primarily due to higher sales volume. Income from operations in 2021 increased by $51 million or 19 percent when compared to 2020 on a revenue increase of $183 million. Income from operations increased primarily due to higher sales offset by higher spending.

Financial Condition

Liquidity and Capital Resources

We believe our cash and cash equivalents, cash generated from operations, and ability to access capital markets and credit lines will satisfy, for at least the next twelve months and beyond, our liquidity requirements, both globally and domestically, including the following: working capital needs, capital expenditures, business acquisitions, stock repurchases, cash dividends, contractual obligations, commitments, principal and interest payments on debt, and other liquidity requirements associated with our operations.

Our financial position as of October 31, 2022 consisted of cash and cash equivalents of $1,053 million as compared to $1,484 million as of October 31, 2021.

We may, from time to time, retire certain outstanding debt of ours through open market cash purchases, privately-negotiated transactions or otherwise. Such transactions, if any, will depend on prevailing market conditions, our liquidity requirements, contractual restrictions and other factors.

Net Cash Provided by Operating Activities

Net cash provided by operating activities was $1,312 million in 2022 as compared to $1,485 million provided in 2021 and $921 million provided in 2020. Net cash paid for income taxes was approximately $279 million in 2022 compared to income taxes paid of $211 million in 2021 and $361 million, which included a one-time payment of $231 million related to the transfer of intellectual property, in 2020. For the years ended October 31, 2022, 2021 and 2020, other assets and liabilities used cash of $8 million, $14 million and $182 million, respectively. The cash outflow in the year ended October 31, 2020 was largely the result of increased income tax payments, interest payments on senior notes and changes in deferred revenue.

In 2022, accounts receivable used cash of $321 million, compared to $128 million in 2021, and $107 million in 2020. Days' sales outstanding as of October 31, were 68 days in 2022, 64 days in 2021 and 63 days in 2020. The increase in accounts receivable related to the transitory impacts of shutdowns in China. In addition, we had a change in the mix of unbilled receivables primarily due to our nucleic acid solutions business, which has a longer cash conversion cycle. The change in accounts payable provided cash of $121 million in 2022, $64 million in 2021 and $2 million in 2020. Cash used in inventory was $248 million in 2022, $136 million in 2021 and $68 million in 2020. Inventory days on-hand increased to 112 days in 2022 compared to 98 days in 2021 and increased compared to 93 days in 2020. In the years ended October 31, 2022 and 2021, we increased our inventory levels to meet our customer needs and to compensate for long lead time in ordering from our suppliers.

The employee compensation and benefits liability used cash of $22 million for the year ended October 31, 2022, compared to cash provided of $112 million in 2021 and $29 million in 2020. In 2022, the change was primarily due to higher variable and incentive payments and a reduction in the employee vacation liability compared to 2021. In 2021, the change was

largely due to an increase in the vacation liability and variable and incentive pay liability compared to 2020. We paid approximately $201 million in 2022 under our variable and incentive pay programs compared to $119 million in 2021 and $79 million in 2020.

We made no contributions to our U.S defined benefit plans in 2022, 2021 and 2020. We contributed $17 million in 2022 and $19 million in 2021 and $31 million in 2020 to our non-U.S. defined benefit plans, respectively. We did not contribute to our U.S. post-retirement benefit plans in 2022, 2021 and 2020. Our non-U.S. defined benefit plans are generally funded ratably throughout the year. The higher contribution in 2020 mainly related to $12 million additional contribution in the Netherlands. Our annual contributions are highly dependent on the relative performance of our assets versus our projected liabilities, among other factors. We do not expect to contribute to our U.S. plans and U.S. post-retirement benefit plans during 2023. We expect to contribute $16 million to our non-U.S. defined benefit plans during 2023.

Net Cash Used in Investing Activities

Net cash used in investing activities in 2022 was $338 million and in 2021 was $749 million as compared to net cash used of $147 million in 2020.

Investments in property, plant and equipment were $291 million in 2022, $188 million in 2021 and $119 million in 2020. The increase in our investments in property plant and equipment is primarily due to the planned extension of our nucleic acid solutions production facility in Frederick, Colorado. Our anticipated capital expenditures for fiscal year 2023 will be approximately $300 million. In 2022, we invested $52 million in a business and intangible assets, net of cash acquired for our acquisition of Polymer Standards Service and advanced artificial intelligence technology compared to $547 million primarily related to the acquisition of Resolution Bioscience in 2021 and zero in 2020. In 2022 cash used to purchase fair value investments was $13 million compared to $22 million outlay in 2021 and $20 million in 2020.

Net Cash Used in Financing Activities

Net cash used in financing activities in 2022 was $1,372 million compared to $696 million in 2021 and $717 million in 2020.

Treasury Stock Repurchases

2019 Repurchase Program. During the year ended October 31, 2020, we repurchased and retired 5.2 million shares for $469 million under the 2019 repurchase program authorization. During the year ended October 31, 2021, we repurchased and retired 3.1 million shares for $365 million under this authorization. Effective February 18, 2021, the 2019 repurchase program was terminated and replaced by the 2021 repurchase program. The remaining authorization under the 2019 repurchase plan of $193 million expired on February 18, 2021.

2021 Repurchase Program. During the year ended October 31, 2021, we repurchased and retired 3.0 million shares for $423 million under the 2021 repurchase program authorization. During the year ended October 31, 2022, we repurchased and retired 8.4 million shares for $1,139 million under this authorization. As of October 31, 2022, we had remaining authorization to repurchase up to approximately $438 million of our common stock under the 2021 repurchase program.

Dividends

For the years ended October 31, 2022, 2021 and 2020 cash dividends of $250 million, $236 million and $222 million were paid on the company's outstanding common stock, respectively. On November 16, 2022 we declared a quarterly dividend of $0.225 per share of common stock, or approximately $66 million which will be paid on January 25, 2023 to shareholders of record as of the close of business on January 3, 2023. The timing and amounts of any future dividends are subject to determination and approval by our board of directors.

Credit Facilities

On March 13, 2019, we entered into a credit agreement with a group of financial institutions which, as amended, provides for a $1 billion five-year unsecured credit facility that will expire on March 13, 2024 and incremental term loan facilities in an aggregate amount of up to $500 million. On April 21, 2021, we entered into an incremental assumption agreement, pursuant to which the aggregate amount available for borrowing under the revolving credit facility was increased to $1.35 billion, and the aggregate amount available for incremental facilities was refreshed to remain at $500 million.

As of both October 31, 2022 and 2021, we had no borrowings outstanding under the credit facility and we had no borrowings outstanding under the incremental facilities. We were in compliance with the covenants for the credit facility during the year ended October 31, 2022.

Commercial Paper

Under our U.S. commercial paper program, we may issue and sell unsecured, short-term promissory notes in the aggregate principal amount not to exceed $1.35 billion with up to 397-day maturities. At any point in time, the company intends to maintain available commitments under its revolving credit facility in an amount at least equal to the amount of the commercial paper notes outstanding. Amounts available under the program may be borrowed, repaid and re-borrowed from time to time. The proceeds from issuances under the program may be used for general corporate purposes. As of October 31, 2022, we had borrowings of $35 million outstanding under our U.S. commercial paper program and had a weighted average annual interest rate of 3.54 percent. As of October 31, 2021, we had no borrowings outstanding under the U.S. commercial paper program.

Long-term Debt

Term Loan Facility

On April 15, 2022, we entered into a term loan agreement with a group of financial institutions, which provided for a $600 million delayed draw term loan that will mature on April 15, 2025. As of October 31, 2022, we had $600 million borrowings outstanding under the term loan facility and had a weighted average interest rate of 3.98 percent. Loans under the term loan agreement bear interest, at our option, either at: (i) the alternate base rate, as defined in the term loan agreement, plus the applicable margin for such loans or (ii) adjusted term SOFR, as defined in the term loan agreement, plus the applicable margin for such loans. The term loan agreement contains customary representations and warranties as well as customary affirmative and negative covenants. We were in compliance with the covenants for the term loan during the year ended October 31, 2022.

2023 Senior Notes

On June 21, 2013, the company issued aggregate principal amount of $600 million in senior notes ("2023 senior notes"). The 2023 senior notes were issued at 99.544% of their principal amount. The notes would have matured on July 15, 2023 with a fixed interest rate of 3.875% per annum. We paid interest semi-annually on January 15th and July 15th of each year and payments commenced January 15, 2014.

On May 4, 2022, we used the proceeds from the term loan facility and repaid the $600 million outstanding aggregate principal amount of our 2023 senior notes. The total redemption price of approximately $609 million was computed in accordance with the terms of the 2023 senior notes as the present value of the remaining scheduled payments of principal and unpaid interest on the notes being redeemed. In May 2022, we recorded a loss on extinguishment of debt of $9 million in other income (expense), net in the consolidated statement of operations. In addition, $7 million of accrued interest, up to but not including the applicable redemption date, was paid.

2026 Senior Notes

On September 22, 2016, the company issued aggregate principal amount of $300 million in senior notes ("2026 senior notes"). The 2026 senior notes were issued at 99.624% of their principal amount. The notes will mature on September 22, 2026 and bear interest at a fixed rate of 3.05% per annum. The interest is payable semi-annually on March 22nd and September 22nd of each year and payments commenced March 22, 2017.

In February 2016, Agilent executed three forward-starting pay fixed/receive variable interest rate swaps for the notional amount of $300 million in connection with future interest payments to be made on our 2026 senior notes issued on September 15, 2016. The swap arrangements were terminated on September 15, 2016 with a payment of $10 million, and we recognized this as a deferred loss in accumulated other comprehensive income (loss) which is being amortized to interest expense over the life of the 2026 senior notes. The remaining loss to be amortized related to the interest rate swap agreements at October 31, 2022 was $4 million.

2029 Senior Notes

On September 16, 2019, the company issued an aggregate principal amount of $500 million in senior notes ("2029 senior notes"). The 2029 senior notes were issued at 99.316% of their principal amount. The notes will mature on September 15, 2029, and bear interest at a fixed rate of 2.75% per annum. The interest is payable semi-annually on March 15th and September 15th of each year and payments commenced on March 15, 2020.

In August 2019, Agilent executed treasury lock agreements for $250 million in connection with future interest payments to be made on our 2029 senior notes issued on September 16, 2019. We designated the treasury lock as a cash flow hedge. The treasury lock contracts were terminated on September 6, 2019 and we recognized a deferred loss of $6 million in accumulated other comprehensive income (loss) which is being amortized to interest expense over the life of the 2029 senior notes. The remaining loss to be amortized related to the treasury lock agreements at October 31, 2022 was $4 million.

2030 Senior Notes

On June 4, 2020, we issued an aggregate principal amount of $500 million in senior notes ("2030 senior notes"). The 2030 senior notes were issued at 99.812% of their principal amount. The 2030 senior notes will mature on June 4, 2030, and bear interest at a fixed rate of 2.10% per annum. The interest is payable semi-annually on June 4th and December 4th of each year and payments commenced on December 4, 2020.

2031 Senior Notes

On March 12, 2021, we issued an aggregate principal amount of $850 million in senior notes ("2031 senior notes"). The 2031 senior notes were issued at 99.822% of their principal amount. The 2031 senior notes will mature on March 12, 2031, and bear interest at a fixed rate of 2.30% per annum. The interest is payable semi-annually on March 12th and September 12th of each year and payments commenced on September 12, 2021.

Off Balance Sheet Arrangements and Other

Our liquidity is affected by many factors, some of which are based on normal ongoing operations of our business and some of which arise from fluctuations related to global economics and markets. Our cash balances are generated and held in many locations throughout the world. Local government regulations may restrict our ability to move cash balances to meet cash needs under certain circumstances. We do not currently expect such regulations and restrictions to impact our ability to pay vendors and conduct operations throughout our global organization.

Contractual Commitments

Our cash flows from operations are dependent on a number of factors, including fluctuations in our operating results, accounts receivable collections, inventory management, and the timing of tax and other payments. As a result, the impact of contractual obligations on our liquidity and capital resources in future periods should be analyzed in conjunction with such factors.

The following table summarizes our total contractual obligations at October 31, 2022, for Agilent operations and excludes amounts recorded in our consolidated balance sheet (in millions):

	Less than one year	One to three years	Three to five years	More than five years
Commitments to contract manufacturers and suppliers	$ 1,027	$ 16	$ —	$ —
Other purchase commitments	139	—	—	—
Retirement plans	16	—	—	—
Total	$ 1,182	$ 16	$ —	$ —

Commitments to Contract Manufacturers and Suppliers. We purchase components from a variety of suppliers and use several contract manufacturers to provide manufacturing services for our products. During the normal course of business, we issue purchase orders with estimates of our requirements several months ahead of the delivery dates. The above amounts represent the commitments under the open purchase orders with our suppliers that have not yet been received. However, our agreements with these suppliers usually provide us the option to cancel, reschedule, and adjust our requirements based on our

business needs prior to firm orders being placed. We expect to fulfill most of our purchase commitments for inventory within one year.

Other Purchase Commitments. We have categorized "other purchase commitments" related to contracts with professional services suppliers. Typically, we can cancel contracts with professional services suppliers without penalties. For those contracts that are not cancelable without penalties, there are termination fees and costs or commitments for continued spending that we are obligated to pay to a supplier under each contact's termination period before such contract can be cancelled. Our contractual obligations with these suppliers under "other purchase commitments" were approximately $139 million.

Retirement Plans. Commitments under the retirement plans relate to expected contributions to be made to our U.S. and non-U.S. defined benefit plans and to our post-retirement medical plans for the next year only. Contributions after next year are impractical to estimate. Effective May 1, 2016 through April 30, 2022, we provided an additional transitional company contribution for certain eligible employees equal to 3 percent, 4 percent or 5 percent of an employee's annual eligible compensation due to the U.S. Retirement Plan benefits being frozen.

We had no material off-balance sheet arrangements as of October 31, 2022, or October 31, 2021.

On Balance Sheet Arrangements

The following table summarizes our total contractual obligations on our October 31, 2022 balance sheet (in millions):

	Less than one year	One to three years	Three to five years	More than five years
Senior notes	$ —	$ —	$ 300	$ 1,850
Term Loan	—	600	—	—
Commercial paper	35	—	—	—
Interest expense	80	146	97	127
Transition tax	7	68	49	—
Operating leases	53	56	18	40
Total	$ 175	$ 870	$ 464	$ 2,017

Other long-term liabilities as of October 31, 2022 and October 31, 2021 include $216 million and $241 million, respectively, related to long-term income tax liabilities. Of these amounts, $99 million and $117 million related to uncertain tax positions as of October 31, 2022 and October 31, 2021, respectively. We are unable to accurately predict when these amounts will be realized or released. However, it is reasonably possible that there could be significant changes to our unrecognized tax benefits in the next twelve months due to either the expiration of a statute of limitations or a tax audit settlement. As of October 31, 2022, the remaining $117 million included in other long-term liabilities relates to the U.S. transition tax payment which is due in installments over the next four years.

Item 7A. ***Quantitative and Qualitative Disclosures About Market Risk***

We are exposed to foreign currency exchange rate risks inherent in our sales commitments, anticipated sales, and assets and liabilities and equity denominated in currencies other than the functional currency of our subsidiaries. We hedge future cash flows denominated in currencies other than the functional currency using sales forecasts up to twelve months in advance. Our exposure to exchange rate risks is mainly managed on an enterprise-wide basis. This strategy utilizes derivative financial instruments, including option and forward contracts, to hedge certain foreign currency exposures with the intent of offsetting gains and losses that occur on the underlying exposures with gains and losses on the derivative contracts hedging them. We may also hedge equity balances denominated in foreign currency on a long-term basis. We do not currently and do not intend to utilize derivative financial instruments for speculative trading purposes. To the extent that we are required to pay for all, or portions, of an acquisition price in foreign currencies, we may enter into foreign exchange contracts to reduce the risk that currency movements will impact the cost of the transaction.

Our operations generate non-functional currency cash flows such as revenues, third party vendor payments and inter-company payments. In anticipation of these foreign currency cash flows and in view of volatility of the currency market, we enter into such foreign exchange contracts as are described above to manage our currency risk. Approximately 56 percent of our revenue in 2022, 53 percent of our revenue in 2021 and 52 percent of our revenue in 2020 was generated in U.S. dollars. The overall unfavorable effect of changes in foreign currency exchange rates, principally as a result of the strength of the U.S.

dollar, has decreased revenue by approximately 4 percentage points in the year ended October 31, 2022. We calculate the impact of movements in foreign currency exchange rates by applying the actual foreign currency exchange rates in effect during the last month of each quarter of the current year to both the applicable current and prior year periods.

We performed a sensitivity analysis assuming a hypothetical 10 percent adverse movement in foreign exchange rates to the hedging contracts and the underlying exposures described above. As of October 31, 2022 and 2021, the analysis indicated that these hypothetical market movements would not have a material effect on our consolidated financial position, results of operations, statement of comprehensive income or cash flows.

We are also exposed to interest rate risk due to the mismatch between the interest expense we pay on our loans at fixed rates and the variable rates of interest we receive from cash, cash equivalents and other short-term investments. We have issued long-term debt in U.S. dollars or foreign currencies at fixed interest rates based on the market conditions at the time of financing. We believe that the fair value of our fixed rate debt changes when the underlying market rates of interest change, and we may use interest rate swaps to modify such market risk.

We performed a sensitivity analysis assuming a hypothetical 10 percent adverse movement in interest rates relating to the underlying fair value of our fixed rate debt. As of October 31, 2022 and 2021, the sensitivity analyses indicated that a hypothetical 10 percent adverse movement in interest rates would result in an immaterial impact to the fair value of our fixed interest rate debt.

Item 8. ***Financial Statements and Supplementary Data***

Index to Consolidated Financial Statements

REPORT OF INDEPENDENT REGISTERED PUBLIC ACCOUNTING FIRM

To the Board of Directors and Stockholders of Agilent Technologies, Inc.

Opinions on the Financial Statements and Internal Control over Financial Reporting

We have audited the accompanying consolidated balance sheets of Agilent Technologies, Inc. and its subsidiaries (the "Company") as of October 31, 2022 and 2021, and the related consolidated statements of operations, of comprehensive income, of equity and of cash flows for each of the three years in the period ended October 31, 2022, including the related notes and schedule of valuation and qualifying accounts for each of the three years in the period ended October 31, 2022 appearing under Item 15(a)(2) (collectively referred to as the "consolidated financial statements"). We also have audited the Company's internal control over financial reporting as of October 31, 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 October 31, 2022 and 2021, and the results of its operations and its cash flows for each of the three years in the period ended October 31, 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 October 31, 2022, based on criteria established in Internal Control - Integrated Framework (2013) issued by the COSO.

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.

Uncertain Tax Positions

As described in Note 5 to the consolidated financial statements, the Company has recorded liabilities for uncertain tax positions of $144 million as of October 31, 2022. As disclosed by management, the estimate of the Company's tax liabilities relating to uncertain tax positions requires management to assess uncertainties and to make judgments about the application of complex tax law and regulations in a multitude of jurisdictions. The Company is subject to taxes in the U.S., Singapore and various other foreign jurisdictions and is subject to examinations of its tax returns by tax authorities in various jurisdictions around the world. The Company has a number of years and matters which remain subject to examination by tax authorities in various jurisdictions that could result in significant changes to unrecognized tax benefits due to either the expiration of a statute of limitation or a tax audit settlement which will be partially offset by an anticipated tax liability related to unremitted foreign earnings, where applicable.

The principal considerations for our determination that performing procedures relating to uncertain tax positions is a critical audit matter are the significant judgment by management when determining uncertain tax positions, including a high degree of estimation uncertainty relative to the numerous and complex tax laws, tax audits, and potential for significant adjustments as a result of such audits. This in turn led to a high degree of auditor judgment, effort, and subjectivity in performing procedures to evaluate the timely identification and accurate measurement of uncertain tax positions. Also, the evaluation of audit evidence available to support the tax liabilities for uncertain tax positions is complex and required significant auditor judgment as the nature of the evidence is often highly subjective.

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 the identification and recognition of the liability for uncertain tax positions, and controls addressing completeness of the uncertain tax positions, as well as controls over measurement of the liability. These procedures also included, among others, testing the completeness, accuracy, and relevance of information used in the calculation of the liability for uncertain tax positions, including intercompany agreements, international, federal, and state filing positions, and the related final tax returns, testing the calculation of the liability for uncertain tax positions by jurisdiction, including management's assessment of the technical merits of tax positions and estimates of the amount of tax benefit expected to be sustained, testing the completeness of management's assessment of both the identification of uncertain tax positions and possible outcomes of each uncertain tax position, and evaluating the status and results of income tax audits with the relevant tax authorities.

/s/ PricewaterhouseCoopers LLP
San Jose, California
December 20, 2022

We have served as the Company's auditor since 1999.

AGILENT TECHNOLOGIES, INC.

CONSOLIDATED STATEMENT OF OPERATIONS

	Years Ended October 31,		
	2022	2021	2020
	(in millions, except per share data)		
Net revenue:			
Products	$ 5,187	$ 4,756	$ 3,993
Services and other	1,661	1,563	1,346
Total net revenue	6,848	6,319	5,339
Costs and expenses:			
Cost of products	2,242	2,078	1,796
Cost of services and other	884	834	706
Total costs	3,126	2,912	2,502
Research and development	467	441	495
Selling, general and administrative	1,637	1,619	1,496
Total costs and expenses	5,230	4,972	4,493
Income from operations	1,618	1,347	846
Interest income	9	2	8
Interest expense	(84)	(81)	(78)
Other income (expense), net	(39)	92	66
Income before taxes	1,504	1,360	842
Provision for income taxes	250	150	123
Net income	$ 1,254	$ 1,210	$ 719
Net income per share:			
Basic	$ 4.19	$ 3.98	$ 2.33
Diluted	$ 4.18	$ 3.94	$ 2.30
Weighted average shares used in computing net income per share:			
Basic	299	304	309
Diluted	300	307	312

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

AGILENT TECHNOLOGIES, INC.
CONSOLIDATED STATEMENT OF COMPREHENSIVE INCOME
(in millions)

	Years Ended October 31,		
	2022	2021	2020
Net income	$ 1,254	$ 1,210	$ 719
Other comprehensive income (loss):			
Gain (loss) on derivative instruments, net of tax expense (benefit) of $13, $1 and $(3)	43	1	(9)
Amounts reclassified into earnings related to derivative instruments, net of tax expense (benefit) of $(8), $4 and $0	(26)	13	2
Foreign currency translation, net of tax expense (benefit) of $(12), $2 and $1	(150)	9	10
Net defined benefit pension cost and post retirement plan costs:			
Change in actuarial net loss, net of tax expense of $9, $74 and $0	69	218	(5)
Change in net prior service benefit, net of tax expense (benefit) of $0, $0 and $(1)	(1)	(1)	(6)
Other comprehensive income (loss)	(65)	240	(8)
Total comprehensive income	$ 1,189	$ 1,450	$ 711

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

AGILENT TECHNOLOGIES, INC.

CONSOLIDATED BALANCE SHEET

	October 31,	
	2022	2021
	(in millions, except par value and share data)	
ASSETS		
Current assets:		
Cash and cash equivalents	$ 1,053	$ 1,484
Short-term investments	—	91
Accounts receivable, net	1,405	1,172
Inventory	1,038	830
Other current assets	282	222
Total current assets	3,778	3,799
Property, plant and equipment, net	1,100	945
Goodwill	3,952	3,975
Other intangible assets, net	821	981
Long-term investments	195	185
Other assets	686	820
Total assets	$ 10,532	$ 10,705
LIABILITIES AND EQUITY		
Current liabilities:		
Accounts payable	$ 580	$ 446
Employee compensation and benefits	455	493
Deferred revenue	461	441
Short-term debt	36	—
Other accrued liabilities	329	328
Total current liabilities	1,861	1,708
Long-term debt	2,733	2,729
Retirement and post-retirement benefits	97	220
Other long-term liabilities	536	659
Total liabilities	5,227	5,316
Commitments and contingencies (Notes 12 and 16)		
Total equity:		
Stockholders' equity:		
Preferred stock; $0.01 par value; 125 million shares authorized; none issued and outstanding	—	—
Common stock; $0.01 par value; 2 billion shares authorized; 295 million shares at October 31, 2022 and 302 million shares at October 31, 2021 issued and outstanding	3	3
Additional paid-in-capital	5,325	5,320
Retained earnings	324	348
Accumulated other comprehensive loss	(347)	(282)
Total stockholders' equity	5,305	5,389
Total liabilities and stockholders' equity	$ 10,532	$ 10,705

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

AGILENT TECHNOLOGIES, INC.

CONSOLIDATED STATEMENT OF CASH FLOWS

	Years Ended October 31,		
	2022	2021	2020
		(in millions)	
Cash flows from operating activities:			
Net income	$ 1,254	$ 1,210	$ 719
Adjustments to reconcile net income to net cash provided by operating activities:			
Depreciation and amortization	317	321	308
Share-based compensation	125	110	83
Deferred taxes	8	14	29
Excess and obsolete inventory related charges	24	29	28
Asset impairment charges	—	2	99
Change in fair value of contingent consideration	(25)	(21)	—
Net (gain) loss on equity securities	67	(98)	(27)
Loss on extinguishment of debt	9	17	—
Other non-cash expense, net	11	3	8
Changes in assets and liabilities:			
Accounts receivable, net	(321)	(128)	(107)
Inventory	(248)	(136)	(68)
Accounts payable	121	64	2
Employee compensation and benefits	(22)	112	29
Other assets and liabilities	(8)	(14)	(182)
Net cash provided by operating activities	1,312	1,485	921
Cash flows from investing activities:			
Investments in property, plant and equipment	(291)	(188)	(119)
Proceeds from the sale of property, plant and equipment	—	1	1
Proceeds from the sale of equity securities	22	12	—
Payment to acquire equity securities	(13)	(22)	(20)
Payment in exchange for convertible note	(4)	(5)	(9)
Acquisitions of businesses and intangible assets, net of cash acquired	(52)	(547)	—
Net cash used in investing activities	(338)	(749)	(147)
Cash flows from financing activities:			
Issuance of common stock under employee stock plans	58	55	60
Payment of taxes related to net share settlement of equity awards	(67)	(76)	(37)
Treasury stock repurchases	(1,139)	(788)	(469)
Payment of dividends	(250)	(236)	(222)
Issuance of senior notes and long-term loan	600	848	499
Debt issuance costs	—	(7)	(4)
Repayment of senior notes	(609)	(417)	—
Proceeds from commercial paper	1,295	1,647	420
Repayment of commercial paper	(1,260)	(1,722)	(345)
Repayment of finance leases	—	—	(4)
Proceeds from revolving credit facility and short-term loan	—	—	798
Repayment of debt and revolving credit facility	—	—	(1,413)
Net cash used in financing activities	(1,372)	(696)	(717)
Effect of exchange rate movements	(36)	3	2
Net increase (decrease) in cash, cash equivalents and restricted cash	(434)	43	59
Cash, cash equivalents and restricted cash at beginning of year	1,490	1,447	1,388
Cash, cash equivalents and restricted cash at end of year	$ 1,056	$ 1,490	$ 1,447
Supplemental cash flow information:			
Income tax payments, net	$ 279	$ 211	$ 361
Interest payments	$ 85	$ 76	$ 71
Net change in property, plant and equipment included in accounts payable and accrued liabilities-increase (decrease)	$ 26	$ 27	$ (1)

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

AGILENT TECHNOLOGIES, INC.

CONSOLIDATED STATEMENT OF EQUITY

	Common Stock					
	Number of Shares	Par Value	Additional Paid-in Capital	Retained Earnings (Accumulated Deficit)	Accumulated Other Comprehensive Loss	Total Stockholders' Equity
	(in millions, except number of shares in thousands)					
Balance as of October 31, 2019	309,071	$ 3	$ 5,277	$ (18)	$ (514)	$ 4,748
Components of comprehensive income, net of tax:						
Net income	—	—	—	719	—	719
Other comprehensive loss	—	—	—	—	(8)	(8)
Total comprehensive income						711
Cash dividends declared ($0.720 per common share)	—	—	—	(222)	—	(222)
Share-based awards issued, net of tax of $37	2,354	—	22	—	—	22
Repurchase of common stock	(5,227)	—	(71)	(398)	—	(469)
Share-based compensation	—	—	83	—	—	83
Balance as of October 31, 2020	306,198	$ 3	$ 5,311	$ 81	$ (522)	$ 4,873
Components of comprehensive income, net of tax:						
Net income	—	—	—	1,210	—	1,210
Other comprehensive income	—	—	—	—	240	240
Total comprehensive income						1,450
Cash dividends declared ($0.776 per common share)	—	—	—	(236)	—	(236)
Share-based awards issued, net of tax of $76	2,083	—	(20)	—	—	(20)
Repurchase of common stock	(6,073)	—	(81)	(707)	—	(788)
Share-based compensation	—	—	110	—	—	110
Balance as of October 31, 2021	302,208	$ 3	$ 5,320	$ 348	$ (282)	$ 5,389
Components of comprehensive income, net of tax:						
Net income	—	—	—	1,254	—	1,254
Other comprehensive loss	—	—	—	—	(65)	(65)
Total comprehensive income						1,189
Cash dividends declared ($0.840 per common share)	—	—	—	(250)	—	(250)
Share-based awards issued, net of tax of $67	1,419	—	(9)	—	—	(9)
Repurchase of common stock	(8,368)	—	(111)	(1,028)	—	(1,139)
Share-based compensation	—	—	125	—	—	125
Balance as of October 31, 2022	295,259	$ 3	$ 5,325	$ 324	$ (347)	$ 5,305

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

AGILENT TECHNOLOGIES, INC.

NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

1. OVERVIEW AND SUMMARY OF SIGNIFICANT ACCOUNTING POLICIES

Overview. Agilent Technologies, Inc. ("we", "Agilent" or the "company"), incorporated in Delaware in May 1999, is a global leader in life sciences, diagnostics and applied chemical markets, providing application focused solutions that include instruments, software, services and consumables for the entire laboratory workflow.

New Segment Structure. In the first quarter of fiscal year 2022, we announced a change in organizational structure designed to enable our growth strategies and strengthen our focus on customers. Our chemistries and supplies business and our remarketed instruments business moved from our Agilent CrossLab business segment to our life sciences and applied markets business segment. We also moved BioTek's service revenue and related cost of sales from our life sciences and applied markets business segment to our Agilent CrossLab business segment. Following this reorganization, we continue to have three business segments (life sciences and applied markets, diagnostics and genomics and Agilent CrossLab), each of which continues to comprise a reportable segment. We began reporting under this new structure with the Quarterly Report on Form 10-Q for the period ended January 31, 2022. Historical financial segment information has been recast to conform to this new presentation in our financial statements and accompanying notes. There was no change to our diagnostics and genomics business segment.

Basis of Presentation. The accompanying consolidated financial statements have been prepared by us pursuant to the rules and regulations of the U.S. Securities and Exchange Commission ("SEC") and are in conformity with U.S. generally accepted accounting principles ("GAAP"). Our fiscal year end is October 31. Unless otherwise stated, all years and dates refer to our fiscal year.

Principles of Consolidation. The consolidated financial statements include the accounts of the company and our wholly- and majority-owned subsidiaries. All intercompany accounts and transactions have been eliminated.

Use of Estimates. The preparation of financial statements in accordance with U.S. GAAP requires management to make estimates and assumptions that affect the amounts reported in our consolidated financial statements and accompanying notes. Management bases its estimates on historical experience and various other assumptions believed to be reasonable. Although these estimates are based on management's best knowledge of current events and actions that may impact the company in the future, actual results may be different from the estimates. Our critical accounting policies are those that affect our financial statements materially and involve difficult, subjective or complex judgments by management. Those policies are revenue recognition, valuation of goodwill and purchased intangible assets, inventory valuation, retirement and post-retirement plan assumptions and accounting for income taxes.

Risks and Uncertainties. We are subject to risks common to companies in the analytical instrument industry, such as global economic and financial market conditions, fluctuations in foreign currency exchange rates and fluctuations in customer demand, among others.

Both our domestic and international operations have been and continue to be affected by the ongoing global pandemic of a novel strain of coronavirus (“COVID-19”) and the resulting volatility and uncertainty it has caused in the U.S. and international markets. The global supply chain and logistics pressures, high inflation, and COVID-related shutdowns in China have made it more challenging for companies to manage operations. We cannot provide any assurances that any prolonged material disruptions in the supply chain will not have a material impact on our consolidated financial statements. As of October 31, 2022, our consolidated financial statements have not been materially impacted.

Revenue Recognition. We enter into contracts to sell products, services or combinations of products and services. Products may include hardware or software and services may include one-time service events or services performed over time.

We derive revenue primarily from the sale of analytical and diagnostics products and services. A performance obligation is a promise in a contract to transfer a distinct product or service to a customer and is the unit of account under Accounting Standard Codification Topic 606, *Revenue from Contracts with Customers*, (“ASC 606’’). See also Note 3, "Revenue" for additional information on revenue recognition.

Revenue is recognized when control of the promised products or services is transferred to our customers and the performance obligation is fulfilled in an amount that reflects the consideration that we expect to be entitled in exchange for those products or services, the transaction price. For equipment, consumables, and most software licenses, control transfers to the customer at a point in time. We use present right to payment, legal title, physical possession of the asset, and risks and rewards of ownership as indicators to determine the transfer of control to the customer. For products that transfer control over time, revenue is recognized as the performance obligation is satisfied. Product over time revenue is assessed against the following criteria: the performance creates an asset that the customer controls as the asset is created; the asset has no alternative use; and we have an enforceable right to payment. Where acceptance is not a formality, the customer must have documented their acceptance of the product or service. For products that include installation, if the installation meets the criteria to be considered a separate performance obligation, product revenue is recognized when control has passed to the customer, and recognition of installation revenue occurs once completed. Product revenue, including sales to resellers and distributors is reduced for provisions for warranties, returns, and other adjustments in the period the related sales are recorded.

Service revenue includes extended warranty, customer and software support including: Software as a Service, post contract support, consulting including companion diagnostics, and training and education. Instrument service contracts and software maintenance contracts are typically annual contracts, which are billed at the beginning of the contract or maintenance period. Revenue for these contracts is recognized on a straight-line basis to revenue over the service period, as a time-based measure of progress best reflects our performance in satisfying this obligation. There are no deferred costs associated with the service contract, as the cost of the service is recorded when the service is performed. Service calls not included in a support contract are recognized to revenue at the time a service is performed.

We have sales from standalone software. These arrangements typically include software licenses and maintenance contracts, both of which we have determined are distinct performance obligations. We determine the amount of the transaction price to allocate to the license and maintenance contract based on the relative standalone selling price of each performance obligation. Software license revenue is recognized at the point in time when control has been transferred to the customer. The revenue allocated to the software maintenance contract is recognized on a straight-line basis over the maintenance period, which is the contractual term of the contract, as a time-based measure of progress best reflects our performance in satisfying this obligation. Unspecified rights to software upgrades are typically sold as part of the maintenance contract on a when-and-if-available basis.

Our multiple-element arrangements are generally comprised of a combination of instruments, installation or other start-up services, and/or software, and/or support or services. Hardware and software elements are typically delivered at the same time and revenue is recognized when control passes to the customer. Service revenue is deferred and recognized over the contractual period or as services are rendered and accepted by the customer. Our arrangements generally do not include any provisions for cancellation, termination, or refunds that would significantly impact recognized revenue.

For contracts with multiple performance obligations, we allocate the consideration to which we expect to be entitled to each performance obligation based on relative standalone selling prices and recognize the related revenue when or as control of each individual performance obligation is transferred to customers. We estimate the standalone selling price by calculating the average historical selling price of our products and services per country for each performance obligation. Standalone selling prices are determined for each distinct good or service in the contract, and then we allocate the transaction price in proportion to those standalone selling prices by performance obligations.

A portion of our revenue relates to lease arrangements. Standalone lease arrangements are outside the scope of ASC 606 and are therefore accounted for in accordance with ASC 842, *Leases* beginning in 2020 and ASC 840, *Leases* for prior periods. Each of these contracts is evaluated as a lease arrangement, either as an operating lease or a sales-type finance lease using the current lease classification guidance.

Deferred Revenue. Contract liabilities (deferred revenue) primarily relate to multiple element arrangements for which billing has occurred but transfer of control of all elements (performance obligations) to the customer has either partially or not occurred at the balance sheet date. This includes cash received from customers for products and related installation and services in advance of the transfer of control. Contract liabilities are classified as either in current liabilities in deferred revenue or long-term in other long-term liabilities in the consolidated balance sheet based on the timing of when we expect to complete our performance obligation.

Sales Taxes. Sales taxes collected from customers and remitted to governmental authorities are not included in our revenue.

Shipping and Handling Costs. Our shipping and handling costs charged to customers are included in net revenue, and the associated expense is recorded in cost of products for all periods presented.

Research and Development. Costs related to research, design and development of our products are charged to research and development expense as they are incurred.

Advertising. Advertising costs are generally expensed as incurred and amounted to $66 million in 2022, $63 million in 2021 and $48 million in 2020.

Taxes on Income. Income tax expense or benefit is based on income or loss before taxes. Deferred tax assets and liabilities are recognized principally for the expected tax consequences of temporary differences between the tax bases of assets and liabilities and their reported amounts. See Note 5, "Income Taxes" for more information.

Net Income Per Share. Basic net income per share is computed by dividing net income - the numerator - by the weighted average number of common shares outstanding - the denominator - during the period excluding the dilutive effect of stock options and other employee stock plans. Diluted net income per share gives effect to all potential common shares outstanding during the period unless the effect is anti-dilutive. The dilutive effect of share-based awards is reflected in diluted net income per share by application of the treasury stock method, which includes consideration of unamortized share-based compensation expense and the dilutive effect of in-the-money options and non-vested restricted stock units. Under the treasury stock method, the amount the employee must pay for exercising stock options and unamortized share-based compensation expense are assumed proceeds to be used to repurchase hypothetical shares. See Note 6, "Net Income Per Share".

Cash, Cash Equivalents and Short-Term Investments. We classify investments as cash equivalents if their original or remaining maturity is three months or less at the date of purchase. Cash equivalents are stated at cost, which approximates fair value.

As of October 31, 2022, approximately $1,028 million of our cash and cash equivalents is held outside of the U.S. by our foreign subsidiaries. Our cash and cash equivalents mainly consist of short-term deposits held at major global financial institutions, institutional money market funds, and similar short duration instruments with original maturities of 90 days or less. We continuously monitor the creditworthiness of the financial institutions and institutional money market funds in which we invest our funds.

We classify equity investments as short-term investments based on their nature and our intent and ability to exit within a year or less. As of October 31, 2022, we had no short-term investments.

Restricted Cash and Restricted Cash Equivalents. Restricted cash and restricted cash equivalents are included with cash and cash equivalents when reconciling the beginning-of-period and end-of-period total amounts shown on the statement of cash flows. A reconciliation of cash, cash equivalents and restricted cash to the consolidated balance sheet follows:

	October 31,		
	2022	2021	2020
	(in millions)		
Cash and cash equivalents	$ 1,053	$ 1,484	$ 1,441
Restricted cash included in other assets	3	6	6
Total cash, cash equivalents and restricted cash	$ 1,056	$ 1,490	$ 1,447

Accounts Receivable, net. Trade accounts receivable are recorded at the invoiced amount and do not bear interest. Such accounts receivable have been reduced by an allowance for doubtful accounts, which is our best estimate of the amount of probable credit losses in our existing accounts receivable. We determine the allowance based on customer specific experience and the aging of such receivables, among other factors. The allowance for doubtful accounts as of October 31, 2022 and 2021 was not material. We do not have any off-balance-sheet credit exposure related to our customers. Accounts receivable are also recorded net of estimated product returns which are not material.

Concentration of Credit Risk. Financial instruments that potentially subject Agilent to significant concentration of credit risk include money market fund investments, equity investments with readily determinable fair value securities, time deposits and demand deposit balances. These investments are categorized as cash and cash equivalents or short-term investments. In

addition, Agilent has credit risk from derivative financial instruments used in hedging activities and accounts receivable. We invest in a variety of financial instruments and limit the amount of credit exposure with any one financial institution. We have a comprehensive credit policy in place and credit exposure is monitored on an ongoing basis.

Credit risk with respect to our accounts receivable is diversified due to the large number of entities comprising our customer base and their dispersion across many different industries and geographies. Credit evaluations are performed on customers requiring credit over a certain amount, and we sell the majority of our products through our direct sales force. Credit risk is mitigated through collateral such as letter of credit, bank guarantees or payment terms like cash in advance. No single customer accounted for more than 10 percent of accounts receivable as of October 31, 2022, or 2021.

Inventory. Inventory is valued at standard cost, which approximates actual cost computed on a first-in, first-out basis, not in excess of market value. We assess the valuation of our inventory on a periodic basis and make adjustments to the value for estimated excess and obsolete inventory based on estimates about future demand. The excess balance determined by this analysis becomes the basis for our excess inventory charge. Our excess inventory review process includes analysis of sales forecasts, managing product rollovers and working with manufacturing to maximize recovery of excess inventory.

Property, Plant and Equipment. Property, plant and equipment are stated at cost less accumulated depreciation. Additions, improvements and major renewals are capitalized; maintenance, repairs and minor renewals are expensed as incurred. When assets are retired or disposed of, the assets and related accumulated depreciation and amortization are removed from our general ledger, and the resulting gain or loss is reflected in the consolidated statement of operations. Buildings and improvements are depreciated over the lesser of their useful lives or the remaining term of the lease and machinery and equipment over 3 years to 10 years. We use the straight-line method to depreciate assets.

Capitalized Software. We capitalize certain internal and external costs incurred to acquire or create internal use software. Capitalized software is included in property, plant and equipment and is depreciated over 3 years to 5 years once development is complete.

Leases. We determine whether an arrangement is, or contains, a lease at inception. Prior to November 1, 2019, for leases where we are the lessee, we accounted for operating lease payments by charging them to expense as incurred. At the beginning of fiscal 2020, the company adopted new lease accounting guidance issued by the Financial Accounting Standards Board ("FASB"). The most significant change requires lessees to record the present value of operating lease payments as right-of-use ("ROU") assets and lease liabilities on the consolidated balance sheet. Where we are the lessee, ROU assets represent the company’s right to use an underlying asset for the lease term, and lease liabilities represent an obligation to make lease payments based on the present value of lease payments over the lease term. Classification of operating lease liabilities as either current or non-current is based on the expected timing of payments due under our obligations. As most of our leases do not provide an implicit interest rate, we use our incremental borrowing rate based on the information available at commencement date in determining the present value of lease payments. The incremental borrowing rate is the rate of interest that a lessee would have to pay to borrow on a collateralized basis over a similar term and at an amount equal to the lease payments in a similar economic environment. In order to determine the appropriate incremental borrowing rates, we have used a number of factors including the company's credit rating, the lease term and the currency swap rate. The ROU asset also consists of any lease incentives received. The lease terms used to calculate the ROU asset and related lease liability include options to extend or terminate the lease when it is reasonably certain that we will exercise that option. Leases with an initial term of twelve months or less are not recorded on the consolidated balance sheet and lease expense for these leases is recognized on a straight-line basis over the lease term. Lease expense for operating leases with an initial term of more than twelve months is recognized on a straight-line basis over the lease term as an operating expense. We have lease agreements which require payments for lease and non-lease components. We have elected to account for these payments as a single lease component.

A portion of our revenue relates to lease arrangements where Agilent is the lessor. Standalone lease arrangements are outside the scope of Accounting Standard Codification ("ASC") Topic 606, Revenue Contracts with Customers, and are therefore accounted for in accordance with ASC Topic 842, Leases. Each of these contracts is evaluated as a lease arrangement, either as an operating lease or a sales-type finance lease using the current lease classification guidance. In a lease arrangement that is a multiple-element arrangement that contains equipment leases and the supply of consumables, the revenue associated with the instrument rental is treated under the lease accounting standard ASC 842, whereas the revenue associated with the consumables, the non-lease component, is recognized in accordance with the ASC 606 revenue standard.

See also Note 9, "Leases" for additional information about our leases.

Acquisitions. Agilent accounts for the acquisition of a business using the acquisition method of accounting, and we allocate the fair value of the purchase price to the tangible assets acquired, liabilities assumed, and intangible assets acquired, including in-process research and development ("IPR&D"), based on their estimated fair values. The excess value of the cost of an acquired business over the fair value of the assets acquired and liabilities assumed is recognized as goodwill. The fair value of IPR&D is initially capitalized as an intangible asset with an indefinite life. When an IPR&D project is completed, the IPR&D is reclassified as an amortizable purchased intangible asset and amortized to costs of revenues over the asset's estimated useful life.

Our determination of the fair value of the intangible assets acquired involves the use of significant estimates and assumptions. Specifically, our determination of the fair value of the developed product technology and IPR&D acquired involve significant estimates and assumptions related to revenue growth rates and discount rates. Our determination of the fair value of customer relationships acquired involved significant estimates and assumptions related to revenue growth rates, discount rates, and customer attrition rates. Our determination of the fair value of the tradename acquired involved the use of significant estimates and assumptions related to revenue growth rates, royalty rates and discount rates. The company believes that the fair value assigned to the assets acquired and liabilities assumed are based on reasonable assumptions and estimates that marketplace participants would use. Actual results could differ materially from these estimates.

Goodwill and Purchased Intangible Assets. We assess our goodwill and purchased intangible assets for impairment annually or whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Under the authoritative guidance, we have the option to perform a qualitative assessment to determine whether further impairment testing is necessary. The accounting standard gives an entity the option to first assess qualitative factors to determine whether performing the quantitative test is necessary. If an entity believes, as a result of its qualitative assessment, that it is more-likely-than-not (i.e., greater than 50% chance) that the fair value of a reporting unit is less than its carrying amount, the quantitative impairment test will be required. Otherwise, no further testing will be required.

The guidance includes examples of events and circumstances that might indicate that a reporting unit's fair value is less than its carrying amount. These include macro-economic conditions such as deterioration in the entity's operating environment or industry or market considerations; entity-specific events such as increasing costs, declining financial performance, or loss of key personnel; or other events such as an expectation that a reporting unit will be sold or a sustained decrease in the stock price on either an absolute basis or relative to peers.

If it is determined, as a result of the qualitative assessment, that it is more-likely-than-not that the fair value of a reporting unit is less than its carrying amount, then we are required to perform a quantitative impairment test on goodwill to identify and measure the amount of a goodwill impairment loss to be recognized. A goodwill impairment loss, if any, is measured as the amount by which a reporting unit's carrying value, including goodwill, exceeds its fair value, not to exceed the carrying amount of goodwill. As defined in the authoritative guidance, a reporting unit is an operating segment, or one level below an operating segment. We aggregate components of an operating segment that have similar economic characteristics into our reporting units.

In fiscal year 2022, we assessed goodwill impairment for our three reporting units which consisted of three segments: life sciences and applied markets, diagnostics and genomics and Agilent CrossLab. We performed a quantitative test for goodwill impairment of the three reporting units as of November 1, 2021, due to the change in our segment structure. As of November 1, 2021, there was no impairment of goodwill. We also performed a qualitative test for goodwill impairment of the three reporting units as of September 30, 2022, our annual impairment test date. Based on the results of our qualitative testing, we believe that it is more-likely-than-not that the fair value of each reporting unit is greater than its respective carrying value. Each quarter we review the events and circumstances to determine if goodwill impairment is indicated. There was no impairment of goodwill during the years ended October 31, 2022, 2021 and 2020.

Purchased intangible assets consist primarily of acquired developed technologies, proprietary know-how, trademarks, and customer relationships and are amortized using the best estimate of the asset's useful life that reflect the pattern in which the economic benefits are consumed or used up or a straight-line method ranging from 6 months to 15 years. IPR&D is initially capitalized at fair value as an intangible asset with an indefinite life and assessed for impairment thereafter. When the IPR&D project is complete, it is reclassified as an amortizable purchased intangible asset and is amortized over its estimated useful life. If an IPR&D project is abandoned, Agilent will record a charge for the value of the related intangible asset to Agilent's consolidated statement of operations in the period it is abandoned.

Agilent's indefinite-lived intangible assets are IPR&D intangible assets. The accounting guidance allows a qualitative approach for testing indefinite-lived intangible assets for impairment, similar to the issued impairment testing guidance for goodwill and allows the option to first assess qualitative factors (events and circumstances) that could have affected the

significant inputs used in determining the fair value of the indefinite-lived intangible asset to determine whether it is more-likely-than-not (i.e., greater than 50% chance) that the indefinite-lived intangible asset is impaired. An organization may choose to bypass the qualitative assessment for any indefinite-lived intangible asset in any period and proceed directly to calculating its fair value. We performed a qualitative test for impairment of indefinite-lived intangible assets as of September 30, 2022. Based on the results of our qualitative testing, we believe that it is more-likely-than-not that the fair values of these indefinite-lived intangible assets are greater than their respective carrying values. Each quarter we review the events and circumstances to determine if impairment of indefinite-lived intangible assets is indicated. During the year ended October 31, 2022 and 2021 there were no impairments of indefinite-lived intangible assets. During the year ended October 31, 2020, we recorded an impairment of in-process research and development of $90 million related to the shutdown of our sequencer development program in our diagnostics and genomics segment.

Impairment of Long-Lived Assets. We continually monitor events and changes in circumstances that could indicate carrying amounts of long-lived assets, including intangible assets, may not be recoverable. When such events or changes in circumstances occur, we assess the recoverability of long-lived assets by determining whether the carrying value of such assets will be recovered through undiscounted expected future cash flows. If the total of the undiscounted future cash flows is less than the carrying amount of those assets, we recognize an impairment loss based on the excess of the carrying amount over the fair value of the assets. During the year ended October 31, 2022, there were no impairments of other long-lived assets or intangible assets. During the year ended October 31, 2021, we recorded an impairment charge of long-lived assets of $2 million. During the year ended October 31, 2020 we recorded an impairment charge of long-lived assets including indefinite-lived in-process research and development of $98 million related to the shutdown of our sequencer development program in our diagnostics and genomics segment.

Variable Interest Entities. We make a determination upon entering into an arrangement whether an entity in which we have made an investment is considered a Variable Interest Entity ("VIE"). We evaluate our investments in privately held companies on an ongoing basis. We have determined that as of October 31, 2022 and 2021, there were no VIEs required to be consolidated in our consolidated financial statements because we do not have a controlling financial interest in any of the VIEs in which we have invested nor are we the primary beneficiary. We account for these investments under either the equity method or as equity investments without readily determinable fair value, depending on the circumstances. We periodically reassess whether we are the primary beneficiary of a VIE. The reassessment process considers whether we have acquired the power to direct the most significant activities of the VIE through changes in governing documents or other circumstances. We also reconsider whether entities previously determined not to be VIEs have become VIEs and vice-versa, based on changes in facts and circumstances including changes in contractual arrangements and capital structure.

As of October 31, 2022 and 2021, the total carrying value of investments and loans in privately held companies considered as VIEs was $87 million and $76 million respectively. The maximum exposure is equal to the carrying value because we do not have future funding commitments. The investments are included on the long-term investments line and the loans on the other current assets and other assets lines (depending upon tenure of loan) on the consolidated balance sheet.

Investments. Equity investments without readily determinable fair value consist of non-marketable equity securities (typically investments in privately-held companies). These investments are accounted for using the measurement alternative at cost, and we adjust for impairments and observable price changes (orderly transactions for the identical or a similar security from the same issuer) included in net income as and when it occurs. Equity investments with readily determinable fair value consist of marketable equity securities which were reclassified from non-marketable equity securities following the commencement of public market trading of the issuers and are reported at fair value, with gains or losses resulting from changes in fair value included in net income. There are no equity investments with readily determinable fair value at October 31, 2022 and $91 million at October 31, 2021. Other investments with readily determinable fair value consist of shares we own in a special fund and are reported at fair value, with gains or losses resulting from changes in fair value included in net income. Trading securities, which are comprised of mutual funds, bonds and other similar instruments and deferred compensation liabilities are reported at fair value, with gains or losses resulting from changes in fair value recognized currently in net income. Equity method investments are reported at the amount of the company's initial investment and adjusted each period for the company's share of the investee's income or loss and dividend paid. There are no equity method investments as of October 31, 2022 and 2021. The company assesses investments for impairment whenever events or changes in circumstances indicate that the carrying value of an investment may not be recoverable.

Fair Value of Financial Instruments. The carrying values of certain of our financial instruments including cash and cash equivalents, accounts receivable, accounts payable, accrued compensation and other accrued liabilities approximate fair value because of their short maturities. The fair value of short-term and long-term equity investments which are readily determinable, and which are not accounted under the equity method are reported at fair value using quoted market prices for those securities

when available with gains and losses included in net income. The fair value of long-term equity investments which are not readily determinable, and which are not accounted under the equity method are reported at cost with adjustments for observable changes in prices or impairments included in net income. As of October 31, 2022, the fair value of the term loans approximates its carrying value, and the fair value of our senior notes was $1,754 million with a carrying value of $2,133 million. This compares to the fair value of our senior notes of $2,806 million with a carrying value of $2,729 million as of October 31, 2021. The change in the fair value compared to carrying value in the year ended October 31, 2022, is primarily due to increased market interest rates. The fair value was calculated from quoted prices which are primarily Level 1 inputs under the accounting guidance. The fair value of foreign currency contracts used for hedging purposes is estimated internally by using inputs tied to active markets. These inputs, for example, interest rate yield curves, foreign exchange rates, and forward and spot prices for currencies are observable in the market or can be corroborated by observable market data for substantially the full term of the assets or liabilities. See also Note 12, "Fair Value Measurements" for additional information on the fair value of financial instruments.

Warranty. Our standard warranty terms typically extend for one year from the date of delivery. We accrue for standard warranty costs based on historical trends in warranty charges. The accrual is reviewed regularly and periodically adjusted to reflect changes in warranty cost over the period. Estimated warranty charges are recorded within cost of products at the time products are sold. See Note 15, "Guarantees".

Employee Compensation and Benefits. Amounts owed to employees, such as accrued salary, bonuses and vacation benefits are accounted for within employee compensation and benefits. The total amount of accrued vacation benefit was $123 million and $129 million as of October 31, 2022, and 2021, respectively.

Retirement and Post-Retirement Plans. Substantially all of our employees are covered under various defined benefit and/or defined contribution retirement plans. Additionally, we sponsor post-retirement health care benefits for our eligible U.S. employees. Assumptions used to determine the benefit obligations and the expense for these plans are derived annually. See Note 14, “Retirement plans and post-retirement pension plans” for additional information.

Retirement of Treasury Shares. Upon the formal retirement of treasury shares, we deduct the par value of the retired treasury shares from common stock and allocate the excess of cost over par as a deduction to additional paid-in capital, based on the pro-rata portion of additional paid-in-capital, and the remaining excess as a deduction to retained earnings. All retired treasury shares revert to the status of authorized but unissued shares.

Share-Based Compensation. For the years ended 2022, 2021 and 2020, we accounted for share-based awards made to our employees and directors including employee stock option awards, restricted stock units, employee stock purchases made under our Employee Stock Purchase Plan ("ESPP") and performance share awards under Agilent Technologies, Inc. Long-Term Performance Program ("LTPP") using the estimated grant date fair value method of accounting. Under the fair value method, we recorded compensation expense for all share-based awards of $126 million in 2022, $111 million in 2021 and $84 million in 2020. See Note 4, "Share-based Compensation" for additional information.

Derivative Instruments. Agilent is exposed to global foreign currency exchange rate and interest rate risks in the normal course of business. We enter into foreign exchange hedging contracts, primarily forward contracts, interest rate swaps and interest rate locks to manage financial exposures resulting from changes in foreign currency exchange rates and interest rates. In the vast majority of cases, these contracts are designated at inception as hedges of the related foreign currency or interest exposures. Foreign currency exposures include committed and anticipated revenue and expense transactions and assets and liabilities that are denominated in currencies other than the functional currency of the subsidiary. Interest rate exposures are associated with the company's fixed-rate debt. To qualify for hedge accounting, contracts must reduce the foreign currency exchange rate and interest rate risk otherwise inherent in the amount and duration of the hedged exposures and comply with established risk management policies. Foreign exchange hedging contracts generally mature within twelve months, interest rate swaps mature at the same time as the maturity of the debt and interest rate locks mature at the same time as the issuance of debt. In order to manage foreign currency exposures in a few limited jurisdictions, we may enter into foreign exchange contracts that do not qualify for hedge accounting. In such circumstances, the local foreign currency exposure is offset by contracts owned by the parent company. We do not use derivative financial instruments for trading or speculative purposes.

All derivatives are recognized on the balance sheet at their fair values. For derivative instruments that are designated and qualify as a cash flow hedge, changes in the value of the effective portion of the derivative instrument are recognized in accumulated comprehensive income (loss), a component of stockholders' equity. For derivative instruments that are designated and qualify as a net investment hedge, changes in the value of the effective portion of the derivative instrument are recognized in accumulated other comprehensive income (loss) - translation adjustment. Amounts associated with cash flow hedges are

reclassified and recognized in income when either the forecasted transaction occurs or it becomes probable the forecasted transaction will not occur. Derivatives not designated as hedging instruments are recorded on the balance sheet at their fair value and changes in the fair values are recorded in the income statement in the current period. Derivative instruments are subject to master netting arrangements and are disclosed gross in the balance sheet. Changes in the fair value of the ineffective portion of derivative instruments are recognized in earnings in the current period. The impact of the ineffectiveness measurement in 2022, 2021 and 2020 was not material. Cash flows from derivative instruments are classified in the statement of cash flows in the same category as the cash flows from the hedged or economically hedged item, primarily in operating activities.

Foreign Currency Translation. We translate and remeasure balance sheet and income statement items into U.S. dollars. For those subsidiaries that operate in a local currency functional environment, all assets and liabilities are translated into U.S. dollars using current exchange rates at the balance sheet date; revenue and expenses are translated using monthly exchange rates which approximate to average exchange rates in effect during each period. Resulting translation adjustments are reported as a separate component of accumulated other comprehensive income (loss) in stockholders' equity.

For those subsidiaries that operate in a U.S. dollar functional environment, foreign currency assets and liabilities are remeasured into U.S. dollars at current exchange rates except for non-monetary assets and capital accounts which are remeasured at historical exchange rates. Revenue and expenses are generally remeasured at monthly exchange rates which approximate average exchange rates in effect during each period. Gains or losses from foreign currency remeasurement are included in consolidated net income. Net gains or losses resulting from foreign currency transactions, including hedging gains and losses, are reported in other income (expense), net and were $6 million loss for 2022, $4 million loss for 2021 and $4 million loss for 2020.

2. NEW ACCOUNTING PRONOUNCEMENTS

Recently Adopted Accounting Pronouncements

In January 2020, accounting guidance was issued that clarifies the accounting guidance for equity method investments, joint ventures, and derivatives and hedging. The guidance clarifies the interaction between different sections of the accounting guidance that could be applicable and helps clarify which guidance should be applied in certain situations which increases relevance and comparability of financial statement information. On November 1, 2021, we adopted this guidance which did not have a material impact on our consolidated financial statements and disclosures.

In October 2021, the FASB issued an update to improve the accounting for acquired revenue contracts with customers in a business combination. The amendments require an acquirer to use the guidance in ASC 606, Revenue from Contracts with Customers, rather than using fair value, when recognizing and measuring contract assets and contract liabilities related to customer contracts assumed in a business combination. On November 1, 2021 we early adopted this guidance which did not have a material impact on our consolidated financial statements and disclosures.

New Accounting Pronouncements Not Yet Adopted

In November 2021, the FASB issued updates to increase the transparency in the annual disclosure requirements relating to government assistance received by business entities in Topic 832, Government Assistance. The guidance requires certain disclosures about transactions with a government that are accounted for by applying a grant or contribution model. These amendments are effective for us beginning November 1, 2022, and for interim periods within that year. We do not expect that the adoption of this standard will have a material impact on our consolidated financial statements and disclosures.

Other amendments to GAAP in the U.S. that have been issued by the FASB or other standards-setting bodies that do not require adoption until a future date are not expected to have a material impact on our consolidated financial statements upon adoption.

3. REVENUE

The following table presents the company's total revenue and segment revenue disaggregated by geographical region:

	Life Sciences and Applied Markets	Agilent CrossLab	Diagnostics and Genomics	Total
		(in millions)		
Year Ended October 31, 2022:				
Americas	$ 1,331	$ 567	$ 784	$ 2,682
Europe	907	382	410	1,699
Asia Pacific	1,769	503	195	2,467
Total	$ 4,007	$ 1,452	$ 1,389	$ 6,848
Year Ended October 31, 2021:				
Americas	$ 1,199	$ 510	$ 695	$ 2,404
Europe	893	378	417	1,688
Asia Pacific	1,571	472	184	2,227
Total	$ 3,663	$ 1,360	$ 1,296	$ 6,319
Year Ended October 31, 2020:				
Americas	$ 1,002	$ 449	$ 517	$ 1,968
Europe	746	326	371	1,443
Asia Pacific	1,367	402	159	1,928
Total	$ 3,115	$ 1,177	$ 1,047	$ 5,339

The following table presents the company's total revenue disaggregated by end markets and by revenue type:

	Years Ended October 31,		
	2022	2021	2020
	(in millions)		
Revenue by End Markets			
Pharmaceutical and Biopharmaceutical	$ 2,515	2,224	$ 1,754
Chemicals and Advanced Materials	1,521	1,328	1,154
Diagnostics and Clinical	963	938	787
Food	617	601	517
Academia and Government	576	576	526
Environmental and Forensics	656	652	601
Total	$ 6,848	$ 6,319	$ 5,339
Revenue by Type			
Instrumentation	$ 2,907	2,657	$ 2,249
Non-instrumentation and other	3,941	3,662	3,090
Total	$ 6,848	$ 6,319	$ 5,339

Revenue by region is based on the ship to location of the customer. Revenue by end market is determined by the market indicator of the customer and by customer type. Instrumentation revenue includes sales from instruments, remarketed instruments and third-party products. Non-instrumentation and other revenue include sales from contract and per incident services, our companion diagnostics and our nucleic acid solutions businesses as well as sales from spare parts, consumables, reagents, vacuum pumps, subscriptions, software licenses and associated services.

Contract Balances

Contract Assets

Contract assets (unbilled accounts receivable) primarily relate to the company's right to consideration for work completed but not billed at the reporting date. The unbilled receivables are reclassified to trade receivables when billed to customers. Contract assets are generally classified as current assets and are included in "Accounts receivable, net" in the consolidated balance sheet. The balances of contract assets as of October 31, 2022 and 2021, were $275 million and $197 million, respectively.

Contract Liabilities

The following table provides information about contract liabilities (deferred revenue) and the significant changes in the balances during the years ended October 31, 2021 and 2022:

	Contract Liabilities
	(in millions)
Ending balance as of October 31, 2020	$ 446
Net revenue deferred in the period	406
Revenue recognized that was included in the contract liability balance at the beginning of the period	(359)
Change in deferrals from customer cash advances, net of revenue recognized	24
Currency translation and other adjustments	2
Ending balance as of October 31, 2021	$ 519
Net revenue deferred in the period	437
Revenue recognized that was included in the contract liability balance at the beginning of the period	(372)
Change in deferrals from customer cash advances, net of revenue recognized	11
Currency translation and other adjustments	(38)
Ending balance as of October 31, 2022	$ 557

Contract liabilities primarily relate to multiple element arrangements for which billing has occurred but transfer of control of all elements to the customer has either partially or not occurred at the balance sheet date. This includes cash received from customers for products and related installation and services in advance of the transfer of control. Contract liabilities are classified as either current in deferred revenue or long-term in other long-term liabilities in the consolidated balance sheet based on the timing of when we expect to complete our performance obligation.

Contract Costs

Incremental costs of obtaining a contract with a customer are recognized as an asset if we expect the benefit of those costs to be longer than one year. We have determined that certain sales incentive programs meet the requirements to be capitalized. The changes in total capitalized costs to obtain a contract were immaterial during the years ended October 31, 2022 and 2021 and are included in other current and long-term assets on the consolidated balance sheet. We have applied the practical expedient to expense costs as incurred for costs to obtain a contract with a customer when the amortization period would have been one year or less. These costs include the company's internal sales force compensation program, as we have determined that annual compensation is commensurate with annual sales activities.

Transaction Price Allocated to the Remaining Performance Obligations

We have applied the practical expedient in ASC 606-10-50-14 and have not disclosed information about transaction price allocated to remaining performance obligations that have original expected durations of one year or less.

The estimated revenue expected to be recognized for remaining performance obligations that have an original term of more than one year, as of October 31, 2022, was $357 million, the majority of which is expected to be recognized over the next 12 months. Remaining performance obligations primarily include extended warranty, customer manufacturing contracts, and software maintenance contracts and revenue associated with lease arrangements.

4. SHARE-BASED COMPENSATION

Agilent accounts for share-based awards in accordance with the provisions of the accounting guidance which requires the measurement and recognition of compensation expense for all share-based payment awards made to our employees and directors including restricted stock units, employee stock options, employee stock purchases made under our employee stock purchase plan and performance share awards granted to selected members of our senior management under the long-term performance plan ("LTPP") based on estimated fair values.

Description of Share-Based Plans

Employee Stock Purchase Plan. Effective May 1, 2020, we adopted the 2020 Employee Stock Purchase Plan ("ESPP") which replaced our previous Employee Stock Purchase Plan. The ESPP allows eligible employees to contribute up to 10 percent of their base compensation to purchase shares of our common stock at 85 percent of the closing market price at purchase date. There are 31 million shares authorized for issuance in connection with the ESPP.

Under our ESPP, employees purchased 469,701 shares for $54 million in 2022, 462,237 shares for $46 million in 2021 and 628,644 shares for $41 million in 2020. As of October 31, 2022, the number of shares of common stock authorized and available for issuance under our ESPP was 24,859,446. This excludes the number of shares of common stock to be issued to participants in consideration of the aggregate participant contributions totaling $27 million as of October 31, 2022.

Incentive Compensation Plans. On November 15, 2017 and March 21, 2018, the Board of Directors and the stockholders, respectively, approved the Agilent Technologies, Inc. 2018 Stock Plan (the "2018 Plan") which amends, including renaming and extending the term of, the Agilent Technologies, Inc. 2009 Stock Plan (the "2009 Plan"). The 2018 Plan provides for the grant of awards in the form of stock options, stock appreciation rights ("SARs"), restricted stock, restricted stock units ("RSUs"), performance shares and performance units with performance-based conditions on vesting or exercisability, and cash awards. The 2018 Plan has a term of ten years. As of October 31, 2022, 21,496,468 shares were available for future awards under the 2018 Plan.

Stock Options. In fiscal year 2021, we resumed granting stock options. Stock options granted under the 2018 Plan may be either "incentive stock options", as defined in Section 422 of the Internal Revenue Code, or non-statutory. Options generally vest at a rate of 25 percent per year over a period of four years from the date of grant with a maximum contractual term of ten years. The exercise price for stock options is generally not less than 100 percent of the fair market value of our common stock on the date the stock award is granted. We issue new shares of common stock when employee stock options are exercised.

Performance Shares. We have two LTPP performance stock award programs, which are administered under the 2018 Stock Plan, for our executive officers and other key employees. Participants in our LTPP Total Stockholders' Return ("TSR") and LTPP Earnings Per Share ("EPS") programs are entitled to receive shares of the company's stock after the end of a three-year period, if specified performance targets for the programs are met. The LTPP-TSR awards are generally designed to meet the criteria of a performance award with the performance metrics and peer group comparison based on the TSR set at the beginning of the performance period. The LTPP-EPS awards are based on the company's EPS performance over a three-year period. The performance targets for the LTPP-EPS for year 2 and year 3 of the performance period are set in the first quarter of year 2 and year 3, respectively. All LTPP awards are subject to a one-year post-vest holding period. The final LTPP award may vary from zero to 200 percent of the target award. The maximum contractual term for awards under the LTPP program is three years. We consider the dilutive impact of these programs in our diluted net income per share calculation only to the extent that the performance conditions are expected to be met.

Restricted Stock Units. We also issue restricted stock units under our share-based plans. The estimated fair value of the restricted stock unit awards granted under the Stock Plans is determined based on the market price of Agilent's common stock on the date of grant adjusted for expected dividend yield. Restricted stock units generally vest, with some exceptions, at a rate of 25 percent per year over a period of four years from the date of grant. All restricted stock units granted to our executives after November 1, 2015, are subject to a one-year post-vest holding period.

Impact of Share-based Compensation Awards

We have recognized compensation expense based on the estimated grant date fair value method under the authoritative guidance. For all share-based awards we have recognized compensation expense using a straight-line amortization method. As the guidance requires that share-based compensation expense should be based on awards that are ultimately expected to vest, estimated share-based compensation has been reduced for estimated forfeitures.

The impact on our results for share-based compensation was as follows:

	Years Ended October 31,		
	2022	2021	2020
	(in millions)		
Cost of products and services	$ 30	$ 26	$ 21
Research and development	14	12	9
Selling, general and administrative	82	73	54
Total share-based compensation expense	$ 126	$ 111	$ 84

At October 31, 2022 and 2021, no share-based compensation was capitalized within inventory.

Valuation Assumptions

The fair value of share-based awards for our employee stock option awards was estimated using the Black-Scholes option pricing model. Shares granted under the LTPP (TSR) were valued using a Monte Carlo simulation model. The Monte Carlo simulation fair value model requires the use of highly subjective and complex assumptions, including the price volatility of the underlying stock. For the volatility of our LTPP (TSR) grants, we used our own historical stock price volatility.

The ESPP allows eligible employees to purchase shares of our common stock at 85 percent of the price at purchase and uses the purchase date to establish the fair market value.

We use historical volatility to estimate the expected stock price volatility assumption for employee stock option awards. In reaching the conclusion, we have considered many factors including the extent to which our options are currently traded and our ability to find traded options in the current market with similar terms and prices to the options we are valuing. In estimating the expected life of our options granted, we considered the historical option exercise behavior of our executives, which we believe is representative of future behavior.

The estimated fair value of restricted stock units and LTPP (EPS) awards is determined based on the market price of our common stock on the date of grant adjusted for expected dividend yield. The compensation cost for LTPP (EPS) reflects the cost of awards that are probable to vest at the end of the performance period.

All LTPP awards granted to our senior management employees have a one-year post-vest holding restriction. The estimated discount associated with post-vest holding restrictions is calculated using the Finnerty model. The model calculates the potential lost value if the employees were able to sell the shares during the lack of marketability period, instead of being required to hold the shares. The model used the same historical stock price volatility and dividend yield assumption used for the Monte Carlo simulation model and an expected dividend yield to compute the discount.

The following assumptions were used to estimate the fair value of awards granted.

	Years Ended October 31,		
	2022	2021	2020
Stock Option Plan:			
Weighted average risk-free interest rate	1.5%	0.5%	—
Dividend yield	0.5%	0.7%	—
Weighted average volatility	26%	26%	—
Expected life	5.5 years	5.5 years	—
LTPP:			
Volatility of Agilent shares	29%	30%	23%
Volatility of selected peer-company shares	23%-81%	24%-57%	15%-44%
Pair-wise correlation with selected peers	41%	45%	29%
Post-vest restriction discount for all executive awards	6.5%	6.8%	5.3%

Share-Based Payment Award Activity

Employee Stock Options

The following table summarizes employee stock option award activity of our employees and directors for 2022.

	Options Outstanding	Weighted Average Exercise Price
	(in thousands)	
Outstanding at October 31, 2021	943	$ 69
Granted	279	$ 158
Exercised	(108)	$ 38
Cancelled	(17)	$ 130
Outstanding at October 31, 2022	1,097	$ 94

The options outstanding and exercisable for equity share-based payment awards at October 31, 2022 were as follows:

	Options Outstanding			Options Exercisable			
Range of Exercise Prices	Number Outstanding	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Aggregate Intrinsic Value	Number Exercisable	Weighted Average Remaining Contractual Life	Weighted Average Exercise Price	Aggregate Intrinsic Value
	(in thousands)	(in years)		(in thousands)	(in thousands)	(in years)		(in thousands)
$25.00 - $40.00	69	1.0	$ 38	$ 6,958	69	1.0	$ 38	$ 6,958
$40.01 - $50.00	386	2.0	$ 41	37,556	386	2.0	$ 41	37,556
$100.00- $110.00	325	8.0	$ 110	9,254	90	8.0	$ 110	2,555
$110.01 - $150.00	65	8.9	$ 128	687	9	8.5	$ 127	99
$150.01 & Over	252	9.0	$ 161	—	6	9.0	$ 159	—
	1,097	5.8	$ 94	$ 54,455	560	3.1	$ 54	$ 47,168

The aggregate intrinsic value in the table above represents the total pre-tax intrinsic value, based on the company's closing stock price of $138.35 at October 31, 2022, which would have been received by award holders had all award holders exercised their awards that were in-the-money as of that date. The total number of in-the-money awards exercisable at October 31, 2022 was approximately 0.6 million.

The following table summarizes the aggregate intrinsic value of options exercised in 2022, 2021 and 2020 and the fair value of options granted in 2022:

	Aggregate Intrinsic Value	Weighted Average Exercise Price	Per Share Value Using Black-Scholes Model
	(in thousands)		
Options exercised in fiscal 2020	$ 30,481	$ 34	
Options exercised in fiscal 2021	$ 34,305	$ 33	
Black Scholes per share value of options granted during fiscal 2021			$ 26
Options exercised in fiscal 2022	$ 10,765	$ 38	
Black Scholes per share value of options granted during fiscal 2022			$ 39

As of October 31, 2022, the unrecognized share-based compensation cost for outstanding stock option awards, net of expected forfeitures, was $8 million. The amount of cash received from the exercise of share-based awards granted was $58 million in 2022, $55 million in 2021 and $60 million in 2020.

Non-Vested Awards

The following table summarizes non-vested award activity in 2022 primarily for our LTPP and restricted stock unit awards.

	Shares	Weighted Average Grant Price
	(in thousands)	
Non-vested at October 31, 2021	2,519	$ 88
Granted	696	$ 155
Vested	(1,189)	$ 75
Forfeited	(112)	$ 114
Change in LTPP shares in the year due to exceeding performance targets	189	$ 65
Non-vested at October 31, 2022	2,103	$ 114

As of October 31, 2022, the unrecognized share-based compensation cost for non-vested restricted stock awards net of expected forfeitures was approximately $115 million which is expected to be amortized over a weighted average period of 2.1 years. The total fair value of restricted stock awards vested was $89 million for 2022, $84 million for 2021 and $85 million for 2020.

5. INCOME TAXES

The domestic and foreign components of income before taxes are:

	Years Ended October 31,		
	2022	2021	2020
	(in millions)		
U.S. operations	$ 858	$ 876	$ 54
Non-U.S. operations	646	484	788
Total income before taxes	$ 1,504	$ 1,360	$ 842

The provision for income taxes is comprised of:

	Years Ended October 31,		
	2022	2021	2020
	(in millions)		
U.S. federal taxes:			
Current	$ 173	$ 122	$ 5
Deferred	(28)	(1)	4
Non-U.S. taxes:			
Current	47	(3)	84
Deferred	35	14	24
State taxes, net of federal benefit:			
Current	22	17	5
Deferred	1	1	1
Total provision for income taxes	$ 250	$ 150	$ 123

The differences between the U.S. federal statutory income tax rate and our effective tax rate are:

	Years Ended October 31,		
	2022	2021	2020
	(in millions)		
Profit before tax times statutory rate	$ 316	$ 286	$ 177
State income taxes, net of federal benefit	23	18	6
Non-U.S. income taxed at different rates	(18)	5	(37)
Change in unrecognized tax benefits	(6)	(84)	(8)
Foreign-derived intangible income deduction	(46)	(35)	(9)
Excess tax benefits from stock-based compensation	(19)	(29)	(18)
Other, net	—	(11)	12
Provision (benefit) for income taxes	$ 250	$ 150	$ 123
Effective tax rate	16.6 %	11.0 %	14.6 %

For 2022, our income tax expense was $250 million with an effective tax rate of 16.6 percent. For the year ended October 31, 2022, our effective tax rate and the resulting provision for income taxes were impacted by the tax benefit of $46 million related to foreign-derived intangible income.

For 2021, our income tax expense was $150 million with an effective tax rate of 11 percent. For the year ended October 31, 2021, our effective tax rate and the resulting provision for income taxes were impacted by the discrete benefit of $93 million related to the release of tax reserves in various jurisdictions due to audit settlements and the expiration of statutes of limitations. The income taxes for the year ended October 31, 2021 also include the excess tax benefits from stock-based compensation of $29 million.

For 2020, our income tax expense was $123 million with an effective tax rate of 14.6 percent. For the year ended October 31, 2020, our effective tax rate and the resulting provision for income taxes were impacted by foreign income taxed at lower rates.

We have negotiated a tax holiday in Singapore. The tax holiday provides a lower rate of taxation on certain classes of income and requires various thresholds of investments and employment or specific types of income. In December 2018, the tax holiday in Singapore was renegotiated and extended through 2027. As a result of the incentive, the impact of the tax holiday decreased income taxes by $53 million, $35 million, and $71 million in 2022, 2021, and 2020, respectively. The benefit of the tax holiday on net income per share (diluted) was approximately $0.18, $0.11, and $0.23 in 2022, 2021 and 2020, respectively.

The significant components of deferred tax assets and deferred tax liabilities included on the consolidated balance sheet are:

	Years Ended October 31,	
	2022	2021
	(in millions)	
Deferred Tax Assets		
Intangibles	$ 62	$ 72
Employee benefits, other than retirement	45	43
Net operating loss, capital loss, and credit carryforwards	157	191
Share-based compensation	23	22
Lease obligations	29	30
Other	58	42
Deferred tax assets	$ 374	$ 400
Tax valuation allowance	(115)	(120)
Deferred tax assets, net of valuation allowance	$ 259	$ 280
Deferred Tax Liabilities		
Property, plant and equipment	$ (11)	$ (11)
Pension benefits and retiree medical benefits	(24)	(8)
Right-of-use asset	(29)	(29)
Other	(7)	(26)
Deferred tax liabilities	$ (71)	$ (74)
Net deferred tax assets (liabilities)	$ 188	$ 206

Valuation allowances require an assessment of both positive and negative evidence when determining whether it is more likely than not that deferred tax assets are recoverable. Such assessment is required on a jurisdiction by jurisdiction basis. As of October 31, 2022, we continued to maintain a valuation allowance of $115 million until sufficient positive evidence exists to support reversal. The valuation allowance is primarily related to deferred tax assets for the states of California and Colorado, along with the net operating losses in the Netherlands and capital losses in Australia.

At October 31, 2022, we had federal, state and foreign net operating loss carryforwards of approximately $6 million, $207 million and $384 million, respectively. The federal and state net operating loss carryforwards are subject to various limitations under Section 382 of the Internal Revenue Code and applicable state tax laws. If not utilized, the federal and state net operating loss carryforwards will begin to expire in 2023. If not utilized, $3 million of the foreign net operating loss carryforwards will begin to expire in 2023. The remaining $381 million of the foreign net operating losses carry forward indefinitely. At October 31, 2022, we had foreign capital loss carryforwards of $108 million. The foreign capital losses carry forward indefinitely. At October 31, 2022, we had state tax credit carryforwards of approximately $87 million. The state tax credits carry forward indefinitely.

The breakdown between long-term deferred tax assets and deferred tax liabilities was as follows:

	October 31,	
	2022	2021
	(in millions)	
Long-term deferred tax assets (included within other assets)	$ 246	$ 309
Long-term deferred tax liabilities (included within other long-term liabilities)	(58)	(103)
Total	$ 188	$ 206

The breakdown between current and long-term income tax assets and liabilities, excluding deferred tax assets and liabilities, was as follows:

	October 31,	
	2022	2021
	(in millions)	
Current income tax assets (included within other current assets)	$ 87	$ 66
Long-term income tax assets (included within other assets)	11	6
Current income tax liabilities (included within other accrued liabilities)	(51)	(47)
Long-term income tax liabilities (included within other long-term liabilities)	(216)	(241)
Total	$ (169)	$ (216)

Uncertain Tax Positions

The aggregate changes in the balances of our gross unrecognized tax benefits including all federal, state and foreign tax jurisdictions are as follows:

	2022	2021	2020
		(in millions)	
Balance, beginning of year	$ 133	$ 195	$ 206
Additions for tax positions related to the current year	5	6	6
Additions for tax positions from prior years	—	4	—
Reductions for tax positions from prior years	(9)	—	—
Settlements with taxing authorities	—	(30)	—
Statute of limitations expirations	(6)	(42)	(17)
Balance, end of year	$ 123	$ 133	$ 195

As of October 31, 2022, we had $144 million of unrecognized tax benefits, including interest and penalties of which $121 million, if recognized, would affect our effective tax rate. However, approximately $23 million of the unrecognized tax benefits were related to state income tax positions that, if recognized, would be in the form of a deferred tax asset that would likely not affect our effective tax rate due to a valuation allowance.

We recognized tax benefit of $2 million in 2022, tax benefit of $19 million in 2021, and tax expense of $8 million in 2020, for interest and penalties related to unrecognized tax benefits. Interest and penalties accrued as of October 31, 2022 and 2021 were $21 million and $26 million, respectively.

In the U.S., tax years remain open back to the year 2018 for federal income tax purposes and for significant states. In other major jurisdictions where we conduct business, the tax years generally remain open back to the year 2012.

With these jurisdictions and the U.S., it is reasonably possible that there could be significant changes to our unrecognized tax benefits in the next twelve months due to either the expiration of a statute of limitation or a tax audit settlement which will be partially offset by an anticipated tax liability related to unremitted foreign earnings, where applicable. Given the number of years and numerous matters that remain subject to examination in various tax jurisdictions, management is unable to estimate the range of possible changes to the balance of our unrecognized tax benefits.

6. NET INCOME PER SHARE

The following is a reconciliation of the numerators and denominators of the basic and diluted net income per share computations for the periods presented below.

	Years Ended October 31,		
	2022	2021	2020
	(in millions)		
Numerator:			
Net income	$ 1,254	$ 1,210	$ 719
Denominators:			
Basic weighted average shares	299	304	309
Potential common shares — stock options and other employee stock plans	1	3	3
Diluted weighted average shares	300	307	312

The dilutive effect of share-based awards is reflected in diluted net income per share by application of the treasury stock method, which includes consideration of unamortized share-based compensation expense and the dilutive effect of in-the-money options and non-vested restricted stock units. Under the treasury stock method, the amount the employee must pay for exercising stock options and unamortized share-based compensation expense collectively are assumed proceeds to be used to repurchase hypothetical shares. An increase in the fair market value of the company's common stock can result in a greater dilutive effect from potentially dilutive awards.

We exclude stock options with exercise prices greater than the average market price of our common stock from the calculation of diluted earnings per share because their effect would be anti-dilutive. In addition, we exclude from the calculation of diluted earnings per share, stock options, ESPP, LTPP and restricted stock awards whose combined exercise price and unamortized fair value collectively were greater than the average market price of our common stock because their effect would also be anti-dilutive.

In 2022, 2021 and 2020, we issued share-based awards of approximately 1.4 million, 2.1 million and 2.4 million, respectively. For the years ended 2022, 2021 and 2020, the impacts of the anti-dilutive potential common shares that were excluded from the calculation of diluted earnings per share were not material.

7. INVENTORY

Inventory as of October 31, 2022 and 2021 consisted of the following:

	October 31,	
	2022	2021
	(in millions)	
Finished goods	$ 555	$ 463
Purchased parts and fabricated assemblies	483	367
Inventory	$ 1,038	$ 830

Inventory-related excess and obsolescence charges of $24 million were recorded in cost of products in 2022, $29 million in 2021 and $28 million in 2020. We record excess and obsolete inventory charges for both inventory on our site as well as inventory at our contract manufacturers and suppliers where we have non-cancelable purchase commitments.

8. PROPERTY, PLANT AND EQUIPMENT, NET

Property, plant and equipment as of October 31, 2022 and 2021, consisted of the following:

	October 31,	
	2022	2021
	(in millions)	
Land	$ 59	$ 61
Buildings and leasehold improvements	1,255	1,147
Machinery and equipment	674	638
Software	260	221
Total property, plant and equipment	2,248	2,067
Accumulated depreciation and amortization	(1,148)	(1,122)
Property, plant and equipment, net	$ 1,100	$ 945

There were no asset impairments in 2022. During 2021 and 2020 we recorded asset impairments of $2 million and $6 million, respectively. In 2020 asset impairments related to the shutdown of our sequencer development program. Depreciation expenses were $120 million in 2022, $122 million in 2021 and $119 million in 2020. In 2022 and 2021 we retired approximately $48 million and $35 million, respectively, of assets, the majority of which were fully depreciated and no longer in use.

9. LEASES

As a lessee, we have various non-cancelable operating lease agreements for office space, warehouses, distribution centers, research and development facilities, manufacturing and production locations as well as vehicles, personal computers and other equipment. Our real estate leases have remaining lease terms of one to thirty years, which represent the non-cancelable periods of the leases and include extension options that we determined are reasonably certain to be exercised. We exclude options that are not reasonably certain to be exercised from our lease terms, ranging from six months to twenty years. Our lease payments consist primarily of fixed rental payments for the right to use the underlying leased assets over the lease terms. We often receive incentives from our landlords, such as rent abatement periods, which effectively reduce the total lease payments owed for these leases. Vehicle, personal computer and other equipment operating leases have terms between three and five years.

The components of lease cost for operating leases were as follows:

	Year Ended October 31,		
	2022	2021	2020
	(in millions)		
Operating lease cost	$ 59	$ 59	$ 60
Short-term lease cost	2	2	1
Variable lease cost [(a)]	15	14	14
Sublease income	(14)	(13)	(14)
Total lease cost	$ 62	62	61

(a) Variable lease cost includes cancelable leases, non-fixed maintenance costs and non-recoverable transaction taxes.

Supplemental cash flow information related to leases was as follows:

	Year Ended October 31,		
	2022	2021	2020
	(in millions)		
Cash paid for amounts included in the measurement of lease liabilities:			
Operating cash flow from operating leases	$ 53	$ 57	$ 59
Non-cash right of use assets obtained in exchange for operating lease obligations	$ 38	$ 53	$ 37

Supplemental balance sheet information related to leases was as follows:

	Financial Statement Line Item	October 31, 2022	October 31, 2021
		(in millions, except lease term and discount rate)	
Assets:			
Operating lease:			
Right of use asset	Other assets	$ 150	$ 178
Liabilities:			
Current			
Operating lease liabilities	Other accrued liabilities	$ 51	$ 52
Long-term			
Operating lease liabilities	Other long-term liabilities	$ 101	$ 130
Weighted average remaining lease term (in years)			
Operating leases		7.4 years	7.6 years
Weighted average discount rate			
Operating leases		2.4 %	1.9 %

Future minimum rents payable as of October 31, 2022 under non-cancelable leases with initial terms exceeding one year reconcile to lease liabilities included in the consolidated balance sheet as follows:

	Operating Leases (in millions)
2023	$ 53
2024	36
2025	20
2026	11
2027	7
Thereafter	40
Total undiscounted future minimum lease payments	$ 167
Less: amount of lease payments representing interest	(15)
Present value of future minimum lease payments	$ 152
Less: current liabilities	(51)
Long-term lease liabilities	$ 101

As of October 31, 2022, we had no additional significant operating or finance leases that had not yet commenced.

As a lessor, we have contracts for equipment leased to customers primarily in connection with our diagnostics business which include both operating-type lease and sales-type finance lease arrangements. We account for the non-lease component under the revenue recognition ASC 606 guidance and the lease component under the leasing ASC 842 guidance. Equipment lease revenue for operating lease agreements is recognized as visualization kits and reagents are shipped over the life of the lease. The cost of customer leased equipment is recorded within property, plant and equipment, and is netted in the consolidated balance sheet with depreciation over the equipment's estimated useful life. For an arrangement that has been classified as a sales-type lease, revenue is recognized when the transfer of control of the underlying leased asset has occurred and the net investment lease recorded which is calculated at the present value of the remaining lease payments due from the lessee.

Revenue allocated to the lease income for both sales-type finance lease and operating lease rental arrangements represents less than one percent of total net revenue in the years ended October 31, 2022, 2021 and 2020, respectively.

As of October 31, 2022, the original cost and net book value of operating leased assets were $29 million and $4 million, respectively. As of October 31, 2022, lease receivables related to sales-type leases were $38 million. As of October 31, 2021,

the original cost and net book value of operating leased assets were $38 million and $7 million, respectively. As of October 31, 2021, lease receivables related to sales-type leases were $48 million.

10. GOODWILL AND OTHER INTANGIBLE ASSETS

The following table presents goodwill balances and the movements for each of our reportable segments during the years ended October 31, 2021 and 2022:

	Life Sciences and Applied Markets	Diagnostics and Genomics	Agilent CrossLab	Total
	(in millions)			
Goodwill as of October 31, 2020	$ 1,738	$ 1,599	$ 265	$ 3,602
Foreign currency translation impact	5	—	3	8
Goodwill arising from acquisitions and adjustments	—	365	—	365
Goodwill as of October 31, 2021	$ 1,743	$ 1,964	$ 268	$ 3,975
Foreign currency translation impact	(19)	(11)	(12)	(42)
Goodwill arising from acquisitions and adjustments	19	—	—	19
Goodwill as of October 31, 2022	$ 1,743	$ 1,953	$ 256	$ 3,952

In the first quarter of fiscal year 2022, we reorganized our operating segments and moved our chemistries and supplies business and our remarketed instruments business from our Agilent CrossLab business segment to our life sciences and applied markets business segment. As a result, we reassigned approximately $307 million of goodwill from our Agilent Crosslab business segment to our life sciences and applied markets business segment using the relative fair value allocation approach. In addition, we moved service revenue and cost of sales related to the previous acquisition of BioTek from our life sciences and applied markets business segment to our Agilent CrossLab business segment. As a result, we reassigned approximately $10 million of goodwill from our life sciences and applied markets segment to our Agilent Crosslab business segment using the relative fair value allocation approach. Goodwill balances as of October 31, 2020, have been recast to conform to this new presentation. There were no changes to our reporting units due to this reorganization. In addition, we performed a goodwill impairment test, and the results of the analysis indicated that the fair values for all three of our reporting units were in excess of their carrying values by substantial amounts; therefore, no impairment was indicated.

As of September 30, 2022, our annual impairment test date, we assessed goodwill for triggering events and circumstances, and determined no impairment of goodwill was indicated for our reporting units.

The component parts of other intangible assets at October 31, 2021 and 2022 are shown in the table below:

	Other Intangible Assets		
	Gross Carrying Amount	Accumulated Amortization	Net Book Value
	(in millions)		
As of October 31, 2021:			
Purchased technology	$ 1,742	$ 972	$ 770
Backlog	8	3	5
Trademark/Tradename	196	133	63
Customer relationships	357	228	129
Third-party technology and licenses	11	8	3
Total amortizable intangible assets	$ 2,314	$ 1,344	$ 970
In-Process R&D	11	—	11
Total	$ 2,325	$ 1,344	$ 981
As of October 31, 2022:			
Purchased technology	$ 1,733	$ 1,068	$ 665
Backlog	8	8	—
Trademark/Tradename	196	148	48
Customer relationships	180	105	75
Third-party technology and licenses	32	9	23
Total amortizable intangible assets	$ 2,149	$ 1,338	$ 811
In-Process R&D	10	—	10
Total	$ 2,159	$ 1,338	$ 821

In 2022, we acquired Polymer Standards Service GmbH (PSS), a provider of solutions in the field of polymer characterization for $41 million. During fiscal year 2022, we recorded additions to goodwill of $19 million and additions to other intangible assets of $35 million related to the acquisition of PSS and advanced artificial intelligence technology. During the year other intangible assets decreased $3 million due to the impact of foreign currency translation.

In 2021, we acquired privately-owned Resolution Bioscience, Inc., a biotechnology company focused on the development and commercialization of next-generation sequencing-based ("NGS") precision oncology solutions, for $561 million cash plus potential future contingent payments of up to $145 million upon the achievement of certain milestones. See also Note 12, "Fair Value Measurements" for additional information. During fiscal year 2021, we recorded additions to goodwill of $365 million and additions to other intangible assets of $343 million related to this acquisition. During the year, other intangible assets increased $2 million due to the impact of foreign currency translation.

In general, for United States federal tax purposes, goodwill from asset purchases is amortizable; however, any goodwill created as part of a stock acquisition is not deductible.

There were no impairments of indefinite-lived intangible assets during fiscal years 2022 and 2021. During fiscal year 2020, we recorded an impairment of in-process research and development of $90 million in research and development expenses in the consolidated statement of operations which was related to the shutdown of our sequencer development program in our diagnostics and genomics segment. During fiscal years 2022, 2021 and 2020, there were no impairments of finite-lived intangible assets recorded. During 2022, we also wrote-off the gross carrying amounts of $184 million and the related accumulated amortization of fully amortized intangible assets which were no longer being used.

Amortization expense of intangible assets was $192 million in 2022, $195 million in 2021, and $186 million in 2020.

Future amortization expense related to existing finite-lived purchased intangible assets associated with business combinations for the next five fiscal years and thereafter is estimated below:

Estimated future amortization expense:

	(in millions)
2023	$ 145
2024	$ 126
2025	$ 102
2026	$ 72
2027	$ 71
Thereafter	$ 295

11. INVESTMENTS

The following table summarizes the company's equity investments as of October 31, 2022 and 2021 (net book value):

	October 31,	
	2022	2021
	(in millions)	
Short-Term		
Equity investments - with readily determinable fair value	$ —	91
Long-Term		
Equity investments - without readily determinable fair value	$ 141	$ 120
Equity investments - with readily determinable fair value	23	31
Trading securities	31	34
Total long-term investments	$ 195	$ 185

Equity investments without readily determinable fair value (RDFV) consist of non-marketable equity securities issued by private companies. These investments are accounted for using the measurement alternative at cost adjusting for impairments and observable price changes (orderly transactions for the identical or a similar security from the same issuer). The adjustments are included in net income in the period in which they occur. Equity investments with RDFV consist of marketable equity securities which are publicly traded and are reported at fair value, with gains or losses resulting from changes in fair value included in net income. Other investments with RDFV consist of shares we own in a special fund and are reported at fair value, with gains or losses resulting from changes in fair value included in net income.

Trading securities, which are comprised of mutual funds, bonds and other similar instruments, other investments and deferred compensation liability are reported at fair value, with gains or losses resulting from changes in fair value recognized currently in net income.

Our investments without RDFV and marketable equity securities with RDFV are subject to periodic impairment review. The impairment analysis requires significant judgment to identify events or circumstances that would likely have a significant adverse effect on the future value of the investment.

Gains and losses reflected in other income (expense), net for our equity investments with RDFV and equity investments without RDFV are summarized below:

	Years Ended October 31,		
	2022	2021	2020
	(in millions)		
Net gain (loss) recognized during the period on equity securities	$ (67)	$ 98	$ 27
Less: Net gain on equity securities sold during the period	11	6	—
Unrealized gain (loss) on equity securities held as of the end of the period	$ (78)	$ 92	$ 27

Unrealized gains on our equity securities without RDFV were $6 million, $17 million and $27 million in 2022, 2021 and 2020, respectively.

In 2022, net unrealized losses on our trading securities were $7 million. In 2021 and 2020, net unrealized gains on our trading securities were $8 million and $2 million, respectively.

There were no impairments of investments in 2022, 2021 and 2020.

12. FAIR VALUE MEASUREMENTS

The authoritative guidance defines fair value as the price that would be received from selling an asset or paid to transfer a liability in an orderly transaction between market participants at the measurement date. When determining the fair value measurements for assets and liabilities required or permitted to be recorded at fair value, we consider the principal or most advantageous market and assumptions that market participants would use when pricing the asset or liability.

Fair Value Hierarchy

The guidance establishes a fair value hierarchy that prioritizes the use of inputs used in valuation techniques into three levels. A financial instrument's categorization within the fair value hierarchy is based upon the lowest level of input that is significant to the fair value measurement. There are three levels of inputs that may be used to measure fair value:

Level 1 — applies to assets or liabilities for which there are quoted prices in active markets for identical assets or liabilities.

Level 2 — applies to assets or liabilities for which there are inputs other than quoted prices included within level 1 that are observable, either directly or indirectly, for the asset or liability such as: quoted prices for similar assets or liabilities in active markets; quoted prices for identical or similar assets or liabilities in less active markets; or other inputs that can be derived principally from, or corroborated by, observable market data.

Level 3 — applies to assets or liabilities for which there are unobservable inputs to the valuation methodology that are significant to the measurement of the fair value of the assets or liabilities.

Financial Assets and Liabilities Measured at Fair Value on a Recurring Basis

Financial assets and liabilities measured at fair value on a recurring basis as of October 31, 2022 were as follows:

	October 31, 2022	Fair Value Measurement at October 31, 2022 Using: Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	(in millions)			
Assets:				
Short-term				
Cash equivalents (money market funds)	$ 492	$ 492	$ —	$ —
Derivative instruments (foreign exchange contracts)	31	—	31	—
Long-term				
Trading securities	31	31	—	—
Other investments	23	—	23	—
Total assets measured at fair value	$ 577	$ 523	$ 54	$ —
Liabilities:				
Short-term				
Derivative instruments (foreign exchange contracts)	$ 5	$ —	$ 5	$ —
Contingent consideration	66	—	—	66
Long-term				
Deferred compensation liability	31	—	31	—
Contingent consideration	1	—	—	1
Total liabilities measured at fair value	$ 103	$ —	$ 36	$ 67

Financial assets and liabilities measured at fair value on a recurring basis as of October 31, 2021 were as follows:

	October 31, 2021	Fair Value Measurement at October 31, 2021 Using: Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
	(in millions)			
Assets:				
Short-term				
Cash equivalents (money market funds)	$ 919	$ 919	$ —	$ —
Derivative instruments (foreign exchange contracts)	9	—	9	—
Short-term investments - Equity securities with RDFV	91	83	8	—
Long-term				
Trading securities	34	34	—	—
Other investments	31	—	31	—
Total assets measured at fair value	$ 1,084	$ 1,036	$ 48	$ —
Liabilities:				
Short-term				
Derivative instruments (foreign exchange contracts)	$ 5	$ —	$ 5	$ —
Contingent consideration	62	—	—	62
Long-term				
Deferred compensation liability	34	—	34	—
Contingent consideration	27	—	—	27
Total liabilities measured at fair value	$ 128	$ —	$ 39	$ 89

Our money market funds and trading securities are generally valued using quoted market prices and therefore are classified within level 1 of the fair value hierarchy. Our derivative financial instruments are classified within level 2, as there is

not an active market for each hedge contract, but the inputs used to calculate the value of the instruments are tied to active markets. Our deferred compensation liability is classified as level 2 because, although the values are not directly based on quoted market prices, the inputs used in the calculations are observable.

Short-term investments - equity securities with readily determinable fair value ("RDFV") are shares in marketable equity securities which are classified as Level 1 in the fair value hierarchy as they are measured based on quotes in active markets. Equity securities with RDFV also includes potential shares received from an equity investment in a company that went public and can vest under certain stock performance circumstances. These have been classified as Level 2 because the fair value was calculated using the Monte Carlo simulation method in which quoted market price and other observable inputs are used.

Trading securities, which are comprised of mutual funds, bonds and other similar instruments, other investments and deferred compensation liability are reported at fair value, with gains or losses resulting from changes in fair value recognized currently in net income. Certain derivative instruments are reported at fair value, with unrealized gains and losses, net of tax, included in accumulated other comprehensive income (loss) within stockholders' equity. Realized gains and losses from the sale of these instruments are recorded in net income.

Other investments represent shares we own in a special fund that targets underlying investments of approximately 40 percent in debt securities and 60 percent in equity securities. These shares have been classified as level 2 because, although the shares of the fund are not traded on any active stock exchange, each of the individual underlying securities are or can be derived from and hence we have a readily determinable value for the underlying securities, from which we are able to determine the fair market value for the special fund itself.

Contingent Consideration. The fair value of the contingent consideration liability relates to milestone payments in connection with the acquisition of advanced artificial intelligence technology in February 2022 and the acquisition of Resolution Bioscience in April 2021.

Resolution Bioscience. The fair value of the potential future milestone payments, which is set to certain revenue and technical targets, was based on (i) the probability of achieving the relevant revenue targets and technical milestones and (ii) the timing of achieving such milestones, which are significant unobservable inputs, and has been classified as Level 3. We used the Monte Carlo simulation approach to estimate the fair value of the revenue component. The fair value of the revenue component was zero at October 31, 2022. The probability-weighted expected return method was used to estimate the fair value of the technical target component. Assumptions used in the calculations include probability of success, duration of the earn-out and discount rate. A change in any of these unobservable inputs can significantly change the fair value of the contingent consideration. As of October 31, 2022, the expected maximum earn-out period for the contingent payments does not exceed 2.2 years and potential future payments will not exceed $145 million.

The contingent consideration liability is our only Level 3 asset or liability. A summary of the Level 3 activity follows:

	Contingent Consideration (in millions)
Balance at October 31, 2020	$ —
Additions to contingent consideration (including measurement period adjustment)	110
Change in fair value (included within selling, general and administrative expenses)	(21)
Balance at October 31, 2021	$ 89
Additions to contingent consideration	3
Change in fair value (included within selling, general and administrative expenses)	(25)
Balance at October 31, 2022	67

The fair value of the contingent consideration liability as of October 31, 2022 was estimated to be $67 million of which $66 million was recorded in other accrued liabilities and $1 million was recorded in other long-term liabilities on the consolidated balance sheet. The net decrease in the fair value of the contingent consideration was primarily driven by a change in the probability of achieving the relevant revenue targets.

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

Long-Lived Assets

For assets measured at fair value on a non-recurring basis, the following table summarizes the impairments included in net income for the years ended October 31, 2022, 2021 and 2020:

	Years Ended October 31,		
	2022	2021	2020
		(in millions)	
Long-lived assets held and used	$ —	$ 2	$ 98
Long-lived assets held for sale	$ —	$ —	$ —

For the year ended October 31, 2022, there were no impairments of long-lived assets held and used. For the year ended October 31, 2021, long-lived assets held and used with a carrying value of $2 million were written down to their fair value of zero, resulting in an impairment of $2 million. For the year ended October 31, 2020, long-lived assets held and used, including indefinite lived in-process research and development intangible assets, with a carrying amount of $98 million were written down to their fair value of zero, resulting in an impairment charge of $98 million related to the shutdown of our sequencer development program and other assets in our diagnostics and genomics segment.

There were no impairments of long-lived assets held for sale in 2022, 2021 and 2020.

Fair values for the impaired long-lived assets during 2020 were measured using level 3 inputs. To determine the fair value of long-lived assets in 2020, we used the income approach based on projected discounted cash flows expected to be generated by the long-lived assets over the remaining useful life.

Non-Marketable Equity Securities

For the years ended October 31, 2022, 2021 and 2020, there were no impairments in non-marketable securities without readily determinable fair value.

For the years ended October 31, 2022, 2021 and 2020, unrealized gains of $6 million, $17 million and $27 million respectively, were included in net income as an adjustment to the carrying value of non-marketable equity securities without readily determinable fair value based on an observable market transaction.

As of October 31, 2022, the cumulative net gain (loss) on our non-marketable equity securities without readily determinable fair values was comprised of a $35 million gain and no losses, and the carrying amount was $141 million. As of October 31, 2021, the cumulative net gain (loss) on our non-marketable equity securities without readily determinable fair values was comprised of a $29 million gain and no losses, and the carrying amount was $120 million.

Fair values for the non-marketable securities included in long-term investments on the consolidated balance sheet were measured using Level 3 inputs because they are primarily equity stock issued by private companies without quoted market prices. To estimate the fair value of our non-marketable securities, we use the measurement alternative to record these investments at cost and adjust for impairments and observable price changes (orderly transactions for the identical or a similar security from the same issuer) as and when they occur.

13. DERIVATIVES

We are exposed to foreign currency exchange rate fluctuations and interest rate changes in the normal course of our business. As part of our risk management strategy, we use derivative instruments, primarily forward contracts and purchased options to hedge economic and/or accounting exposures resulting from changes in foreign currency exchange rates.

Cash Flow Hedges

We enter into foreign exchange contracts to hedge our forecasted operational cash flow exposures resulting from changes in foreign currency exchange rates. These foreign exchange contracts, carried at fair value, have maturities between one and

twelve months. These derivative instruments are designated and qualify as cash flow hedges under the criteria prescribed in the authoritative guidance and are assessed for effectiveness against the underlying exposure every reporting period. For open contracts as of October 31, 2022, changes in the time value of the foreign exchange contract are excluded from the assessment of hedge effectiveness and are recognized in cost of sales over the life of the foreign exchange contract. The changes in fair value of the effective portion of the derivative instrument are recognized in accumulated other comprehensive income (loss). Amounts associated with cash flow hedges are reclassified to cost of sales in the consolidated statement of operations when the forecasted transaction occurs. If it becomes probable that the forecasted transaction will not occur, the hedge relationship will be de-designated and amounts accumulated in other comprehensive income (loss) will be reclassified to other income (expense), net in the current period. Changes in the fair value of the ineffective portion of derivative instruments are recognized in other income (expense), net in the consolidated statement of operations in the current period. We record the premium paid (time value) of an option on the date of purchase as an asset. For options designated as cash flow hedges, changes in the time value are excluded from the assessment of hedge effectiveness and are recognized in cost of sales over the life of the option contract. For the years ended October 31, 2022, 2021 and 2020, ineffectiveness and gains and losses recognized in other income (expense), net due to de-designation of cash flow hedge contracts were not significant.

In February 2016, Agilent executed three forward-starting pay fixed/receive variable interest rate swaps for the notional amount of $300 million in connection with future interest payments to be made on our 2026 senior notes issued on September 15, 2016. These derivative instruments were designated and qualified as cash flow hedges under the criteria prescribed in the authoritative guidance. The swap arrangements were terminated on September 15, 2016 with a payment of $10 million, and we recognized this as a deferred loss in accumulated other comprehensive income (loss) which is being amortized to interest expense over the life of the 2026 senior notes. The remaining loss to be amortized related to the interest rate swap agreements at October 31, 2022 was $4 million.

In August 2019, Agilent executed treasury lock agreements for $250 million in connection with future interest payments to be made on our 2029 senior notes issued on September 16, 2019. We designated the treasury lock as a cash flow hedge. The treasury lock contracts were terminated on September 6, 2019 and we recognized a deferred loss of $6 million in accumulated other comprehensive income (loss) which is being amortized to interest expense over the life of the 2029 senior notes. The remaining loss to be amortized related to the treasury lock agreements at October 31, 2022 was $4 million.

Net Investment Hedges

We enter into foreign exchange contracts to hedge net investments in foreign operations to mitigate the risk of adverse movements in exchange rates. These foreign exchange contracts are carried at fair value and are designated and qualify as net investment hedges under the criteria prescribed in the authoritative guidance. Changes in fair value of the effective portion of the derivative instrument are recognized in accumulated other comprehensive income (loss)- translation adjustment and are assessed for effectiveness against the underlying exposure every reporting period. If the company's net investment changes during the year, the hedge relationship will be assessed and de-designated if the hedge notional amount is outside of prescribed tolerance with a gain/loss reclassified from other comprehensive income (loss) to other income (expense) in the current period. For the year ended October 31, 2022, ineffectiveness and the resultant effect of any gains or losses recognized in other income (expense) due to de-designation of the hedge contracts were not significant.

Other Hedges

Additionally, we enter into foreign exchange contracts to hedge monetary assets and liabilities that are denominated in currencies other than the functional currency of our subsidiaries. These foreign exchange contracts are carried at fair value and do not qualify for hedge accounting treatment and are not designated as hedging instruments. Changes in value of the derivative instruments are recognized in other income (expense), net in the consolidated statement of operations, in the current period, along with the offsetting foreign currency gain or loss on the underlying assets or liabilities.

Our use of derivative instruments exposes us to credit risk to the extent that the counterparties may be unable to meet the terms of the agreement. We do, however, seek to mitigate such risks by limiting our counterparties to major financial institutions which are selected based on their credit ratings and other factors. We have established policies and procedures for mitigating credit risk that include establishing counterparty credit limits, monitoring credit exposures, and continually assessing the creditworthiness of counterparties.

A number of our derivative agreements contain threshold limits to the net liability position with counterparties and are dependent on our corporate credit rating determined by the major credit rating agencies. The counterparties to the derivative

instruments may request collateralization, in accordance with derivative agreements, on derivative instruments in net liability positions.

The aggregate fair value of all derivative instruments with credit-risk-related contingent features that were in a net liability position as of October 31, 2022, was $1 million. The credit-risk-related contingent features underlying these agreements had not been triggered as of October 31, 2022.

There were 270 foreign exchange forward contracts open as of October 31, 2022, and designated as cash flow hedges. There were 190 foreign exchange forward contracts open as of October 31, 2022, not designated as hedging instruments. There were 3 foreign exchange forward contracts open as of October 31, 2022, and designated as a net investment hedge.

The aggregated notional amounts by currency and designation as of October 31, 2022 were as follows:

	Derivatives Designated as Cash Flow Hedges	Derivatives Designated as Net Investment Hedges	Derivatives Not Designated as Hedging Instruments
	Forward Contracts USD	Forward Contracts USD	Forward Contracts USD
Currency	Buy/(Sell)	Buy/(Sell)	Buy/(Sell)
		(in millions)	
Euro	$ (78)	$ (10)	$ (18)
British Pound	(66)	—	13
Canadian Dollar	(55)	—	(17)
Japanese Yen	(93)	—	(42)
Danish Krone	—	—	25
Korean Won	(90)	—	(10)
Singapore Dollar	19	—	24
Swiss Franc	—	—	(13)
Chinese Yuan Renminbi	(87)	—	(100)
Taiwan Dollar	—	—	(16)
India Rupee	—	—	(11)
Other	4	—	3
	$ (446)	$ (10)	$ (162)

Derivative instruments are subject to master netting arrangements and are disclosed gross in the balance sheet in accordance with the authoritative guidance.

The gross fair values and balance sheet location of derivative instruments held in the consolidated balance sheet as of October 31, 2022 and 2021 were as follows:

Fair Values of Derivative Instruments

Asset Derivatives			Liability Derivatives		
	Fair Value			Fair Value	
Balance Sheet Location	October 31, 2022	October 31, 2021	Balance Sheet Location	October 31, 2022	October 31, 2021
		(in millions)			
Derivatives designated as hedging instruments:					
Cash flow hedges					
Foreign exchange contracts					
Other current assets	$ 23	$ 6	Other accrued liabilities	$ 2	$ 2
Derivatives not designated as hedging instruments:					
Foreign exchange contracts					
Other current assets	$ 8	$ 3	Other accrued liabilities	$ 3	$ 3
Total derivatives	$ 31	$ 9		$ 5	$ 5

The effects of derivative instruments for foreign exchange contracts designated as hedging instruments and not designated as hedging instruments in our consolidated statement of operations were as follows:

	Years Ended October 31,		
	2022	2021	2020
		(in millions)	
Derivatives designated as hedging instruments:			
Cash flow hedges			
Foreign exchange contracts:			
Loss reclassified from accumulated other comprehensive income (loss) into interest expense	$ (2)	$ (1)	$ (1)
Gain (loss) recognized in accumulated other comprehensive income (loss)	$ 56	$ 2	$ (12)
Gain (loss) reclassified from accumulated other comprehensive income (loss) into cost of sales	$ 36	$ (16)	$ (1)
Gain on time value of forward contracts recorded in cost of sales	$ —	$ —	$ 2
Net investment hedges			
Foreign exchange contracts:			
Gain (loss) recognized in accumulated other comprehensive income (loss) - translation adjustment	$ 5	$ 1	$ (5)
Gain on time value of forward contracts recorded in other income (expense)	—	1	—
Derivatives not designated as hedging instruments:			
Gain (loss) recognized in other income (expense), net	$ 10	$ —	$ (1)

At October 31, 2022 the total amount of existing net gain that is expected to be reclassified from accumulated other comprehensive income (loss) is $24 million. Within the next twelve months it is estimated that $20 million of gain included within the net amount of accumulated other comprehensive income (loss) will be reclassified to cost of sales in respect of cash flow hedges.

14. RETIREMENT PLANS AND POST RETIREMENT PENSION PLANS

General. Substantially all of our employees are covered under various defined benefit and/or defined contribution retirement plans. Additionally, we sponsor post-retirement health care benefits for our eligible U.S. employees.

Agilent provides defined benefits to U.S. employees who meet eligibility criteria under the Agilent Technologies, Inc. Retirement Plan (the "RP").

Effective November 1, 2014, Agilent's U.S. RP was closed to new entrants including new employees, new transfers to the U.S. payroll and rehires. As of April 30, 2016, benefits under the RP were frozen. Any pension benefit earned in the U.S. Plans through April 30, 2016, remained fully vested and is payable on termination, retirement, death, or permanent disability, based on an eligible participant's years of credited service, age and other criteria. There are no additional benefit accruals after April 30, 2016.

For eligible service through October 31, 1993, the benefit payable under the Agilent Retirement Plan is reduced by any amounts due to the eligible employee under the Agilent defined contribution Deferred Profit-Sharing Plan (the "DPSP"), which was closed to new participants as of November 1993.

As of October 31, 2022 and 2021, the fair value of plan assets of the DPSP was $93 million and $136 million, respectively. Note that the projected benefit obligation for the DPSP equals the fair value of plan assets.

Agilent also maintains a Supplemental Benefits Retirement Plan ("SBRP") in the U.S., which is a supplemental unfunded non-qualified defined benefit plan to provide benefits that would be provided under the RP but for limitations imposed by the Internal Revenue Code. The RP and the SBRP comprise the "U.S. Plans" in the tables below.

Eligible employees outside the U.S. generally receive retirement benefits under various retirement plans based upon factors such as years of service and/or employee compensation levels. Eligibility is generally determined in accordance with local statutory requirements.

Post-Retirement Medical Benefit Plans. In addition to receiving retirement benefits, Agilent U.S. employees who meet eligibility requirements as of their termination date may participate in the Agilent Technologies, Inc. Health Plan for Retirees. As of January 1, 2020, the Health Plan for Retirees is comprised solely of insured pre-65 HMOs as the self-funded Pre-Medicare Medical Plan was eliminated effective December 31, 2019. The Health Plan for Retirees was closed to new retiree entrants after December 31, 2020.

If eligible, a retiree may receive a fixed amount (different fixed amounts for different groups) under the Retiree Medical Account ("RMA") or a fixed monthly amount under the Agilent Reimbursement Arrangement ("ARA").

Any new employee hired on or after November 1, 2014, will not be eligible to participate in the post-retirement medical benefit plans upon retiring.

401(k) Defined Contribution Plan. Eligible Agilent U.S. employees may participate in the Agilent Technologies, Inc. 401(k) Plan. We match contributions to employees up to a maximum of 6 percent of an employee's annual eligible compensation. Effective May 1, 2016 until April 30, 2022, we provided an additional transitional company contribution for certain eligible employees equal to 3 percent, 4 percent or 5 percent of an employee's annual eligible compensation due to the RP benefits being frozen. The maximum employee contribution to the 401(k) Plan is 50 percent of an employee's annual eligible compensation, subject to regulatory limitations. The 401(k) Plan employer expense included in income from operations was $46 million in 2022, $43 million in 2021 and $41 million in 2020.

Components of Net periodic cost. The service cost component is recorded in cost of sales and operating expenses in the consolidated statement of operations. All other cost components are recorded in other income (expense), net in the consolidated statement of operations. The company uses alternate methods of amortization as allowed by the authoritative guidance which amortizes the actuarial gains and losses on a consistent basis for the years presented. For U.S. Plans, gains and losses are amortized over the average future lifetime of participants using the corridor method. For most Non-U.S. Plans and U.S. Post-Retirement Benefit Plans, gains and losses are amortized using a separate layer for each year's gains and losses.

For the years ended October 31, 2022, 2021 and 2020, components of net periodic benefit cost and other amounts recognized in other comprehensive income were comprised of:

	Pensions						U.S. Post-Retirement Benefit Plans		
	U.S. Plans			Non-U.S. Plans					
	2022	2021	2020	2022	2021	2020	2022	2021	2020
	(in millions)								
Net periodic benefit cost (benefit)									
Service cost — benefits earned during the period	$ —	$ —	$ —	$ 22	$ 22	$ 24	$ 1	$ 1	$ 1
Interest cost on benefit obligation	14	14	15	9	8	8	2	2	3
Expected return on plan assets	(27)	(29)	(28)	(43)	(49)	(47)	(6)	(6)	(7)
Amortization of net actuarial (gain) loss	—	4	3	25	53	49	(2)	4	4
Amortization of prior service benefit	—	—	—	—	—	—	(1)	(1)	(7)
Total periodic benefit cost (benefit)	$ (13)	$ (11)	$ (10)	$ 13	$ 34	$ 34	$ (6)	$ —	$ (6)
Settlement loss	$ 4	$ 1	$ 4	$ —	$ —	$ —	$ —	$ —	$ —
Other changes in plan assets and benefit obligations recognized in other comprehensive (income) loss									
Net actuarial (gain) loss	$ 16	$ (92)	$ 26	$ (83)	$ (114)	$ 20	$ 15	$ (30)	$ 5
Amortization of net actuarial (gain) loss	—	(4)	(3)	(25)	(53)	(49)	2	(4)	(4)
Amortization of prior service benefit	—	—	—	—	—	—	1	1	7
Loss due to settlement	(4)	(1)	(4)	—	—	—	—	—	—
Foreign currency	—	—	—	11	5	10	—	—	—
Total recognized in other comprehensive (income) loss	$ 12	$ (97)	$ 19	$ (97)	$ (162)	$ (19)	$ 18	$ (33)	$ 8
Total recognized in net periodic benefit cost (benefit) and other comprehensive (income) loss	$ 3	$ (107)	$ 13	$ (84)	$ (128)	$ 15	$ 12	$ (33)	$ 2

Funded Status. As of October 31, 2022 and 2021, the funded status of the defined benefit and post-retirement benefit plans was:

	U.S. Defined Benefit Plans		Non-U.S. Defined Benefit Plans		U.S. Post-Retirement Benefit Plans	
	2022	2021	2022	2021	2022	2021
	(in millions)					
Change in fair value of plan assets:						
Fair value — beginning of year	$ 551	$ 439	$ 1,093	$ 945	$ 116	$ 93
Actual return on plan assets	(122)	138	(147)	160	(26)	28
Employer contributions	—	—	17	19	—	—
Participants' contributions	—	—	1	1	—	—
Benefits paid	(10)	(8)	(35)	(31)	(5)	(5)
Settlements	(23)	(18)	—	—	—	—
Currency impact	—	—	(181)	(1)	—	—
Fair value — end of year	$ 396	$ 551	$ 748	$ 1,093	$ 85	$ 116
Change in benefit obligation:						
Benefit obligation — beginning of year	$ 512	$ 510	$ 1,100	$ 1,094	$ 84	$ 94
Service cost	—	—	22	22	1	1
Interest cost	14	14	9	8	2	2
Participants' contributions	—	—	1	1	—	—
Actuarial (gain) loss	(133)	15	(262)	2	(17)	(8)
Benefits paid	(10)	(8)	(35)	(31)	(5)	(5)
Settlements	(26)	(19)	—	—	—	—
Currency impact	—	—	(170)	4	—	—
Benefit obligation — end of year	$ 357	$ 512	$ 665	$ 1,100	$ 65	$ 84
Overfunded (underfunded) status of PBO	$ 39	$ 39	$ 83	$ (7)	$ 20	$ 32
Amounts recognized in the consolidated balance sheet consist of:						
Other assets	$ 42	$ 46	$ 140	$ 160	$ 20	$ 32
Employee compensation and benefits	(1)	(1)	—	—	—	—
Retirement and post-retirement benefits	(2)	(6)	(57)	(167)	—	—
Total net asset (liability)	$ 39	$ 39	$ 83	$ (7)	$ 20	$ 32
Amounts Recognized in Accumulated Other Comprehensive Income (Loss):						
Actuarial (gains) losses	$ 48	$ 36	$ 52	$ 149	$ (6)	$ (23)
Prior service costs (benefits)	—	—	—	—	(3)	(4)
Total	$ 48	$ 36	$ 52	$ 149	$ (9)	$ (27)

The actuarial gains and losses related to the change in plan obligations were a total of $412 million net gain for 2022 and $9 million net loss for 2021. The actuarial net gain that arose in 2022 was primarily due to increases in discount rates and changes in other financial and demographic assumptions partially offset by losses due to plan experience. The actuarial net loss that arose in 2021 was primarily due to changes in financial and demographic assumptions and losses due to plan experience offset by increases in discount rates.

Investment Policies and Strategies as of October 31, 2022. In the U.S., target asset allocations for our retirement and post-retirement benefit plans were approximately 50 percent to equities and approximately 50 percent to fixed income investments. Our DPSP target asset allocation is approximately 60 percent to equities and approximately 40 percent to fixed income investments. Approximately 1 percent of the retirement and post-retirement plans consists of limited partnerships. The general investment objective for all our plan assets is to obtain the optimum rate of investment return on the total investment portfolio consistent with the assumption of a reasonable level of risk. Specific investment objectives for the plans' portfolios are to: maintain and enhance the purchasing power of the plans' assets; achieve investment returns consistent with the level of risk being taken; and earn performance rates of return in accordance with the benchmarks adopted for each asset class. Outside the U.S., our target asset allocation ranges from 15 percent to 60 percent to equities, from 30 percent to 80 percent to fixed income investments, from zero to 25 percent to real estate and from zero to 55 percent to annuity contracts, depending on the plan. All plans' assets are broadly diversified. Due to fluctuations in equity and bond markets, our actual allocations of plan assets at October 31, 2022, may differ from the target allocation. Our policy is to bring the actual allocation in line with the target allocation.

Equity securities include exchange-traded common stock and preferred stock of companies from broadly diversified industries. Fixed income securities include a global portfolio of corporate bonds of companies from diversified industries, government securities, mortgage-backed securities, asset-backed securities, derivative instruments and other. Real estate securities include holdings of managed investment funds which invest primarily in the equity instruments of real estate investment trusts and other similar real estate investments. Other investments include a group trust consisting primarily of private equity partnerships. Portions of the cash and cash equivalent, equity, and fixed income investments are held in commingled funds that are valued using Net Asset Value (“NAV”) as the practical expedient. In addition, some of the investments valued using NAV as the practical expedient may have limits on their redemption to weekly or monthly and/or may require prior written notice specified by each fund. In December 2021, we entered into an insurance buy-in contract for a portion of benefit obligations under the U.K. defined benefit plan which was funded from existing pension plan assets with no adjustment made to the benefit obligations. It has been classified as an “Annuity Contract” since the insurance buy-in contract is similar to an annuity contract. It matches cash flows with future benefit payments for listed pensioners as of the contract date with the obligation remaining with the plan. This contract is issued by a third-party insurance company with no affiliation to us.

Fair Value. The measurement of the fair value of pension and post-retirement plan assets uses the valuation methodologies and the inputs as described in Note 12, "Fair Value Measurements".

Cash and Cash Equivalents - Cash and cash equivalents consist of short-term investment funds. The funds also invest in short-term domestic fixed income securities and other securities with debt-like characteristics emphasizing short-term maturities and quality. Some of our cash and cash equivalents are held in commingled funds. Other cash and cash equivalents are generally classified as Level 2 investments.

Equity - Some equity securities consisting of common and preferred stock that are not traded on an active market are valued at quoted prices reported by investment dealers based on the underlying terms of the security and comparison to similar securities traded on an active market; these are classified as Level 2 investments. Securities which have quoted prices in active markets are classified as Level 1 investments.

Fixed Income - Some of the fixed income securities are not actively traded and are valued at quoted prices based on the terms of the security and comparison to similar securities traded on an active market; these are classified as Level 2 investments. Securities which have quoted prices in active markets are classified as Level 1 investments.

Real Estate - Real estate securities include holdings of managed investment funds which invest primarily in the equity instruments of real estate investment trust and other similar real estate investments. Since the existing securities have quoted prices in active markets, it has been classified as level 1 and grouped with equity.

Annuity Contract – This consists of the U.K. insurance buy-in contract. Since it is valued on an insurer pricing basis, which reflects the purchase price adjusted for changes in discount rates and other actuarial assumptions which approximates fair value, it has been classified as level 3.

Other Investments - Other investments also include partnership investments where, due to their private nature, pricing inputs are not readily observable. Asset valuations are developed by the general partners that manage the partnerships. These valuations are based on proprietary appraisals, application of public market multiples to private company cash flows, utilization of market transactions that provide valuation information for comparable companies and other methods. Holdings of limited partnerships are classified as Level 3.

Agilent has adopted the accounting guidance related to the presentation of certain investments using the NAV practical expedient. The accounting guidance exempts investments using this practical expedient from categorization within the fair value hierarchy.

The following tables present the fair value of U.S. Defined Benefit Plans assets classified under the appropriate level of the fair value hierarchy as of October 31, 2022 and 2021.

		Fair Value Measurement at October 31, 2022 Using			
	October 31, 2022	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling [1]
			(in millions)		
Cash and Cash Equivalents	$ 1	$ —	$ —	$ —	$ 1
Equity	194	49	—	—	145
Fixed Income	199	—	—	—	199
Other Investments	2	—	—	2	—
Total assets measured at fair value	$ 396	$ 49	$ —	$ 2	$ 345

(1) Investments measured at the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy.

		Fair Value Measurement at October 31, 2021 Using			
	October 31, 2021	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling [1]
			(in millions)		
Cash and Cash Equivalents	$ 2	$ —	$ —	$ —	$ 2
Equity	276	62	—	—	214
Fixed Income	271	2	—	—	269
Other Investments	2	—	—	2	—
Total assets measured at fair value	$ 551	$ 64	$ —	$ 2	$ 485

(1) Investments measured at the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy.

For U.S. Defined Benefit Plans assets measured at fair value using significant unobservable inputs (level 3), the following table summarizes the change in balances during 2022 and 2021:

	Years Ended October 31.	
	2022	2021
Balance, beginning of year	$ 2	$ 2
Realized gains/(losses)	—	1
Unrealized gains/(losses)	—	—
Purchases, sales, issuances, and settlements	—	(1)
Transfers in (out)	—	—
Balance, end of year	$ 2	$ 2

The following tables present the fair value of U.S. Post-Retirement Benefit Plans assets classified under the appropriate level of the fair value hierarchy as of October 31, 2022 and 2021.

		Fair Value Measurement at October 31, 2022 Using			
	October 31, 2022	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling [1]
			(in millions)		
Cash and Cash Equivalents	$ —	$ —	$ —	$ —	$ —
Equity	42	10	—	—	32
Fixed Income	42	—	—	—	42
Other Investments	1	—	—	1	—
Total assets measured at fair value	$ 85	$ 10	$ —	$ 1	$ 74

(1) Investments measured at the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy.

		Fair Value Measurement at October 31, 2021 Using			
	October 31, 2021	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling [1]
			(in millions)		
Cash and Cash Equivalents	$ 3	$ —	$ —	$ —	$ 3
Equity	55	13	—	—	42
Fixed Income	57	—	—	—	57
Other Investments	1	—	—	1	—
Total assets measured at fair value	$ 116	$ 13	$ —	$ 1	$ 102

(1) Investments measured at the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy.

For U.S. Post-Retirement Benefit Plans assets measured at fair value using significant unobservable inputs (level 3), the following table summarizes the change in balances during 2022 and 2021:

	Years Ended October 31,	
	2022	2021
Balance, beginning of year	$ 1	$ 1
Realized gains/(losses)	—	1
Unrealized gains/(losses)	—	—
Purchases, sales, issuances, and settlements	—	(1)
Transfers in (out)	—	—
Balance, end of year	$ 1	$ 1

The following tables present the fair value of non-U.S. Defined Benefit Plans assets classified under the appropriate level of the fair value hierarchy as of October 31, 2022 and 2021:

		Fair Value Measurement at October 31, 2022 Using			
	October 31, 2022	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling [1]
			(in millions)		
Cash and Cash Equivalents	$ 22	$ —	$ 22	$ —	$ —
Equity	360	264	—	—	96
Fixed Income	274	83	98	—	93
Annuity Contract	92	—	—	92	—
Total assets measured at fair value	$ 748	$ 347	$ 120	$ 92	$ 189

(1) Investments measured at the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy.

		Fair Value Measurement at October 31, 2021 Using			
	October 31, 2021	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)	Not Subject to Leveling [1][2]
			(in millions)		
Cash and Cash Equivalents	$ 25	$ —	$ 24	$ —	$ 1
Equity	543	380	12	—	151
Fixed Income	525	151	242	—	132
Total assets measured at fair value	$ 1,093	$ 531	$ 278	$ —	$ 284

(1) Investments measured at the net asset value per share (or its equivalent) practical expedient have not been classified in the fair value hierarchy.

(2) Certain prior year amounts have been reclassified for consistency with the current year presentation. These reclassifications have no effect on the previously reported financial statements and other notes to the financial statements.

For non-U.S. Defined Benefit Plans assets measured at fair value using significant unobservable inputs (level 3), the following table summarizes the change in balances during 2022 and 2021:

	Years Ended October 31,	
	2022	2021
Balance, beginning of year	$ —	$ —
Realized gains/(losses)	—	—
Unrealized gains/(losses)	(39)	—
Purchases, sales, issuances, and settlements	(5)	—
Transfers in (out)	159	—
Currency impact	(23)	—
Balance, end of year	$ 92	$ —

The table below presents the combined projected benefit obligation ("PBO"), accumulated benefit obligation ("ABO") and fair value of plan assets, grouping plans using comparisons of the PBO and ABO relative to the plan assets as of October 31, 2022 or 2021.

	2022		2021	
	Benefit Obligation PBO	Fair Value of Plan Assets	Benefit Obligation PBO	Fair Value of Plan Assets
	(in millions)			
U.S. defined benefit plans where PBO exceeds the fair value of plan assets	$ 3	$ —	$ 7	$ —
U.S. defined benefit plans where fair value of plan assets exceeds PBO	354	396	505	551
Total	$ 357	$ 396	$ 512	$ 551
Non-U.S. defined benefit plans where PBO exceeds the fair value of plan assets	$ 172	$ 114	$ 691	$ 524
Non-U.S. defined benefit plans where fair value of plan assets exceeds PBO	493	634	409	569
Total	$ 665	$ 748	$ 1,100	$ 1,093
	ABO		ABO	
U.S. defined benefit plans where ABO exceeds the fair value of plan assets	$ 3	$ —	$ 7	$ —
U.S. defined benefit plans where the fair value of plan assets exceeds ABO	354	396	505	551
Total	$ 357	$ 396	$ 512	$ 551
Non-U.S. defined benefit plans where ABO exceeds the fair value of plan assets	$ 167	$ 114	$ 668	$ 524
Non-U.S. defined benefit plans where fair value of plan assets exceeds ABO	485	634	400	569
Total	$ 652	$ 748	$ 1,068	$ 1,093

Contributions and Estimated Future Benefit Payments. During fiscal year 2023, we expect to make no contributions to the U.S. defined benefit plans and the Post-Retirement Medical Plans. We expect to contribute $16 million to plans outside the U.S. The following table presents expected future benefit payments for the next 10 years:

	U.S. Defined Benefit Plans	Non-U.S. Defined Benefit Plans	U.S. Post-Retirement Benefit Plans
		(in millions)	
2023	$ 31	$ 32	$ 6
2024	$ 34	$ 33	$ 6
2025	$ 32	$ 34	$ 7
2026	$ 32	$ 34	$ 7
2027	$ 32	$ 35	$ 7
2028 - 2032	$ 142	$ 187	$ 34

Assumptions. The assumptions used to determine the benefit obligations and net periodic cost (benefit) for our defined benefit and post-retirement benefit plans are presented in the tables below. The expected long-term return on assets below represents an estimate of long-term returns on investment portfolios consisting of a mixture of equities, fixed income and alternative investments in proportion to the asset allocations of each of our plans. We consider long-term rates of return, which are weighted based on the asset classes (both historical and forecasted) in which we expect our pension and post-retirement funds to be invested. Discount rates reflect the current rate at which pension and post-retirement obligations could be settled based on the measurement dates of the plans - October 31. The U.S. discount rates at October 31, 2022 and 2021, were

determined based on the results of matching expected plan benefit payments with cash flows from a hypothetically constructed bond portfolio. The non-U.S. rates were generally based on published rates for high-quality corporate bonds. The range of assumptions that were used for the non-U.S. defined benefit plans reflects the different economic environments within various countries.

Assumptions used to calculate the net periodic cost (benefit) in each year were as follows:

	For years ended October 31,		
	2022	2021	2020
U.S. defined benefit plans:			
Discount rate	2.75%	2.75%	3.25%
Expected long-term return on assets	5.00%	7.00%	7.00%
Non-U.S. defined benefit plans:			
Discount rate	0.29-1.76%	0.07-1.54%	0.22-1.81%
Average increase in compensation levels	2.00-3.50%	2.00-3.00%	2.25-3.00%
Expected long-term return on assets	2.75-5.50%	4.00-5.50%	4.00-5.75%
Interest crediting rate for cash balance plans	0.30-0.50%	0.10-0.50%	0.00-0.75%
U.S. post-retirement benefits plans:			
Discount rate	2.75%	2.50%	3.00%
Expected long-term return on assets	5.00%	7.00%	7.00%
Current medical cost trend rate	6.00%	6.25%	6.25%
Ultimate medical cost trend rate	4.50%	4.50%	4.50%
Medical cost trend rate decreases to ultimate rate in year	2027	2029	2029

Assumptions used to calculate the benefit obligation were as follows:

	As of the Years Ending October 31,	
	2022	2021
U.S. defined benefit plans:		
Discount rate	6.00%	2.75%
Non-U.S. defined benefit plans:		
Discount rate	1.50-4.77%	0.29-1.76%
Average increase in compensation levels	2.00-3.25%	2.00-3.50%
Interest crediting rate for cash balance plans	0.50-2.10%	0.30-0.50%
U.S. post-retirement benefits plans:		
Discount rate	6.00%	2.75%
Current medical cost trend rate	7.00%	6.00%
Ultimate medical cost trend rate	4.75%	4.50%
Medical cost trend rate decreases to ultimate rate in year	2029	2027

15. GUARANTEES

Standard Warranty

We accrue for standard warranty costs based on historical trends in actual warranty charges over the past 12 months. The accrual is reviewed regularly and periodically adjusted to reflect changes in warranty cost over the period. The standard warranty accrual balances are held in other accrued and other long-term liabilities on our consolidated balance sheet. Our standard warranty terms typically extend to one year from the date of delivery, depending on the product.

A summary of the standard warranty accrual activity is shown in the table below.

	October 31,	
	2022	2021
	(in millions)	
Standard warranty accrual, beginning balance	$ 30	$ 32
Accruals for warranties including change in estimates	50	52
Settlements made during the period	(50)	(54)
Standard warranty accrual, ending balance	$ 30	$ 30
Accruals for warranties due within one year	$ 30	$ 29
Accruals for warranties due after one year	—	1
Standard warranty accrual, ending balance	$ 30	$ 30

Bank Guarantees

Guarantees consist primarily of outstanding standby letters of credit and bank guarantees and were approximately $37 million and $46 million as of October 31, 2022 and 2021, respectively. A standby letter of credit is a guarantee of payment issued by a bank on behalf of us that is used as payment of last resort should we fail to fulfill a contractual commitment with a third party. A bank guarantee is a promise from a bank or other lending institution that if we default on a loan, the bank will cover the loss.

Indemnifications in Connection with Transactions

In connection with various divestitures, acquisitions, spin-offs and other transactions, we have agreed to indemnify certain parties, their affiliates and/or other related parties against certain damages and expenses that might occur in the future. These indemnifications may cover a variety of liabilities, including, but not limited to, employee, tax, environmental, intellectual property, litigation and other liabilities related to the business conducted prior to the date of the transaction. In our opinion, the fair value of these indemnification obligations was not material as of October 31, 2022.

Indemnifications to Officers and Directors

Our corporate bylaws require that we indemnify our officers and directors, as well as those who act as directors and officers of other entities at our request, against expenses, judgments, fines, settlements and other amounts actually and reasonably incurred in connection with any proceedings arising out of their services to Agilent and such other entities, including service with respect to employee benefit plans. In addition, we have entered into separate indemnification agreements with each director and each board-appointed officer of Agilent which provide for indemnification of these directors and officers under similar circumstances and under additional circumstances. The indemnification obligations are more fully described in the bylaws and the indemnification agreements. We purchase standard insurance to cover claims or a portion of the claims made against our directors and officers. Since a maximum obligation is not explicitly stated in our bylaws or in our indemnification agreements and will depend on the facts and circumstances that arise out of any future claims, the overall maximum amount of the obligations cannot be reasonably estimated. Historically, we have not made payments related to these obligations, and the fair value for these indemnification obligations was not material as of October 31, 2022.

Other Indemnifications

As is customary in our industry and as provided for in local law in the U.S. and other jurisdictions, many of our standard contracts provide remedies to our customers and others with whom we enter into contracts, such as defense, settlement, or payment of judgment for intellectual property claims related to the use of our products. From time to time, we indemnify customers, as well as our suppliers, contractors, lessors, lessees, companies that purchase our businesses or assets and others with whom we enter into contracts, against combinations of loss, expense, or liability arising from various triggering events related to the sale and the use of our products and services, the use of their goods and services, the use of facilities and state of our owned facilities, the state of the assets and businesses that we sell and other matters covered by such contracts, usually up to a specified maximum amount. In addition, from time to time we also provide protection to these parties against claims related to

undiscovered liabilities, additional product liability or environmental obligations. In our experience, claims made under such indemnifications are rare and the associated estimated fair value of the liability was not material as of October 31, 2022.

In connection with the sale of several of our businesses, we have agreed to indemnify the buyers of such businesses, their respective affiliates and other related parties against certain damages that they might incur in the future. The continuing indemnifications primarily cover damages relating to liabilities of the businesses that Agilent retained and did not transfer to the buyers, as well as other specified items. In our opinion, the fair value of these indemnification obligations was not material as of October 31, 2022.

16. COMMITMENTS AND CONTINGENCIES

Other Purchase Commitments. Typically, we can cancel contracts with professional services suppliers without penalties. For those contracts that are not cancelable without penalties, there are termination fees and costs or commitments for continued spending that we are obligated to pay to a supplier under each contract's termination period before such contract can be cancelled. Our contractual obligations with these suppliers under "other purchase commitments" were approximately $139 million.

Contingencies: We are involved in lawsuits, claims, investigations and proceedings, including, but not limited to, intellectual property, commercial, real estate, environmental and employment matters, which arise in the ordinary course of business. There are no matters pending that we currently believe are reasonably possible of having a material impact to our business, consolidated financial condition, results of operations or cash flows.

17. SHORT-TERM DEBT

Credit Facilities

On March 13, 2019, we entered into a credit agreement with a group of financial institutions which, as amended, provides for a $1 billion five-year unsecured credit facility that will expire on March 13, 2024, and incremental term loan facilities in an aggregate amount of up to $500 million. On April 21, 2021, we entered into an incremental assumption agreement, pursuant to which the aggregate amount available for borrowing under the revolving credit facility was increased to $1.35 billion and the aggregate amount available for incremental facilities was refreshed to remain at $500 million.

As of both October 31, 2022 and 2021, we had no borrowings outstanding under the credit facility and we had no borrowings outstanding under the incremental facilities. We were in compliance with the covenants for the credit facility during the year ended October 31, 2022.

Commercial Paper

Under our U.S. commercial paper program, we may issue and sell unsecured, short-term promissory notes in the aggregate principal amount not to exceed $1.35 billion with up to 397-day maturities. At any point in time, the company intends to maintain available commitments under its revolving credit facility in an amount at least equal to the amount of the commercial paper notes outstanding. Amounts available under the program may be borrowed, repaid and re-borrowed from time to time. The proceeds from issuances under the program may be used for general corporate purposes. As of October 31, 2022, we had borrowings of $35 million outstanding under our U.S. commercial paper program and had a weighted average annual interest rate of 3.54 percent. As of October 31, 2021, we had no borrowings outstanding under the U.S. commercial paper program.

18. LONG-TERM DEBT

Term Loan Facility

On April 15, 2022, we entered into a term loan agreement with a group of financial institutions, which provided for a $600 million delayed draw term loan that will mature on April 15, 2025. As of October 31, 2022, we had $600 million borrowings outstanding under the term loan facility and had a weighted average interest rate of 3.98 percent. Loans under the term loan agreement bear interest, at our option, either at: (i) the alternate base rate, as defined in the term loan agreement, plus the applicable margin for such loans or (ii) adjusted term SOFR, as defined in the term loan agreement, plus the applicable margin for such loans. The term loan agreement contains customary representations and warranties as well as customary affirmative and negative covenants. We were in compliance with the covenants for the term loan during the year ended October 31, 2022.

Senior Notes

The following table summarizes the company's long-term senior notes:

	October 31, 2022	October 31, 2021
	Amortized Principal	Amortized Principal
	(in millions)	
2023 Senior Notes	$ —	$ 599
2026 Senior Notes	299	298
2029 Senior Notes	495	494
2030 Senior Notes	496	496
2031 Senior Notes	843	842
Total Senior Notes	$ 2,133	$ 2,729

2023 Senior Notes

On June 21, 2013, the company issued aggregate principal amount of $600 million in senior notes ("2023 senior notes"). The 2023 senior notes were issued at 99.544% of their principal amount. The notes would have matured on July 15, 2023 with a fixed interest rate of 3.875% per annum. We paid interest semi-annually on January 15th and July 15th of each year and payments commenced January 15, 2014.

On May 4, 2022, we used the proceeds from the term loan facility and repaid the $600 million outstanding aggregate principal amount of our 2023 senior notes. The total redemption price of approximately $609 million was computed in accordance with the terms of the 2023 senior notes as the present value of the remaining scheduled payments of principal and unpaid interest on the notes being redeemed. In May 2022, we recorded a loss on extinguishment of debt of $9 million in other income (expense), net in the consolidated statement of operations. In addition, $7 million of accrued interest, up to but not including the applicable redemption date, was paid.

2026 Senior Notes

On September 22, 2016, the company issued aggregate principal amount of $300 million in senior notes ("2026 senior notes"). The 2026 senior notes were issued at 99.624% of their principal amount. The notes will mature on September 22, 2026 and bear interest at a fixed rate of 3.05% per annum. The interest is payable semi-annually on March 22nd and September 22nd of each year and payments commenced March 22, 2017.

In February 2016, Agilent executed three forward-starting pay fixed/receive variable interest rate swaps for the notional amount of $300 million in connection with future interest payments to be made on our 2026 senior notes issued on September 15, 2016. The swap arrangements were terminated on September 15, 2016 with a payment of $10 million, and we recognized this as a deferred loss in accumulated other comprehensive income (loss) which is being amortized to interest expense over the life of the 2026 senior notes. The remaining loss to be amortized related to the interest rate swap agreements at October 31, 2022 was $4 million.

2029 Senior Notes

On September 16, 2019, the company issued an aggregate principal amount of $500 million in senior notes ("2029 senior notes"). The 2029 senior notes were issued at 99.316% of their principal amount. The notes will mature on September 15, 2029, and bear interest at a fixed rate of 2.75% per annum. The interest is payable semi-annually on March 15th and September 15th of each year and payments commenced on March 15, 2020.

In August 2019, Agilent executed treasury lock agreements for $250 million in connection with future interest payments to be made on our 2029 senior notes issued on September 16, 2019. We designated the treasury lock as a cash flow hedge. The treasury lock contracts were terminated on September 6, 2019 and we recognized a deferred loss of $6 million in accumulated other comprehensive income which is being amortized to interest expense over the life of the 2029 senior notes. The remaining loss to be amortized related to the treasury lock agreements at October 31, 2022 was $4 million.

2030 Senior Notes

On June 4, 2020, we issued an aggregate principal amount of $500 million in senior notes ("2030 senior notes"). The 2030 senior notes were issued at 99.812% of their principal amount. The 2030 senior notes will mature on June 4, 2030, and bear interest at a fixed rate of 2.10% per annum. The interest is payable semi-annually on June 4th and December 4th of each year and payments commenced on December 4, 2020.

2031 Senior Notes

On March 12, 2021, we issued an aggregate principal amount of $850 million in senior notes ("2031 senior notes"). The 2031 senior notes were issued at 99.822% of their principal amount. The 2031 senior notes will mature on March 12, 2031, and bear interest at a fixed rate of 2.30% per annum. The interest is payable semi-annually on March 12th and September 12th of each year and payments commenced on September 12, 2021.

All outstanding senior notes listed above are unsecured and rank equally in right of payment with all of Agilent's other senior unsecured indebtedness.

19. STOCKHOLDERS' EQUITY

Stock Repurchase Program

On November 19, 2018 we announced that our board of directors had approved a new share repurchase program (the "2019 repurchase program") designed, among other things, to reduce or eliminate dilution resulting from issuance of stock under the company's employee equity incentive programs. The 2019 share repurchase program authorizes the purchase of up to $1.75 billion of our common stock at the company's discretion and has no fixed termination date. The 2019 repurchase program does not require the company to acquire a specific number of shares and may be suspended, amended or discontinued at any time. During the year ended October 31, 2020, we repurchased and retired 5.2 million shares for $469 million under this authorization. During the year ended October 31, 2021, we repurchased and retired 3.1 million shares for $365 million under this authorization. Effective February 18, 2021, the 2019 repurchase program was terminated and replaced by the new share repurchase program. The remaining authorization under the 2019 repurchase plan of $193 million expired on February 18, 2021.

On February 16, 2021 we announced that our board of directors had approved a new share repurchase program (the "2021 repurchase program") designed, among other things, to reduce or eliminate dilution resulting from issuance of stock under the company's employee equity incentive programs. The 2021 repurchase program authorizes the purchase of up to $2.0 billion of our common stock at the company's discretion and has no fixed termination date. The 2021 repurchase program which became effective on February 18, 2021, replaced and terminated the 2019 repurchase program on that date. The 2021 repurchase program does not require the company to acquire a specific number of shares and may be suspended, amended or discontinued at any time. During the year ended October 31, 2021, we repurchased and retired 3.0 million shares for $423 million under this authorization. During the year ended October 31, 2022, we repurchased and retired 8.4 million shares for $1,139 million under this authorization. As of October 31, 2022, we had remaining authorization to repurchase up to approximately $438 million of our common stock under the 2021 repurchase program.

Cash Dividends on Shares of Common Stock

During the year ended October 31, 2022, cash dividends of $0.840 per share, or $250 million were declared and paid on the company's outstanding common stock. During the year ended October 31, 2021, cash dividends of $0.776 per share, or $236 million were declared and paid on the company's outstanding common stock. During the year ended October 31, 2020, cash dividends of $0.720 per share, or $222 million were declared and paid on the company's outstanding common stock.

On November 16, 2022, we declared a quarterly dividend of $0.225 per share of common stock, or approximately $66 million which will be paid on January 25, 2023, to shareholders of record as of the close of business on January 3, 2023. The timing and amounts of any future dividends are subject to determination and approval by our board of directors.

Accumulated Other Comprehensive Income (Loss)

The following table summarizes the components of our accumulated other comprehensive income (loss) as of October 31, 2022 and 2021, net of tax effect:

	October 31,	
	2022	2021
	(in millions)	
Foreign currency translation, net of tax (expense) benefit of $4 and $(8)	$ (335)	(185)
Unrealized losses (including prior service benefit) on defined benefit plans, net of tax benefit of $71 and $80	(32)	(100)
Unrealized gains (losses) on derivative instruments, net of tax (expense) benefit of $(4) and $1	20	3
Total accumulated other comprehensive loss	$ (347)	$ (282)

Changes in accumulated other comprehensive income (loss) by component and related tax effects for the years ended October 31, 2022 and 2021 were as follows:

	Foreign currency translation	Net defined benefit pension cost and post retirement plan costs: Prior service credits	Net defined benefit pension cost and post retirement plan costs: Actuarial Losses	Unrealized gains (losses) on derivatives	Total
			(in millions)		
As of October 31, 2020	$ (194)	$ 125	$ (442)	$ (11)	$ (522)
Other comprehensive income before reclassifications	11	—	228	2	241
Amounts reclassified out of accumulated other comprehensive income (loss)	—	(1)	64	17	80
Tax expense	(2)	—	(74)	(5)	(81)
Other comprehensive income (loss)	9	(1)	218	14	240
As of October 31, 2021	$ (185)	$ 124	$ (224)	$ 3	$ (282)
Other comprehensive income (loss) before reclassifications	(162)	—	50	56	(56)
Amounts reclassified out of accumulated other comprehensive income (loss)	—	(1)	28	(34)	(7)
Tax (expense) benefit	12	—	(9)	(5)	(2)
Other comprehensive income (loss)	(150)	(1)	69	17	(65)
As of October 31, 2022	$ (335)	$ 123	$ (155)	$ 20	$ (347)

Reclassifications out of accumulated other comprehensive income (loss) for the years ended October 31, 2022 and 2021 were as follows (in millions):

Details about Accumulated Other Comprehensive Income components	Amounts Reclassified from Other Comprehensive Income 2022	Amounts Reclassified from Other Comprehensive Income 2021	Affected line item in statement of operations
Unrealized gains (losses) on derivatives	$ 36	$ (16)	Cost of products
Unrealized gains (losses) on derivatives	(2)	(1)	Interest expense
	34	(17)	Total before income tax
	(8)	4	(Provision) benefit for income tax
	26	(13)	Total net of income tax
Net defined benefit pension cost and post retirement plan costs:			
Actuarial net loss	(28)	(64)	Other (income) expense
Prior service benefit	1	1	Other (income) expense
	(27)	(63)	Total before income tax
	7	15	Benefit for income tax
	(20)	(48)	Total net of income tax
Total reclassifications for the period	$ 6	$ (61)	

Amounts in parentheses indicate reductions to income and increases to other comprehensive income.

Reclassifications of prior service benefit and actuarial net loss in respect of retirement plans and post retirement pension plans are included in the computation of net periodic cost (see Note 14, "Retirement Plans and Post Retirement Pension Plans").

20. SEGMENT INFORMATION

Description of Segments. We are a global leader in life sciences, diagnostics and applied chemical markets, providing application focused solutions that include instruments, software, services and consumables for the entire laboratory workflow.

In the first quarter of fiscal year 2022, we announced a change in organizational structure designed to enable our growth strategies and strengthen our focus on customers. Our chemistries and supplies business and our remarketed instruments business moved from our Agilent CrossLab business segment to our life sciences and applied markets business segment. We also moved BioTek's service revenue and related cost of sales from our life sciences and applied markets business segment to our Agilent CrossLab business segment. The historical financial segment information has been recast to conform to this new presentation. There was no change to our diagnostics and genomics business segment.

Following this reorganization, we continue to have three business segments comprised of life sciences and applied markets, diagnostics and genomics and Agilent CrossLab, each of which continues to comprise a reportable segment. The three operating segments were determined based primarily on how the chief operating decision maker views and evaluates our operations. Operating results are regularly reviewed by the chief operating decision maker to make decisions about resources to be allocated to the segment and to assess its performance. Other factors, including market separation and customer specific applications, go-to-market channels, products and services and manufacturing are considered in determining the formation of these operating segments.

A description of our three reportable segments is as follows:

Our life sciences and applied markets business provides application-focused solutions that include instruments and software that enable customers to identify, quantify and analyze the physical and biological properties of substances and products, as well as enable customers in the clinical and life sciences research areas to interrogate samples at the molecular and cellular level. Key product categories include: liquid chromatography ("LC") systems and components; liquid chromatography mass spectrometry ("LCMS") systems; gas chromatography ("GC") systems and components; gas chromatography mass spectrometry ("GCMS") systems; inductively coupled plasma mass spectrometry ("ICP-MS") instruments; atomic absorption ("AA") instruments; microwave plasma-atomic emission spectrometry ("MP-AES") instruments; inductively coupled plasma optical emission spectrometry ("ICP-OES") instruments; raman spectroscopy; cell analysis plate based assays; flow cytometer; real-time cell analyzer; cell imaging systems; microplate reader; laboratory software for sample tracking; information management and analytics; laboratory automation and robotic systems; dissolution testing; vacuum pumps and measurement technologies. Our consumables portfolio is designed to improve customer outcomes. Most of the portfolio is vendor neutral, meaning Agilent can serve and supply customers regardless of their instrument purchase choices. Solutions range from chemistries to supplies. Key product categories in consumables include GC and LC columns, sample preparation products, custom chemistries, and a large selection of laboratory instrument supplies.

Our diagnostics and genomics business is comprised of six areas of activity providing active pharmaceutical ingredients ("APIs") for oligo-based therapeutics as well as solutions that include reagents, instruments, software and consumables, which enable customers in the clinical and life sciences research areas to interrogate samples at the cellular and molecular level. First, our genomics business includes arrays for DNA mutation detection, genotyping, gene copy number determination, identification of gene rearrangements, DNA methylation profiling, gene expression profiling, as well as next generation sequencing ("NGS") target enrichment and genetic data management and interpretation support software. This business also includes solutions that enable clinical labs to identify DNA variants associated with genetic disease and help direct cancer therapy. Second, our nucleic acid solutions business is a contract and development manufacturing organization that provides services related to and the production of synthesized oligonucleotides under pharmaceutical good manufacturing practices ("GMP") conditions for use as API in a class of drugs that utilize nucleic acid molecules for disease therapy. Third, our pathology solutions business is focused on product offerings for cancer diagnostics and anatomic pathology workflows. The broad portfolio of offerings includes immunohistochemistry ("IHC"), in situ hybridization ("ISH"), hematoxylin and eosin ("H&E") staining and special staining. Fourth, we also collaborate with a number of major pharmaceutical companies to develop new potential tissue and liquid-based pharmacodiagnostics, also known as companion diagnostics, which may be used to identify patients most likely to benefit from a specific targeted therapy. Fifth, the reagent partnership business provides clinical flow cytometry reagents for routine cancer diagnostics. This business also provides bulk antibodies as raw materials and

associated assay development services to IVD manufacturers, biotechnology and pharmaceutical companies. Finally, our biomolecular analysis business provides complete workflow solutions, including instruments, consumables and software, for quality control analysis of nucleic acid samples. Samples are analyzed using quantitative and qualitative techniques to ensure accuracy in further genomics analysis techniques including NGS, utilized in clinical and life science research applications.

The Agilent CrossLab business spans the entire lab with its extensive services portfolio, which is designed to improve customer outcomes. The majority of the portfolio is vendor neutral, meaning we can serve and supply customers regardless of their instrument purchase choices. The services portfolio include repairs, parts, maintenance, installations, training, compliance support, software as a service, asset management, consulting and various other custom services to support the customers' laboratory operations. Custom services are tailored to meet the specific application needs of various industries and to keep instruments fully operational and compliant with the respective industry requirements.

A significant portion of the segments' expenses arises from shared services and infrastructure that we have historically provided to the segments in order to realize economies of scale and to efficiently use resources. These expenses, collectively called corporate charges, include legal, accounting, tax, real estate, insurance services, information technology services, treasury, order administration, other corporate infrastructure expenses, costs of centralized research and development and joint sales and marketing. Charges are allocated to the segments, and the allocations have been determined on a basis that we consider to be a reasonable reflection of the utilization of services provided to or benefits received by the segments. In addition, we do not allocate asset impairments, amortization of acquisition-related intangible assets, change in the fair value of acquisition-related contingent consideration, acquisition and integration costs, transformational initiatives expenses, acceleration of share-based compensation expense related to workforce reduction, business exit and divestiture costs, special compliance costs and certain other charges to the operating margin for each segment because management does not include this information in its measurement of the performance of the operating segments. Transformational initiatives include expenses associated with targeted cost reduction activities such as manufacturing transfers, site consolidations, legal entity and other business reorganizations, in-sourcing or outsourcing of activities.

The following tables reflect the results of our reportable segments under our management reporting system. The performance of each segment is measured based on several metrics, including segment income from operations. These results are used, in part, by the chief operating decision maker in evaluating the performance of, and in allocating resources to, each of the segments.

The profitability of each of the segments is measured after excluding items such as asset impairment charges, transformational initiatives, acquisition and integration costs, non-cash amortization of intangible assets related to business combinations, interest income, interest expense, and other items as noted in the reconciliations below.

	Life Sciences and Applied Markets	Diagnostics and Genomics	Agilent CrossLab	Total Segments
	(in millions)			
Year Ended October 31, 2022:				
Total net revenue	$ 4,007	$ 1,389	$ 1,452	$ 6,848
Income from operations	$ 1,186	$ 301	$ 370	$ 1,857
Depreciation expense	$ 59	$ 39	$ 22	$ 120
Share-based compensation expense [(1)]	$ 69	$ 25	$ 26	$ 120
Year Ended October 31, 2021:				
Total net revenue	$ 3,663	$ 1,296	$ 1,360	$ 6,319
Income from operations	$ 1,017	$ 273	$ 323	$ 1,613
Depreciation expense	$ 60	$ 39	$ 23	$ 122
Share-based compensation expense [(1)]	$ 60	$ 22	$ 24	$ 106
Year Ended October 31, 2020:				
Total net revenue	$ 3,115	$ 1,047	$ 1,177	$ 5,339
Income from operations	$ 792	$ 192	$ 272	$ 1,256
Depreciation expense	$ 58	$ 39	$ 22	$ 119
Share-based compensation expense [(1)]	$ 46	$ 17	$ 18	$ 81

(1) Share-based compensation expense in 2022, 2021 and 2020 excludes amounts not allocated to the segments related to accelerated share-based compensation expense from workforce reduction and from our acquisition of BioTek and Resolution Bioscience.

The following table reconciles reportable segments' income from operations to Agilent's total enterprise income before taxes:

	Years Ended October 31,		
	2022	2021	2020
	(in millions)		
Total reportable segments' income from operations	$ 1,857	$ 1,613	$ 1,256
Amortization of intangible assets related to business combinations	(191)	(194)	(184)
Acquisition and integration costs	(25)	(41)	(41)
Transformational initiatives	(30)	(37)	(53)
Acceleration of share-based compensation expense related to workforce reduction	—	(1)	(2)
Asset impairments	—	(2)	(99)
Business exit and divestiture costs	(7)	(5)	(2)
Change in fair value of contingent consideration	25	21	—
Special compliance costs	—	(1)	—
Other [1]	(11)	(6)	(29)
Interest Income	9	2	8
Interest Expense	(84)	(81)	(78)
Other income (expense), net [2]	(39)	92	66
Income before taxes, as reported	$ 1,504	$ 1,360	$ 842

(1) For the year ended October 31, 2020, the other category primarily includes legal costs related to a claim we pursued against Twist Bioscience Corporation in addition to other miscellaneous adjustments.

(2) For the year ended October 31, 2022 and 2021, other income (expense), net includes net gains and losses on the fair value of equity securities. For the year ended October 31, 2020, other income (expense), net includes the settlement of a legal claim against Twist Bioscience Corporation.

Major Customers. No customer represented 10 percent or more of our total net revenue in 2022, 2021 or 2020.

The following table reflects segment assets and capital expenditures under our management reporting system. Segment assets include allocations of corporate assets, goodwill, net other intangibles and other assets. Unallocated assets primarily consist of cash, cash equivalents, short-term and long-term investments, deferred tax assets, right-of use assets and other assets.

	Life Sciences and Applied Markets	Diagnostics and Genomics	Agilent CrossLab	Total Segments
	(in millions)			
As of and for the Year Ended October 31, 2022:				
Assets	$ 3,955	$ 3,489	$ 869	$ 8,313
Capital expenditures	$ 77	$ 181	$ 33	$ 291
As of and for the Year Ended October 31, 2021:				
Assets	$ 3,741	$ 3,320	$ 839	$ 7,900
Capital expenditures	$ 64	$ 100	$ 24	$ 188

The following table reconciles segment assets to Agilent's total assets:

	October 31,	
	2022	2021
	(in millions)	
Total reportable segments' assets	$ 8,313	$ 7,900
Cash and cash equivalents	1,053	1,484
Short-term investments	—	91
Prepaid expenses	119	91
Long-term investments	195	185
Long-term and other receivables	134	126
Deferred tax assets	246	309
Right of use assets	150	178
Other	322	341
Total assets	$ 10,532	$ 10,705

The other category primarily includes over funded pension plans which are not allocated to the segments.

The following table presents summarized information for net revenue by geographic region. Revenues from external customers are generally attributed to countries based upon the customers' location.

	United States	China[1]	Rest of the World	Total
		(in millions)		
Net revenue:				
Year Ended October 31, 2022	$ 2,385	$ 1,499	$ 2,964	$ 6,848
Year Ended October 31, 2021	$ 2,159	$ 1,273	$ 2,887	$ 6,319
Year Ended October 31, 2020	$ 1,752	$ 1,087	$ 2,500	$ 5,339

1. China also includes Hong Kong net revenue.

The following table presents summarized information for long-lived assets by geographic region. Long lived assets consist of property, plant, and equipment, right-of-use assets, long-term receivables and other long-term assets excluding intangible assets. The rest of the world primarily consists of Asia and the rest of Europe.

	United States	Germany	Rest of the World	Total
		(in millions)		
Long-lived assets:				
October 31, 2022	$ 1,080	$ 151	$ 492	$ 1,723
October 31, 2021	$ 912	$ 134	$ 587	$ 1,633

Item 9. ***Changes in and Disagreements with Accountants on Accounting and Financial Disclosure***

None.

Item 9A. ***Controls and Procedures***

Evaluation of Disclosure Controls and Procedures

Our management has evaluated, under the supervision and with the participation of our Chief Executive Officer and Chief Financial Officer, the effectiveness of our disclosure controls and procedures as of October 31, 2022, pursuant to and as required by Rule 13a-15(b) under the Securities Exchange Act of 1934 ("Exchange Act"). Based on that evaluation, our Chief Executive Officer and Chief Financial Officer have concluded that, as of October 31, 2022, the company's disclosure controls and procedures, as defined by Rule 13a-15(e) under the Exchange Act, were effective and designed to ensure that (i) information required to be disclosed in the company's reports filed under the Exchange Act is recorded, processed, summarized and reported within the time periods specified in the SEC's rules and forms, and (ii) information is accumulated and communicated to management, including the Chief Executive Officer and Chief Financial Officer, as appropriate to allow timely decisions regarding required disclosures.

Management's Report on Internal Control Over Financial Reporting

Our management is responsible for establishing and maintaining adequate internal control over financial reporting, as such term is defined in Exchange Act Rule 13a-15(f). Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we assessed 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 ("COSO"). As a result of that assessment, management concluded that our internal control over financial reporting was effective as of October 31, 2022, based on criteria in *Internal Control - Integrated Framework* (2013) issued by the COSO.

The effectiveness of our internal control over financial reporting as of October 31, 2022 has been audited by PricewaterhouseCoopers LLP, an independent registered public accounting firm, as stated in their report which appears in Item 8 of this Annual Report on Form 10-K.

Changes in Internal Control Over Financial Reporting

There were no changes in our internal control over financial reporting that occurred during Agilent's last fiscal quarter that have materially affected, or are reasonably likely to materially affect, our internal control over financial reporting.

Item 9B. ***Other Information***

None.

PART III

Item 10. ***Directors, Executive Officers and Corporate Governance***

Information regarding our directors appears under "Proposal No. 1 - Election of Directors" in our Proxy Statement for the Annual Meeting of Stockholders ("Proxy Statement"), to be held March 15, 2023. That portion of the Proxy Statement is incorporated by reference into this report. Information regarding our executive officers appears in Item 1 of this report under "Information about our Executive Officers." Information regarding our Audit and Finance Committee and our Audit and Finance Committee's financial expert appears under "Audit and Finance Committee Report" and "Corporate Governance" in our Proxy Statement. That portion of the Proxy Statement is incorporated by reference into this report.

There were no material changes to the procedures by which security holders may recommend nominees to our Board of Directors in fiscal year 2022. Information regarding our code of ethics (the company's Standards of Business Conduct) applicable to our principal executive officer, our principal financial officer, our controller and other senior financial officers appears in Item 1 of this report under "Investor Information." We will post amendments to or waivers from a provision of the Standards of Business Conduct with respect to those persons on our website at www.investor.agilent.com.

Compliance with Section 16(a) of the Exchange Act

Information about compliance with Section 16(a) of the Exchange Act appears under "Section 16(a) Beneficial Ownership Reporting Compliance" in the Proxy Statement. That portion of the Proxy Statement is incorporated by reference into this report.

Item 11. ***Executive Compensation***

Information about compensation of our named executive officers appears under "Executive Compensation" in the Proxy Statement. Information about compensation of our directors appears under "Compensation of Non-Employee Directors" and "Compensation Committee Report" in the Proxy Statement. Those portions of the Proxy Statement are incorporated by reference into this report.

Item 12. ***Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters***

Information about security ownership of certain beneficial owners and management appears under "Beneficial Ownership" in the Proxy Statement. That portion of the Proxy Statement is incorporated by reference into this report.

EQUITY COMPENSATION PLAN INFORMATION

The following table summarizes information about our equity compensation plans as of October 31, 2022. All outstanding awards relate to our common stock.

Plan Category	Number of Securities to be Issued upon Exercise of Outstanding Options, Warrants and Rights	Weighted-average Exercise Price of Outstanding Options, Warrants and Rights	Number of Securities Remaining Available for Future Issuance under Equity Compensation Plans (Excluding Securities Reflected in Column (a))
	(a)	(b)	(c)
Equity compensation plans approved by security holders (1)(2)(3)	3,200,424	$ 94	46,355,914
Equity compensation plans not approved by security holders	—	—	—
Total	3,200,424	$ 94	46,355,914

(1) The number of securities remaining available for future issuance in column (c) includes 24,859,446 shares of common stock authorized and available for issuance under our current Employee Stock Purchase Plan ("ESPP"). The number of shares authorized for issuance under the ESPP is subject to an automatic annual increase of the lesser of one percent of the outstanding common stock of Agilent or an amount determined by the Compensation Committee of our Board of Directors. Under the terms of the ESPP, in no event shall the aggregate number of shares issued under the ESPP exceed 31 million shares.

(2) We issue securities under our equity compensation plans in forms other than options, warrants or rights. On November 15, 2017 and March 21, 2018, the Board and the stockholders, respectively, approved the Agilent Technologies, Inc. 2018 Stock Plan (the "2018 Plan"), which was an amendment and restatement of the company's 2009 Stock Plan, approved by the Board and the stockholders, respectively, on November 19, 2008 and March 11, 2009. The 2018 Plan provides for awards of stock-based incentive compensation to our employees (including officers), directors and consultants. The 2018 Plan provides for the grant of awards in the form of stock options, stock appreciation rights, restricted stock, restricted stock units, performance shares and performance units with performance-based conditions to vesting or exercisability, and cash awards. The 2018 Plan has a term of ten years.

(3) We issue securities under our equity compensation plans in forms which do not require a payment by the recipient to us at the time of exercise or vesting, including restricted stock, restricted stock units and performance units. Accordingly, the weighted-average exercise price in column (b) does not take these awards into account.

Item 13. ***Certain Relationships and Related Transactions, and Director Independence***

Information about certain relationships and related transactions appears under "Related Person Transactions Policy and Procedures" in the Proxy Statement. Information about director independence appears under the heading "Corporate Governance — Director Independence" in the Proxy Statement. Each of those portions of the Proxy Statement is incorporated by reference into this report.

Item 14. ***Principal Accounting Fees and Services***

Information about principal accountant fees and services as well as related pre-approval policies appear under "Fees Paid to PricewaterhouseCoopers LLP" and "Policy on Preapproval of Audit and Permissible Non-Audit Services of Independent Registered Public Accounting Firm" in the Proxy Statement. Those portions of the Proxy Statement are incorporated by reference into this report.

PART IV

Item 15. Exhibits and Financial Statement Schedules

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

1. **Financial Statements.**

See Index to Consolidated Financial Statements under Item 8 on Page 53 of this report.

2. **Financial Statement Schedule.**

The following additional financial statement schedule should be considered in conjunction with our consolidated financial statements. All other schedules have been omitted because the required information is either not applicable or not sufficiently material to require submission of the schedule:

SCHEDULE II

SCHEDULE II
VALUATION AND QUALIFYING ACCOUNTS

Column A	Column B	Column C	Column D	Column E
Description	Balance at Beginning of Period	Additions Charged to Expenses or Other Accounts*	Deductions Credited to Expenses or Other Accounts**	Balance at End of Period
		(in millions)		
2022				
Tax valuation allowance	$ 120	$ 7	$ (12)	$ 115
2021				
Tax valuation allowance	$ 132	$ 5	$ (17)	$ 120
2020				
Tax valuation allowance	$ 134	$ 6	$ (8)	$ 132

* Additions include current year additions charged to expenses and current year build due to increases in net deferred tax assets, return to provision true-ups, other adjustments and other comprehensive income impact to deferred taxes.

** Deductions include current year releases credited to expenses and current year reductions due to decreases in net deferred tax assets, return to provision true-ups, other adjustments and other comprehensive income impact to deferred taxes.

3. **Exhibits.**

Exhibits are incorporated herein by reference or are filed with this report as indicated below (numbered in accordance with Item 601 of Regulation S-K):

Exhibit Number	Description	Incorporation by Reference			Filed Herewith
		Form	Date	Exhibit Number	
2.1	Separation and Distribution Agreement, dated August 1, 2014, by and between Agilent Technologies, Inc. and Keysight Technologies, Inc. (pursuant to Item 601(b)(2) of Regulation S-K, schedules to the Separation and Distribution Agreement have been omitted; they will be supple mentally provided to the SEC upon request)	8-K	8/5/2014	2.1	
3.1	Amended and Restated Certificate of Incorporation.	S-1	8/16/1999	3.1	
3.2	Amended and Restated Bylaws.	10-K	12/19/2019	3.2	
4.1	Registration Rights Agreement between Agilent Technologies, Inc. and Credit Suisse First Boston Corporation, J.P. Morgan Securities, Inc. and Salomon Smith Barney, Inc. dated November 27, 2001.	8-K	11/27/2001	99.3	
4.2	Indenture, dated October 24, 2007, between Agilent Technologies, Inc. and the trustee for the debt securities.	S-3ASR	10/24/2007	4.0	
4.3	Eighth Supplemental Indenture, dated as of September 22, 2016, between the Company and U.S. Bank National Association and Form of Global Note for the Company's 3.050% Senior Note due 2026	8-K	9/22/2016	4.01	
4.4	Indenture, dated as of September 16, 2019, between the Company and U.S. Bank National Association	8-K	9/16/2019	4.1	
4.5	First Supplemental Indenture, dated as of September 16, 2019, between the Company and U.S. Bank National Association and Form of 2.750% Senior Note due 2029	8-K	9/16/2019	4.2	
4.6	Second Supplemental Indenture, dated as of June 4, 2020, between the Company and U.S. Bank National Association and Form of 2.100% Senior Note due 2030	8-K	6/4/2020	4.1	
4.7	Indenture dated as of March 12, 2021, between the Company and Citibank, N.A.	8-K	3/12/2021	4.1	
4.8	First Supplemental Indenture, dated as of March 12, 2021, between the Company and Citibank, N.A. and Form of Global Note for the Company's 2.300% Senior Notes due 2031.	8-K	3/12/2021	4.2	
4.9	Description of Securities	10-K	12/19/2019	4.8	
10.1	Agilent Technologies, Inc. 1999 Stock Plan (Amendment and Restatement Effective November 14, 2006).*	10-K	12/22/2006	10.8	
10.2	Form of Award Agreement (U.S.) for grants under the Agilent Technologies, Inc. 1999 Stock Plan.*	8-K	11/12/2004	10.1	
10.3	Form of Award Agreement (Non-U.S.) for grants under the Agilent Technologies, Inc. 1999 Stock Plan.*	8-K	11/12/2004	10.2	
10.4	Agilent Technologies, Inc. 2020 Employee Stock Purchase Plan effective May 1, 2020).*	10-Q	6/1/2020	10.1	
10.5	Agilent Technologies, Inc. 2009 Stock Plan.*	DEF14A	1/27/2009	Appendix A	
10.6	Form of Stock Option Award Agreement under the 2009 Stock Plan for U.S. Employees (for awards made after October 31, 2010).*	10-K	12/20/2010	10.17	
10.7	Form of Stock Option Award Agreement under the 2009 Stock Plan for U.S. Employees.*	10-K	12/21/2009	10.31	
10.8	Form of Stock Option Award Agreement under the 2009 Stock Plan for non-U.S. Employees (for awards made after October 31, 2010).*	10-K	12/20/2010	10.19	

Exhibit Number	Description	Incorporation by Reference			Filed Herewith
		Form	Date	Exhibit Number	
10.9	Form of Stock Option Award Agreement under the 2009 Stock Plan for non-U.S. Employees.*	10-K	12/21/2009	10.32	
10.10	Form of Stock Award Agreement for Standard Awards granted to Employees (for awards made after October 31, 2010).*	10-K	12/20/2010	10.21	
10.11	Form of Stock Award Agreement under the 2009 Stock Plan for Standard Awards granted to Employees (for awards made after November 17, 2015).*	10-K	12/21/2015	10.26	
10.12	Form of Stock Award Agreement under the 2009 Stock Plan for Long-Term Performance Program Awards (for awards made after November 17, 2015). *	10-K	12/21/2015	10.28	
10.13	Form of Stock Award Agreement under the 2009 Stock Plan for New Executives (for awards made after November 17, 2015). *	10-K	12/21/2015	10.29	
10.14	Agilent Technologies, Inc. 2018 Stock Plan.*	DEF14A	2/7/2019	Appendix B	
10.15	Form of Stock Award Agreement under the 2018 Stock Plan for Standard Awards granted to Employees. *	10-Q	5/31/2018	10.1	
10.16	Form of Stock Award Agreement under the 2018 Stock Plan for Long-Term Performance Program Awards. *	10-Q	5/31/2018	10.2	
10.17	Form of Stock Award Agreement under the 2018 Plan for Standard Awards granted to Employees (for awards made after November 13, 2018). *	10-K	12/20/2018	10.17	
10.18	Form of Stock Award Agreement under the 2018 Stock Plan for Long-Term Performance Program Awards (for awards made after November 13, 2018).	10-K	12/20/2018	10.18	
10.19	Agilent Technologies, Inc. Supplemental Benefit Retirement Plan (Amended and Restated Effective May 20, 2014).*	10-K	12/21/2017	10.17	
10.20	Agilent Technologies, Inc. Long-Term Performance Program (Amended and Restated through November 1, 2005).*	10-Q	3/9/2006	10.63	
10.21	Agilent Technologies, Inc. 2005 Deferred Compensation Plan for Non-Employee Directors (Amended and Restated Effective November 18, 2009).*	10-K	12/21/2009	10.39	
10.22	Agilent Technologies, Inc. 2005 Deferred Compensation Plan (Amended and Restated Effective May 20, 2014).*	10-K	12/21/2017	10.20	
10.23	Agilent Technologies, Inc. 2010 Performance-Based Compensation Plan for Covered Employees. (as adopted on November 19. 2014)	DEF14A	2/6/2015	Annex A	
10.24	Form of Amended and Restated Indemnification Agreement between Agilent Technologies, Inc. and Directors of the Company, Section 16 Officers and Board-elected Officers of the Company.*	8-K	4/10/2008	10.1	
10.25	Form of Tier I Change of Control Severance Agreement between Agilent Technologies, Inc. and the Chief Executive Officer*	10-K	12/22/2014	10.35	
10.26	Form of Amended and Restated Change of Control Severance Agreement between Agilent Technologies, Inc. and Section 16 Officers (other than the Company's Chief Executive Officer).*	8-K	4/10/2008	10.3	

Exhibit Number	Description	Incorporation by Reference			Filed Herewith
		Form	Date	Exhibit Number	
10.27	Form of Tier II Change of Control Severance Agreement between Agilent Technologies, Inc. and Section 16 Officers (other than the Company's Chief Executive Officer)*	10-K	12/22/2014	10.37	
10.28	Form of New Executive Officer Change of Control Severance Agreement between Agilent Technologies, Inc. and specified executives of the Company (for executives hired, elected or promoted after July 14, 2009).*	10-K	12/21/2009	10.5	
10.29	Form of Tier III Change of Control Severance Agreement between Agilent Technologies, Inc. and specified executives of the Company*	10-K	12/22/2014	10.39	
10.30	Tax Matters Agreement, dated August 1, 2014, by and between Agilent Technologies, Inc. and Keysight Technologies, Inc.	8-K	8/5/2014	10.1	
10.31	Employee Matters Agreement, dated August 1, 2014, by and between Agilent Technologies, Inc. and Keysight Technologies, Inc.	8-K	8/5/2014	10.2	
10.32	Intellectual Property Matters Agreement, dated August 1, 2014, by and between Agilent Technologies, Inc. and Keysight Technologies, Inc.	8-K	8/5/2014	10.3	
10.33	Trademark License Agreement, dated August 1, 2014, by and between Agilent Technologies, Inc. and Keysight Technologies, Inc.	8-K	8/5/2014	10.4	
10.34	Real Estate Matters Agreement, dated August 1, 2014, by and between Agilent Technologies, Inc. and Keysight Technologies, Inc.	8-K	8/5/2014	10.5	
10.35	Credit Agreement, dated March 13, 2019, by and among the Company, the Lenders party thereto and BNP Paribas, as Administrative Agent.	8-K	3/13/2019	10.1	
10.36	Amendment No. 1 to Credit Agreement, dated August 7, 2019, by and among the Company, the Lenders party thereto and BNP Paribas, as Administrative Agent	8-K	8/8/2019	10.1	
10.37	Amendment No. 2 to Credit Agreement, dated October 21, 2019, by and among the Company, the Lenders party thereto and BNP Paribas, as Administrative Agent	8-K	10/22/2019	10.1	
10.38	Amendment No. 3 to Credit Agreement, dated April 17, 2020, by and among the Company, the Lenders party thereto and BNP Paribas, as Administrative Agent	8-K	4/20/2020	10.1	
10.39	Amendment No. 4 to Credit Agreement, dated December 8, 2021, by and among the Company, the Lenders party thereto and BNP Paribas, as Administrative Agent	8-K	12/10/2021	10.1	
10.40	Incremental Assumption Agreement dated as of April 21, 2021, by and among the Company, the Lenders party thereto and BNP Paribas, as Administrative Agent	8-K	4/22/2021	10.1	
10.41	Term Loan Agreement, dated as of April 15, 2022, among the Company, the lenders party thereto, Wells Fargo Bank, National Association, as administrative agent.	8-K	4/19/2022	10.1	
10.42	Letter of Terms and Conditions International Long Term Assignment, by and among Jacob Thaysen and the Company*	10-K	12/22/2014	10.62	
10.43	Letter of Terms and Conditions Localization Program by and among Jacob Thaysen and the Company *	10-K	12/21/2015	10.70	

Exhibit Number	Description	Incorporation by Reference			Filed Herewith
		Form	Date	Exhibit Number	
10.44	Letter of Terms and Conditions of U.S. Indefinite Relocation and U.S. Domestic Relocation Agreement, each by and among Michael R. McMullen and the Company*	10-Q	3/8/2016	10.1	
10.45	Letter of Terms and Conditions of U.S. Indefinite Relocation and U.S. Domestic Relocation Agreement, each by and among Robert McMahon and the Company*	10-K	12/20/2018	10.41	
10.46	Letter of Terms and Conditions Localization Program by and among Padraig McDonnell and the Company*	10-Q	6/1/2020	10.2	
10.47	Agilent Technologies, Inc. Excess Benefit Retirement Plan (Amended and Restated Effective May 20, 2014)*	10-K	12/21/2017	10.4	
21.1	Significant subsidiaries of Agilent Technologies, Inc. as of October 31, 2022.				X
23.1	Consent of Independent Registered Public Accounting Firm.				X
24.1	Powers of Attorney. Contained in the signature page of this Annual Report on Form 10-K.				X
31.1	Certification of Chief Executive Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X
31.2	Certification of Chief Financial Officer pursuant to Section 302 of the Sarbanes-Oxley Act of 2002.				X
32.1	Certification of Chief Executive Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				X
32.2	Certification of Chief Financial Officer pursuant to Section 906 of the Sarbanes-Oxley Act of 2002.				X
101.INS	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	XBRL Taxonomy Extension Schema Document.				X
101.CAL	XBRL Taxonomy Extension Calculation Linkbase Document.				X
101.LAB	XBRL Taxonomy Extension Label Linkbase Document.				X
101.PRE	XBRL Taxonomy Extension Presentation Linkbase Document.				X
101.DEF	XBRL Taxonomy Extension Definition Linkbase Document.				X

* Indicates management contract or compensatory plan, contract or arrangement.

Item 16. Form 10-K Summary

None.

SIGNATURES

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

AGILENT TECHNOLOGIES, INC.

BY /s/ MICHAEL TANG

Michael Tang

Senior Vice President,

General Counsel and Secretary

Date: December 20, 2022

POWER OF ATTORNEY

KNOW ALL PERSONS BY THESE PRESENTS, that each person whose signature appears below constitutes and appoints Michael Tang and P. Diana Chiu, or either of them, his or her attorneys-in-fact, for such person in any and all capacities, to sign any amendments to this report and to file the same, with exhibits thereto, and other documents in connection therewith, with the Securities and Exchange Commission, hereby ratifying and confirming all that any of said attorneys-in-fact, or substitute or substitutes, may do or cause to be done by virtue hereof. Pursuant to the requirements of the Securities Exchange Act of 1934, this report has been signed below by the following persons on behalf of the registrant and in the capacities and on the dates indicated.

Signature	Title	Date
/s/ MICHAEL R. MCMULLEN **Michael R. McMullen**	Director, President and Chief Executive Officer (Principal Executive Officer)	December 20, 2022
/s/ ROBERT W. MCMAHON **Robert W. McMahon**	Senior Vice President and Chief Financial Officer (Principal Financial Officer)	December 20, 2022
/s/ RODNEY GONSALVES **Rodney Gonsalves**	Vice President, Corporate Controllership (Principal Accounting Officer)	December 20, 2022
/s/ KOH BOON HWEE **Koh Boon Hwee**	Chairman of the Board of Directors	December 20, 2022
/s/ MALA ANAND **Mala Anand**	Director	December 20, 2022
/s/ HANS E. BISHOP **Hans E. Bishop**	Director	December 20, 2022
/s/ OTIS W. BRAWLEY, M.D. **Otis W. Brawley, M.D.**	Director	December 20, 2022
/s/ G. MIKAEL DOLSTEN, M.D., PH.D. **G. Mikael Dolsten, M.D., PH.D.**	Director	December 20, 2022
/s/ HEIDI KUNZ **Heidi Kunz**	Director	December 20, 2022
/s/ DANIEL K. PODOLSKY, M.D. **Daniel K. Podolsky, M.D.**	Director	December 20, 2022
/s/ SUE H. RATAJ **Sue H. Rataj**	Director	December 20, 2022
/s/ GEORGE A. SCANGOS, Ph.D. **George A. Scangos, Ph.D.**	Director	December 20, 2022
/s/ DOW R. WILSON **Dow R. Wilson**	Director	December 20, 2022