

**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, 2024
OR**

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

**For the transition period from to
Commission File Number 0-19807**



SYNOPSYS, INC.

(Exact name of registrant as specified in its charter)

Delaware

(State or other jurisdiction of
incorporation or organization)

675 Almanor Avenue

Sunnyvale, California

(Address of principal executive offices)

56-1546236

(I.R.S. Employer
Identification No.)

94085

(Zip Code)

(650) 584-5000

(Registrant's telephone number, including area code)

Securities Registered Pursuant to Section 12(b) of the Act:

<u>Title of Each Class</u>	<u>Trading Symbol(s)</u>	<u>Name of Each Exchange on Which Registered</u>
Common Stock (par value of \$0.01 per share)	SNPS	Nasdaq Global Select Market

Securities Registered Pursuant to Section 12(g) of the Act: **None**

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

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

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

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

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

[Table of Contents](#)

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. ☒

If securities are registered pursuant to Section 12(b) of the Act, indicate by check mark whether the financial statements of the registrant included in the filing reflect the correction of an error to previously issued financial statements. ☐

Indicate by check mark whether any of those error corrections are restatements that required a recovery analysis of incentive-based compensation received by any of the registrant's executive officers during the relevant recovery period pursuant to § 240.10D-1(b). ☐

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

The aggregate market value of the voting and non-voting common equity held by non-affiliates computed by reference to the price at which the common equity was last sold as of the last business day of the registrant's most recently completed second fiscal quarter was approximately \$67.5 billion. Aggregate market value excludes an aggregate of approximately 26.0 million shares of the registrant's common stock, par value of \$0.01 per share (Common Stock) held by the registrant's executive officers and directors and by each person known by the registrant to own 5% or more of the outstanding common stock on such date. Exclusion of shares held by any of these persons should not be construed to indicate that such person possesses the power, direct or indirect, to direct or cause the direction of the management or policies of the registrant, or that such person is controlled by or under common control with the registrant.

On December 16, 2024, 154,578,449 shares of Common Stock were outstanding.

DOCUMENTS INCORPORATED BY REFERENCE

Portions of the registrant's definitive Proxy Statement relating to the registrant's 2025 Annual Meeting of Stockholders, scheduled to be held on April 10, 2025, are incorporated by reference into Part III of this Annual Report on Form 10-K where indicated. Except as expressly incorporated by reference, the registrant's Proxy Statement shall not be deemed to be part of this report.

SYNOPSYS, INC.
ANNUAL REPORT ON FORM 10-K
Fiscal year ended October 31, 2024
TABLE OF CONTENTS

	<u>Page No.</u>
<u>PART I</u>	
Item 1. Business	3
Item 1A. Risk Factors	14
Item 1B. Unresolved Staff Comments	31
Item 1C. Cybersecurity	31
Item 2. Properties	32
Item 3. Legal Proceedings	33
Item 4. Mine Safety Disclosures	33
<u>PART II</u>	
Item 5. Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities	34
Item 6. [Reserved]	35
Item 7. Management's Discussion and Analysis of Financial Condition and Results of Operations	36
Item 7A. Quantitative and Qualitative Disclosures About Market Risk	52
Item 8. Financial Statements and Supplementary Data	54
Item 9. Changes in and Disagreements with Accountants on Accounting and Financial Disclosure	105
Item 9A. Controls and Procedures	105
Item 9B. Other Information	106
Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections	106
<u>PART III</u>	
Item 10. Directors, Executive Officers and Corporate Governance	107
Item 11. Executive Compensation	107
Item 12. Security Ownership of Certain Beneficial Owners and Management and Related Stockholder Matters	107
Item 13. Certain Relationships and Related Transactions, and Director Independence	107
Item 14. Principal Accountant Fees and Services	107
<u>PART IV</u>	
Item 15. Exhibits and Financial Statement Schedules	108
Item 16. Form 10-K Summary	111
<u>SIGNATURES</u>	112

Cautionary Note Regarding Forward-Looking Statements

This Annual Report on Form 10-K (this Form 10-K or this Annual Report) contains forward-looking statements within the meaning of Section 27A of the Securities Act of 1933, as amended (the Securities Act), Section 21E of the Securities Exchange Act of 1934, as amended (the Exchange Act), and the Private Securities Litigation Reform Act of 1995. Any statements herein that are not statements of historical fact are forward-looking statements. Words such as “may,” “will,” “could,” “would,” “can,” “should,” “anticipate,” “expect,” “intend,” “believe,” “estimate,” “project,” “continue,” “forecast,” “likely,” “potential,” “seek,” or the negatives of such terms and similar expressions are intended to identify forward-looking statements. This Form 10-K includes, among others, forward-looking statements regarding:

- business and market outlook, opportunities, strategies and technological trends, such as artificial intelligence;
- planned acquisitions and their expected impact, including our pending acquisition of ANSYS, Inc. (the Ansys Merger);
- the potential impact of the uncertain macroeconomic environment on our financial results, including, but not limited to, the effects of sustained global inflationary pressures and interest rates, potential economic slowdowns or recessions, supply chain disruptions and geopolitical pressures;
- the expected impact of U.S. and foreign government trade restrictions and regulatory changes, including export control restrictions and tariffs, on our financial results;
- customer license renewals and the expected realization and timing of recognition of our contracted but unsatisfied or partially unsatisfied performance obligations (backlog);
- demand and market expansion for our products and our customers’ products;
- our ability to successfully compete in the markets in which we serve;
- our license mix, business model and variability in our revenue;
- the continuation of current industry trends towards customer and vendor consolidation, and the impact of such consolidation;
- the completion of development of our unfinished products, or further development or integration of our existing products;
- the status of litigation and/or regulatory investigations;
- our ability to protect our intellectual property;
- our ability to attract and retain senior management and key employees worldwide;
- the impact of tax laws and changes in such laws on our business;
- our cash, cash equivalents and cash generated from operations; and
- our future liquidity requirements.

These statements are based on our current expectations about future events and involve certain known and unknown risks, uncertainties and other factors that could cause our actual results, time frames or achievements to differ materially from those expressed or implied in our forward-looking statements. Accordingly, we caution readers not to place undue reliance on these statements. Such risks and uncertainties include, among others, those listed in Part I, Item 1A, *Risk Factors* and Item 3, *Legal Proceedings*; and Part II, Item 7, *Management’s Discussion and Analysis of Financial Condition and Results of Operations*, Item 7A, *Quantitative and Qualitative Disclosures About Market Risk* and Item 9A, *Controls and Procedures* of this Annual Report. The information included herein represents our estimates and assumptions as of the date of this filing. Unless required by law, we undertake no obligation to update publicly any forward-looking statements, or to update the reasons actual results could differ materially from those anticipated in these forward-looking statements, even if new information becomes available in the future. All subsequent written or oral forward-looking statements attributable to Synopsys, Inc. or persons acting on our behalf are expressly qualified in their entirety by these cautionary statements. Readers are urged to carefully review and consider the various disclosures made in this report and in other documents we file from time to time

with the Securities and Exchange Commission (SEC) that attempt to advise interested parties of the risks and factors that may affect our business.

Fiscal Year End

Historically, our fiscal years have been 52- or 53-week periods ending on the Saturday nearest to October 31. Fiscal 2024 was a 53-week year ending on November 2, 2024, which impacted our revenue, expenses and operating results. Fiscal 2023 and 2022 were 52-week years and ended on October 28, 2023 and October 29, 2022, respectively. We have changed our fiscal year end from the Saturday nearest to October 31 and consisting of 52 or 53 fiscal weeks to a fiscal year end of October 31 each year. The fiscal year change becomes effective with our fiscal year 2025, which began on November 3, 2024. Our fiscal quarters will end on January 31, April 30, July 31 and October 31 of each year.

For presentation purposes, this Annual Report refers to the closest calendar month end.

PART I

Item 1. *Business*

Company and Segment Overview

Synopsys, Inc. (Synopsys, we, our or us) delivers trusted and comprehensive silicon to systems design solutions, from electronic design automation (EDA), including system verification and validation solutions, to silicon intellectual property (IP). We partner closely with semiconductor and systems customers across a wide range of industries to maximize their engineering and research and development capacity. We are catalyzing the era of pervasive intelligence, powering innovation today that ignites the ingenuity of tomorrow.

We are a global leader in supplying the mission-critical EDA software that engineers use to design and test integrated circuits (ICs), also known as chips or silicon, and we are pioneering artificial intelligence (AI) driven chip design across the full-stack EDA suite to improve efficiency and accelerate the design, verification testing and manufacturing of advanced digital and analog chips. We provide software and hardware used to validate the electronic systems that incorporate chips and the software that runs on them, including cloud-based digital design flow to boost chip-design development productivity. We also provide technical services and support to help our customers develop advanced chips and electronic systems. These products and services are part of our Design Automation segment.

We also offer a broad and comprehensive portfolio of semiconductor IP solutions, which are pre-designed circuits that engineers use as components of larger chip designs to reduce integration risk and speed time to market. Our high quality, silicon-proven semiconductor IP includes logic libraries, embedded memories, analog IP, wired and wireless interface IP, security IP, embedded processors and subsystems. To accelerate IP integration and silicon bring-up, our IP Accelerated initiative provides architecture design expertise, hardening, and signal and power integrity analysis. These products and services are part of our Design IP segment.

Corporate Information

Our headquarters are located at 675 Almanor Avenue, Sunnyvale, California 94085, and our headquarters' telephone number is (650) 584-5000. Our website is <https://www.synopsys.com/>. We have 116 offices worldwide.

Our Annual Report on Form 10-K, Quarterly Reports on Form 10-Q, Current Reports on Form 8-K, Proxy Statements, including those relating to our Annual Meeting of Stockholders, and any amendments to such reports or other information filed or furnished pursuant to Section 13(a) or 15(d) of the Exchange Act are available through the Investor Relations page of our website (<https://investor.synopsys.com/overview/default.aspx>) free of charge as soon as reasonably practicable after we file them with, or furnish them to, the SEC (www.sec.gov). We use our Investor Relations page as a routine channel for distribution of important information, including, among other things, news releases, investor presentations and financial information and to comply with our disclosure obligations under Regulation Fair Disclosure. The contents of our website are not part of this Annual Report and shall not be deemed to be incorporated by reference.

Background

In today's era of pervasive intelligence, we have seen an acceleration in innovation cycles and a growing opportunity for Synopsys. The proliferation of silicon to power our digital world, where technology is omnipresent and interconnected, means computing is being reinvented with the rise of AI and software-defined systems. In turn, this is driving an increase in the activity of new and existing chip and system design companies around the world.

These developments are accompanied by increasing complexity. It is now common for a single chip to combine many components (processor, communications, memory, custom logic, input/output) and embedded software into a single system-on-chip (SoC), requiring highly complex chip designs. The most complex chips today contain more than a billion transistors. Transistors are the basic building blocks for ICs, each of which may have features that are less than 1/1,000th the diameter of a human hair.

These devices are manufactured using masks to direct beams of light onto a wafer of silicon. At such small dimensions, the wavelength of light itself can become an obstacle to production, proving too big to create such dense features and requiring creative and complicated new approaches. Designers have turned to new manufacturing techniques to solve these problems, such as multiple-patterning lithography, FinFET 3D transistors

and Gate-All-Around Field-Effect transistor structures, which in turn have introduced new challenges to design and production.

The rise of silicon-powered intelligent devices and AI has increased demand for chips and systems with greater functionality and performance, reduced size, and lower power consumption. Our customers, who design silicon and software-defined systems, are facing intense pressure to deliver innovative offerings in shorter timeframes and at lower prices. In other words, innovation in chip and systems design often hinges on providing products “better,” “sooner,” and “cheaper” than competitors. The design of these chips and systems is extremely complex and necessitates state-of-the-art solutions. Over the past several years, market verticals including AI, 5G, automotive and cloud computing infrastructure have contributed to the ongoing demand for our products and services.

Our Role—As the Silicon to Systems Design Solutions Partner

Synopsys' silicon to systems design solutions are designed to help our customers—chip and system engineers and software developers—speed up time to market, achieve the highest quality of results, mitigate risk, and maximize profitability.

Chip and systems designers must determine how best to design, locate and connect the building blocks of chips, and to verify that the resulting design behaves as intended and can be manufactured efficiently and cost-effectively. This is a complex, multi-step process that is expensive and time-consuming. Our wide range of products help at different steps in the overall design process, from the design of individual ICs to the design of larger systems. Our products increase designer productivity and efficiency by automating tasks, keeping track of large amounts of data, adding intelligence to the design process, facilitating reuse of past designs and reducing errors. Our IP products offer proven, high-quality pre-configured circuits that are ready to use in a chip design, saving customers time and enabling them to direct resources to features that differentiate their products. Our global service and support engineers provide expert technical support and design assistance to our customers.

Products and Services

Design Automation Segment

Our Design Automation segment includes the EDA and Other revenue groups.

EDA

Designing ICs involves many complex steps, including, among others architecture definition, register transfer level (RTL) design, functional/RTL verification, logic design or synthesis, gate-level verification, floorplanning, place and route, and physical verification. Designers use our EDA products to accelerate and automate the chip design process, reduce errors and enable more powerful and robust designs, with improved productivity for faster time to market.

As the availability and amount of cloud-based data storage grows, customer interest in accessing EDA on the cloud is also increasing as customers seek to benefit from the scalability and flexibility that cloud computing can offer to their flows and engineering teams. While many of our solutions have been used in cloud-based environments for years, such as in a customer's own server and/or cloud environment, in fiscal 2022 we launched a Synopsys Cloud offering that provides customers additional options for accessing our EDA products in their own cloud environments and in the industry's first EDA Software-as-a-Service solution developed in partnership with Microsoft Azure.

Our solutions comprehensively address the design process, featuring a large number of EDA products that generally fall into the following categories:

- Digital and custom IC design tools are used for designing and verifying complex chips, and for designing the advanced processes and models required to manufacture those chips;
- Field programmable gate array (FPGA) design, which accelerate time-to-shipping hardware with deep debug visibility, incremental design, broad language support, and optimal performance and area for FPGA-based products.
- Verification, which includes technology to verify that an IC design behaves as intended;
- Manufacturing, which includes products that both enable early manufacturing process development and convert IC design layouts into the masks used to manufacture the chips; and
- AI-driven EDA solutions, which include AI and machine learning capabilities to boost productivity and improve efficiency throughout the EDA flow.

Digital and Custom IC Design

Our Digital Design Family provides customers with a comprehensive digital design implementation solution that includes industry-leading products and redefines conventional design tool boundaries to deliver a more integrated flow than ever before, with better quality and time to results. The platform gives designers the flexibility to integrate internally developed tools as well as those from third parties. With innovative technologies, a common foundation, and flexibility, our Digital Design Family helps reduce design times, decrease uncertainties in design steps, and minimize the risks inherent in advanced, complex IC design. The platform supports multiple technology nodes, including advanced nodes at 12nm, 10nm, 8/7nm, 6 nm, 5/4nm, 3nm and 2 nm, with technology collaborations on next-generation process technologies.

Key design products are available as part of the Digital Design Family and include Fusion Compiler™ RTL to GDSII design implementation, Design Compiler® NXT logic synthesis, IC Compiler™ II physical design, Synopsys TestMAX™ test and diagnosis, PrimeTime® static timing analysis, PrimePower power analysis, PrimeLib library characterization, StarRC™ parasitic extraction, IC Validator™ physical verification and 3DIC Compiler, the industry's first next-generation chip packaging solution, aimed at enabling customers to combine or stack multiple dice on a single chip.

Our Custom Design Family is a unified suite of design and verification tools that accelerates the transistor-level design of robust analog, mixed-signal, and custom-digital ICs. This product family features visually assisted layout automation, high-performance circuit simulation, reliability-aware verification, and natively integrated parasitic RC extraction and physical verification. It includes Custom Compiler™ layout and schematic editor, StarRC parasitic extraction, IC Validator physical verification and PrimeSim™. The PrimeSim solution provides a unified workflow of next-generation simulation technologies to accelerate the design and signoff of IC designs including PrimeSim SPICE, PrimeSimPro, PrimeSim HSPICE™ and PrimeSimXA. The PrimeWave™ design environment provides comprehensive analysis and improved productivity and ease of use across all tools in PrimeSim.

Our Silicon Lifecycle Management (SLM) family of products improves silicon health and operational metrics at every phase of the device lifecycle. This family of products is built on a foundation of enriched in-chip observability, analytics and integrated automation. Synopsys' SLM in-chip monitoring enables deep insights from silicon to systems by providing meaningful data for continuous analysis and actionable feedback. The solution is integrated with the Digital Design Family for design calibration and analytics and includes Yield Explorer® for product ramp analytics, Silicon.da for AI-driven test and production analytics, TestMAX ALE (adaptive learning engine) for intelligent data extraction and communication to the SLM database and PVT IP for in-chip monitoring and sensing.

FPGA Design

FPGAs are complex chips that can be customized or programmed to perform a specific function after they are manufactured. For the process of converting a high-level hardware description language design into an FPGA netlist, a process known as FPGA-logic synthesis, we offer Synplify® FPGA synthesis tools that provide fast runtime, performance, area optimization for cost and power reduction, multi-FPGA vendor support, and incremental synthesis capabilities for faster FPGA design development.

Verification

Our Verification Family is built from our industry-leading verification technologies and provides virtual prototyping, static and formal verification, simulation, emulation, FPGA-based prototyping and debug in a unified environment with verification IP, planning, and coverage technology. By providing consistent compile, runtime and debug environments across the flow of verification tasks and by enabling seamless transitions across functions, the platform helps our customers accelerate chip verification, bring up software earlier, and get to market sooner with advanced SoCs.

The individual products and solutions included in the Verification Family include the following:

- VC SpyGlass™ family of static verification technologies including lint, CDC (clock domain crossing), RDC (reset domain crossing), Constraint Checking, Synopsys TestMAX Advisor, and low-power analysis and verification;
- VCS® functional verification solution, our comprehensive RTL and gate-level simulation technology, including Fine-Grained Parallelism;
- Verdi®, our next generation platform that provides AI-based SoC debug solution with an integrated development environment and advanced verification management capabilities system;

[Table of Contents](#)

- VC Formal™, which leverages ML-based techniques to verify complex SoC designs, find deep corner-case design bugs, and enables formal signoff for control and datapath blocks;
- ZeBu® emulation systems, which use high-performance hardware to emulate SoC designs so that designers can accelerate hardware, software and power verification of large complex SoCs and perform earlier verification and optimization of the SoC together with software;
- HAPS® FPGA-based prototyping systems, which are integrated and scalable hardware-software solutions for early software development, hardware verification and system validation of IP blocks to processor subsystems to complete SoCs, including the use of at-speed interfaces, for better performance, higher quality and faster time to market;
- Virtualizer™ virtual prototyping solution, which addresses the increasing development challenges associated with software-rich semiconductor and electronic products by accelerating both the development and deployment of virtual prototypes;
- Platform Architect™ solution, which provides for early analysis and optimization of multi-core SoC architectures for performance and power; and
- Other principal individual verification solutions, including the PrimeSim solution and the PrimeWave design environment.

Manufacturing

Our manufacturing solutions include Synopsys technology computer-aided design (TCAD), mask synthesis and manufacturing analytics. Synopsys TCAD enables computer-aided simulations to develop and optimize semiconductor process technologies. We also offer Proteus™ Mask Synthesis tools, CATS® mask data preparation software, Yield Explorer Odyssey, Yield-Manager® yield management solutions and QuantumATK™ atomic-scale modeling software. Synopsys enables its customers to realize the benefits of smart manufacturing by using advanced techniques in AI/ML and large data sets. These smart manufacturing solutions are built upon Synopsys' extensive expertise in IC design, mask synthesis, process modeling, on-chip test and monitoring techniques and cloud-based data analytics.

We also provide consulting and design services that address all phases of the SoC development process, as well as a broad range of expert training and workshops on our latest tools and methodologies.

Synopsys.ai: Synopsys' AI-Driven EDA Stack

Our EDA software stack spanning design, verification, and manufacturing is augmented with AI and machine learning through our Synopsys.ai™ suite of complementary solutions. Synopsys.ai offers industry leading AI-driven workflow optimization and data analytics solutions along with breakthrough generative AI capabilities, allowing engineers to accelerate and automate chip design and improve efficiency throughout the entire EDA flow.

The Synopsys.ai suite of solutions include:

- DSO.ai™ – Design Space Optimization for best quality of results and productivity with scaling of exploration design workflows;
- VSO.ai™ – Verification Space Optimization for optimal functional verification coverage and faster turnaround time;
- TSO.ai™ – Test Space Optimization for reduced pattern count, turnaround time and higher coverage;
- ASO.ai™ – Analog Space Optimization for analog design and layout optimization and migration;
- Design.da – Design data analytics for actionable insights to unlock untapped power, performance, and area;
- Silicon.da – Silicon data analytics for root-cause analysis and part-level traceability of failures to improve key production and silicon operational metrics; and
- Fab.da – Manufacturing data analytics for improved process control, time to market and higher yield.

Other

Our Other product group includes revenue from sales of products to university programs as well as our optical products, mechatronic simulation, and the impact of gains and losses from foreign currency hedges.

Design IP Segment

Our Design IP segment includes our Design IP products, which service companies primarily in the semiconductor and electronics industries.

Design IP Products

As more functionality converges into a single chip or even a multi-die system, the number of third-party IP blocks incorporated into designs is rapidly increasing. We provide the broadest, most comprehensive portfolio of high-quality, silicon-proven IP solutions for SoCs. Our broad Synopsys IP portfolio includes:

- High-quality solutions for widely used interfaces such as UCIe, USB, PCI Express, DDR, Ethernet, MIPI and HDMI;
- Logic libraries and embedded memories, including memory compilers, non-volatile memory, and standard cells with integrated test and repair;
- Processor solutions, including configurable ARC® processors, Neural Network processors, Digital Signal Processor cores, and software and application-specific instruction-set processor tools for embedded applications;
- Security IP solutions, including cryptographic cores and software, security subsystems, platform security and secured interface IP;
- An industry-leading IP offering for the automotive market, optimized for strict functional safety, reliability and cybersecurity standards such as ISO 26262 and ISO 21434; and
- SoC infrastructure IP, datapath and building block IP, mathematical and floating-point components, Arm® AMBA® interconnect fabric and peripherals, and verification IP.

Our IP Accelerated initiative augments our established, broad portfolio of silicon-proven Synopsys IP with SoC architecture design support, customized IP subsystems, signal/power integrity analysis and IP hardening to accelerate the product development cycle.

We offer a broad portfolio of IP that has been optimized to address specific application requirements for the mobile, automotive, digital home, Internet of things and AI/data center markets, enabling designers to quickly develop SoCs in these areas.

Customer Service and Technical Support

A high level of customer service and support is critical to the adoption and successful use of our products. We provide technical support for our products through application engineering teams.

Post-contract customer support includes providing frequent updates to maintain the utilization of the software due to rapid changes in technology. In our Design Automation and Design IP segments, post-contract customer support for our EDA and IP products also includes access to the SolvNet® Plus portal, where customers can explore our complete design knowledge database, access self-help and receive support. Updated regularly, the SolvNet Plus portal includes technical documentation, design tips and answers to user questions. Customers can also engage, for additional charges, with our worldwide network of applications consultants for additional support needs.

In addition, we offer training workshops designed to increase customer design proficiency and productivity with our products. Workshops cover our EDA products and methodologies used in our design and verification flows, as well as specialized modules addressing systems design, logic design, physical design, simulation and testing. We offer regularly scheduled public and private courses in a variety of locations worldwide, as well as online training (live or on-demand) through our Virtual Classrooms.

Product Warranties

We generally warrant our products to be free from defects in media and to substantially conform to material specifications for a period of 90 days for our software products and for up to six months for our hardware products. In certain cases, we also provide our customers with limited indemnification with respect to claims that their use of our software products infringes on patents, copyrights, trademarks or trade secrets. We have not experienced material warranty or indemnity claims to date.

Support for Industry Standards

We actively create and support standards that help our EDA and IP customers increase productivity, facilitate efficient design flows, improve interoperability of tools from different vendors and ensure connectivity, functionality and interoperability of IP building blocks. Standards in the electronic design industry can be established by formal accredited organizations, industry consortia, intercompany licensing, de facto usage, or through open-source licensing. Our products support multiple Application Programming Interfaces (APIs) including numerous commonly used frameworks and data and file formats.

In our Design Automation segment, our EDA products support many standards, including the many commonly used hardware description languages: SystemVerilog, Verilog, VHDL and SystemC. Our products utilize numerous industry-standard data formats, APIs and databases for the seamless exchange of design data among our tools, other EDA vendors' products and applications that customers develop internally across design flows.

In our Design IP segment, we support a wide range of industry standards within our IP product family to ensure usability and interconnectivity.

Sales and Distribution

Our Design Automation and Design IP segment customers are primarily semiconductor and electronics systems companies. We market our products and services primarily through direct sales in the United States and our principal foreign markets. We typically distribute our software products and documentation to customers electronically.

We maintain sales and support centers throughout the United States. Outside the United States, we maintain sales, support or service offices in Canada, multiple countries in Europe, Israel and throughout Asia, including Japan, China, Korea, India and Taiwan. Our offices are further described under Part I, Item 2, *Properties* of this Annual Report.

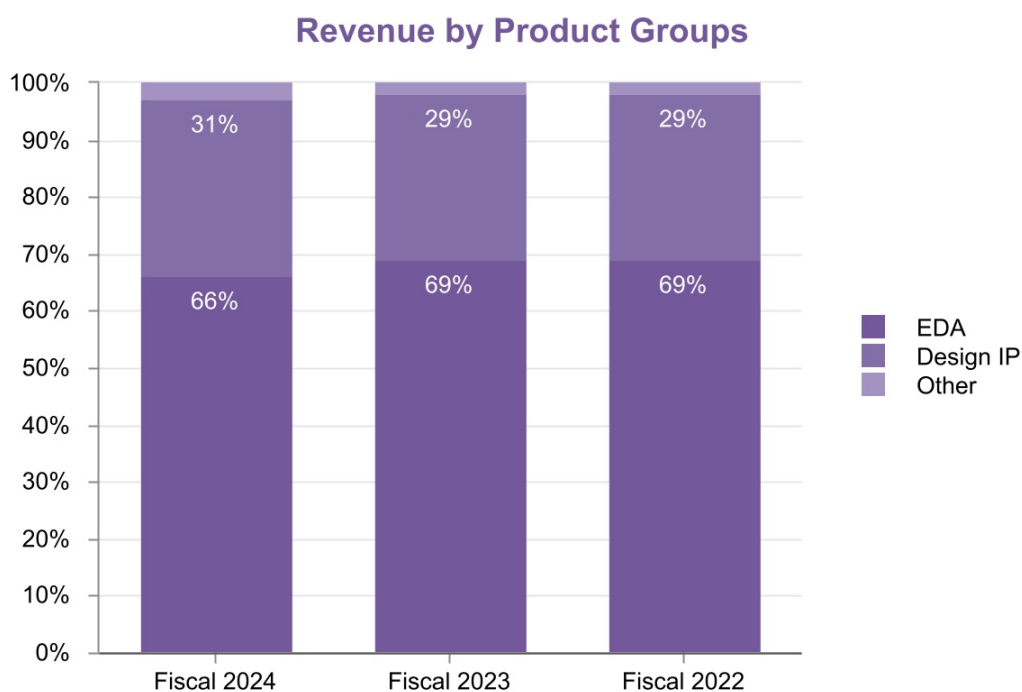
Information relating to domestic and foreign operations, including revenue and long-lived assets by geographic area, is contained in Part II, Item 8, *Financial Statements and Supplementary Data* of this Annual Report. Risks related to our foreign operations are described in Part I, Item 1A, *Risk Factors* of this Annual Report.

Revenue Attributable to Product Groups

Revenue from our products and services is categorized into three groups:

- EDA, which includes digital and custom IC design software, verification hardware and software products, manufacturing-related design products, FPGA design software, AI driven EDA solutions, and professional services;
- Design IP, which includes our interface, foundation, security, and embedded processor IP, IP subsystems, and IP implementation services; and
- Other, which includes university programs, optical products, mechatronic simulation, and the impact of gains and losses from foreign currency hedges.

Revenue attributable to each of our three product groups is shown below as a percentage of our total revenue for those fiscal years.



Aggregate revenue derived from one of our customers and its subsidiaries through multiple agreements accounted for 12.6%, 13.5% and 12.8% of our total revenue in fiscal 2024, 2023 and 2022, respectively.

Product Sales and Licensing Agreements

We typically license our software to customers under non-exclusive license agreements that restrict use of our software to specified purposes within specified geographical areas. The majority of licenses to our EDA products are network licenses that allow a number of individual users to access the software on a defined network, including, in some cases, regional or global networks. License fees depend on the type of license, product mix, and number of copies of each product licensed. For a full discussion of our software product offerings, see Part II, Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations* of this Annual Report.

We typically license Synopsys IP products under nonexclusive license agreements that provide usage rights for a specific number of designs. Fees under these licenses are typically charged on a per design basis plus, in some cases, royalties. See Note 2. *Significant Accounting Policies and Bases of Presentation* of the *Notes to Consolidated Financial Statements* in this Annual Report for further information.

[Table of Contents](#)

Our hardware products, which principally consist of our emulation and prototyping systems, are either sold or leased to our customers. Risks related to disruptions in our supply chain affecting our business are described in Part I, Item 1A, *Risk Factors* of this Annual Report.

Our professional services team typically provides design consulting services to our customers under consulting agreements with statements of work specific to each project.

Competition

Within our Design Automation segment, we compete against other EDA vendors and against our customers' own design tools and internal design capabilities. The EDA industry is highly competitive. In general, we compete principally on technology leadership, product quality and features (including ease-of-use), license terms, price and payment terms, post-contract customer support, flexibility of tool use, and interoperability with our own and other vendors' products. We also deliver a significant amount of engineering and design consulting for our products. No single factor drives an EDA customer's buying decision, and we compete on all fronts to capture a higher portion of our customers' budgets. Our competitors include EDA vendors that offer varying ranges of products and services, such as Cadence Design Systems, Inc. and Siemens EDA. We also compete with other EDA vendors, including new entrants to the marketplace, that offer products focused on one or more discrete phases of the IC design process, as well as with customers' internally developed design tools and capabilities.

Within our Design IP segment, Synopsys competes against numerous other IP providers, including Cadence Design Systems, Inc., and our customers' internally developed IP. We generally compete on the basis of product quality, reliability, features, availability of titles for new manufacturing processes, ease of integration with customer designs, compatibility with design tools, license terms, price and payment terms, and customer support. Likewise, no single factor drives an IP customer's buying decision, and we compete on all fronts to capture a higher portion of our customers' budgets.

Risks related to competitive factors affecting our business are described in Part I, Item 1A, *Risk Factors* of this Annual Report.

Proprietary Rights

We primarily rely upon a combination of copyright, patent, trademark, and trade secret laws and license and non-disclosure agreements to establish and protect our proprietary rights. We have a diversified portfolio of more than 3,400 United States and foreign patents issued, and we will continue to pursue additional patents in the future. Our issued patents have expiration dates through 2044 and generally have a term of 20 years from filing. Our patents primarily relate to our products and the technology used in connection with our products. Our source code is protected both as a trade secret and as an unpublished copyrighted work. However, third parties may independently develop similar technology. In addition, effective copyright and trade secret protection may be unavailable or limited in some foreign countries in which we operate. While protecting our proprietary technology is important, our business as a whole is not significantly dependent upon any single patent, copyright, trademark, or license.

In many cases, under our customer agreements and other license agreements, we offer to indemnify our customers if the licensed products infringe on a third party's intellectual property rights. As a result, we may from time to time need to defend claims that our customers' use of our products infringes on these third-party rights. We license software and other intellectual property from third parties, including, in several instances, for inclusion in our products. Risks related to our use of third-party technology are described in Part I, Item 1A, *Risk Factors* of this Annual Report.

Environmental, Social and Governance Matters

At Synopsys, we recognize that as we drive innovation and business success in the era of pervasive intelligence, we are simultaneously responsible for the sustainability of our operations, products, and ecosystem, which may impact our long-term value as a company.

Our Environmental, Social and Governance (ESG) strategy provides a focus and structure for how we manage our own operational impact and help others in our ecosystem to do the same. For example, Synopsys is driving energy savings in the semiconductor ecosystem through solutions that optimize energy efficiency in the design and use of chips and systems, along with solutions that reduce energy use, water use, and waste in semiconductor manufacturing.

We maintain a robust governance structure for our ESG efforts, gauging and acting on our highest priority ESG impacts, business risks, and opportunities, as we believe this creates positive impact for our stockholders as well as our customers, employees, partners, and local communities.

Human Capital Resources

Synopsys' mission is to empower technology innovators everywhere, and we believe our people are the key to our success. Our People and Places Team, led by our Chief People Officer, focuses on building a workplace where our talent around the globe can enthusiastically be their authentic selves and bring their best to the workplace. This includes open communication, sparking creative ideas, listening, collaborating, working on new challenges, and developing solutions that drive innovation for our customers. Through our ecosystem of learning and growth opportunities, collaboration and innovation tools, creative work environments, and robust total rewards, we help our employees thrive and do great work. We believe this creates value for us, our stockholders and our customers.

As of our fiscal 2024 year-end, Synopsys had approximately 20,000 employees. Approximately 20% of these employees are in the United States and 80% are in other locations around the world. Approximately 87% of our employees are engineers, and over half of those employees hold Masters or PhD degrees. We focus on several human capital measures and objectives, including recruitment and retention; inclusion and belonging; total rewards; employee health, safety, and wellbeing; employee engagement; and talent development and succession planning. Risks related to our human capital are described in Part I, Item 1A, *Risk Factors* of this Annual Report.

Recruitment and Retention

In fiscal 2024, despite hiring new employees, our total employee headcount decreased by approximately 1% due to the divestiture of our Software Integrity business. As of our fiscal 2024 year-end, our voluntary turnover rate was 6.4%. We attribute the strong retention of our talented workforce to several factors, including exciting and challenging assignments; growth opportunities; strong leadership and management; a culture of integrity and caring; our commitment to inclusion; competitive and equitable compensation and benefits; our leading products and technology; and the strength of our customer relationships.

Inclusion and Belonging

At Synopsys, we believe that our success depends, in part, on having inclusive teams of extraordinary professionals around the world who are empowered to innovate and create an inclusive culture where all employees feel seen and respected. Our work creating an inclusive Synopsys spans across every part of the employee experience, even before a new hire arrives. Because our leaders and managers play a key part in creating this experience, we want them to have the mindset and skills to lead inclusively. We are committed to upholding this important part of our culture. Consistent with our pledge of removing barriers to success and ensuring fairness for all, we regularly review and seek to improve talent management processes that impact the employee experience at Synopsys. These include hiring, compensation, talent development, and promotions.

Creating an inclusive culture requires actively listening to our employees and demonstrating real interest, curiosity, and inclusiveness. With the goal of elevating each person's individual worth to benefit the workforce as a whole, we offer programs and events globally designed to help our employees learn about each other, foster connections, and demonstrate inclusivity every day. Our Employee Resource Groups (ERG) are an example. They create space for our employees to brainstorm, share experiences and ideas, and build welcoming communities that positively impact our business, culture, and the world beyond our walls. In fiscal 2024, two new Employee Resource Groups were created: Caregivers and Parents ERG (CAPE) and the Synopsys Neurodiversity Group (SYNG), bringing our total number of ERGs to seven.

Total Rewards

Our Total Rewards program offers meaningful global benefits and compensation for the time, energy, commitment, skills, and expertise employees bring to the company every day. Our practices are intended to deliver fair and equitable compensation for employees based on their contribution and performance. We benchmark market practices and regularly review our compensation and benefits against the market to help ensure that it is competitive. We also offer a comprehensive set of benefits for employees and their families focused on physical, mental, and financial health and wellbeing. Our compensation and benefits programs are tailored to the various geographies in which we operate and, for eligible employees, may include:

- Market-competitive salary and cash bonus opportunity;

[Table of Contents](#)

- Employee Stock Purchase Plan;
- Equity compensation;
- Robust medical, dental, vision, and wellness benefits;
- Comprehensive leave plans;
- Life insurance options;
- Retirement plans and associated benefits;
- Financial planning tools and employee assistance plans;
- Student loan repayment assistance;
- Cancer-specific prevention, early detection, treatment, and support programs; and
- Parental resources and adoption benefits.

Health, Safety and Wellbeing

Our commitment to health, safety, and wellness was underscored this year by the support and resources we offered to help employees continue to thrive in a hybrid work environment, and achieve balance between their work and personal lives. Our Stronger Through Wellbeing campaign encourages our leaders and managers to model the importance of health and wellbeing and create opportunities to engage in wellness-related activities as a team. We also offer a variety of programs and resources at no cost to employees and their family members to support their mental, emotional, and financial wellbeing.

Employee Engagement

We have a comprehensive employee feedback program, and we use the feedback to gain an understanding of the employee experience and to make improvements in a variety of areas. These areas include how we interact with customers to how we share best practices, and more. Through our annual SHAPE Synopsys surveys, we obtain employee insight into our values, manager effectiveness, ability to innovate, perceptions on inclusion and belonging, and other critical factors. We also use pulse surveys to create space for important conversations about who we are, where we are going, and how we can connect with each other and our work.

In October 2024, approximately 91% of our employees participated in the SHAPE survey. We received an engagement score of 80, which was calculated by averaging the scores of all employee responses to questions about job satisfaction on a 100-point scale. In fiscal 2024, Synopsys received nearly 60 awards for workplace and culture, including certification as a Great Place to Work in 14 countries and recognition from Newsweek, Forbes, Fortune, US News and World Report, Comparably, and more. These results demonstrate Synopsys' stability and resiliency, and the fact that we have a global workforce that is highly engaged. We saw strong scores from our employees regarding their excitement for the company's future, trust in leadership, sense of belonging to Synopsys, and personal investment in the mission. To help promote employee engagement and recognition, we invest in programs such as the annual Engineering and Innovation Conference (EILC) and Pitch Fest innovation contest to empower our team and inspire innovation. As we grow, we aspire to maintain our results-oriented culture by balancing productivity with smart investments in our employees' development, while also supporting individual wellbeing. These are two key drivers of the overall employee experience.

We also believe ongoing performance feedback encourages greater engagement in our business and improved individual performance. Each year, our employees participate in our performance development process, which summarizes key accomplishments for the preceding year, establishes new stretch goals and objectives, and identifies critical capabilities for development. As part of this process, we encourage managers to solicit and share supportive multi-rater feedback, further strengthening the focus on teamwork and team success.

Talent Development and Succession Planning

We offer several programs to support the career advancement of our employees. Through our digital learning platform, we seek to foster and support a "curious learning" culture where employees can access training, external articles, videos, and blogs. In addition, we host a series of in-person and on-demand learning sessions designed to build capability and adaptability required for the future. As employees advance in their careers, our training framework is intended to build new technical skills and core capabilities.

Our management training is designed to increase capability in the areas of communication, engagement, coaching, inclusion and belonging, hiring, and key business skills. This is based on our belief that our employees should work for and with great managers and leaders. The training aims to promote an ethical and supportive work environment that is free from bias and harassment. In fiscal 2024, we introduced courses for our front line and middle

management focused on helping our many managers lead through change and giving them the tools to be great coaches and leaders. In addition, our regions and business teams customize development programs for their specific demographic.

Information about our Executive Officers

The executive officers of Synopsys and their ages as of December 18, 2024 were as follows:

Name	Age	Position
Sassine Ghazi	54	President and Chief Executive Officer
Aart J. de Geus	70	Executive Chair of the Board of Directors
Shelagh Glaser	60	Chief Financial Officer
Richard Mahoney	62	Chief Revenue Officer
John F. Runkel, Jr.	69	General Counsel and Corporate Secretary

Sassine Ghazi has served as our Chief Executive Officer since January 2024, became our President in November 2021 and joined our Board of Directors in August 2023. Prior to his appointment as Chief Executive Officer, he served as Chief Operating Officer from August 2020 to January 2024. Mr. Ghazi joined Synopsys in March 1998 as an applications engineer and held a series of sales positions with increasing responsibility, culminating in leadership of worldwide strategic accounts. Prior to his appointment as Chief Operating Officer, Mr. Ghazi was the general manager for all digital and custom products, the largest business group in Synopsys. Prior to joining Synopsys, Mr. Ghazi was a design engineer at Intel Corporation. Mr. Ghazi received his bachelor's degree in Business Administration from Lebanese American University; a B.S.E.E from the Georgia Institute of Technology in 1993; and an M.S.E.E. from the University of Tennessee in 1995.

Aart J. de Geus co-founded Synopsys and served as a member of our Board of Directors since our inception and as Chair of our Board of Directors from 1986 to 1992 and from 1998 until his transition to Executive Chair of our Board of Directors in January 2024. He served as Chief Executive Officer from 1994 to 2012 and as Co-Chief Executive Officer with Dr. Chi-Foon Chan from May 2012 until April 2022, and Chief Executive Officer from April 2022 until January 2024. Since the inception of Synopsys in December 1986, Dr. de Geus has held a variety of positions, including President, Senior Vice President of Engineering and Senior Vice President of Marketing. Dr. de Geus has also served on the board of directors of Applied Materials, Inc. since July 2007. Dr. de Geus holds an M.S.E.E. from the Swiss Federal Institute of Technology in Lausanne, Switzerland and a Ph.D. in Electrical Engineering from Southern Methodist University.

Shelagh Glaser has served as our Chief Financial Officer since December 2022. Prior to joining Synopsys, Ms. Glaser served as Chief Financial Officer of Zendesk, Inc. from May 2021 to November 2022. Ms. Glaser previously served in senior finance roles at Intel Corporation, a multinational technology company, including serving as its Corporate Vice President and Chief Financial Officer and Chief Operating Officer for its Data Platform Group from July 2019 to May 2021 and serving as its Corporate Vice President and Chief Financial Officer and in various other senior roles in its Client Computing Group from December 2013 to July 2019. Ms. Glaser has served as a director and member of the Audit Committee at PubMatic, Inc. since June 2022. Ms. Glaser holds a B.A. in Economics from the University of Michigan and an M.B.A. in Finance from Carnegie Mellon University.

Richard Mahoney has served as our Chief Revenue Officer since November 2022. Mr. Mahoney joined Synopsys as a Special Projects Advisor in May 2022. Prior to joining Synopsys, Mr. Mahoney held several senior management positions with ANSYS, Inc. (Ansys) from 2016 to 2022, including most recently as Senior Vice President of Worldwide Sales, Marketing and Customer Excellence from December 2016 to May 2022. Prior to joining Ansys, from 2014 to 2016, Mr. Mahoney was Senior Vice President, Design Enablement and International Sales, at Global Foundries, a semiconductor manufacturing company. Mr. Mahoney holds an A.S. in Computer Science from the Maxwell Institute of Technology.

John F. Runkel, Jr. has served as our General Counsel and Corporate Secretary since May 2014. From October 2008 to March 2013, he was Executive Vice President, General Counsel, and Corporate Secretary of Affymetrix, Inc. He served as Senior Vice President, General Counsel and Corporate Secretary of Intuitive Surgical, Inc. from 2006 to 2007. Mr. Runkel served in several roles at VISX, Inc. from 2001 to 2005, most recently as Senior Vice President of Business Development and General Counsel. Mr. Runkel was also a partner at the law firm of Sheppard, Mullin, Richter & Hampton LLP for 11 years. Mr. Runkel holds a Bachelor of Arts and a Juris Doctorate from the University of California, Los Angeles.

There are no family relationships among any Synopsys executive officers or directors.

Item 1A. Risk Factors**Risk Factor Summary**

Our business is subject to numerous risks and uncertainties. These risks include, but are not limited to, the following:

Industry Risks

- *Uncertainty in the macroeconomic environment, and its potential impact on the semiconductor and electronics industries, may negatively affect our business, operating results and financial condition.*
- *The growth of our business depends primarily on the semiconductor and electronics industries.*
- *We operate in highly competitive industries, and if we do not continue to meet our customers' demand for innovative technology at lower costs, our products may not be competitive or may become obsolete.*
- *We are subject to governmental export and import requirements that could subject us to liability and restrict our ability to sell our products and services, which could impair our ability to compete in international markets.*
- *Consolidation among our customers and within the industries in which we operate, as well as our dependence on a relatively small number of large customers, may negatively impact our operating results.*

Business Operations Risks

- *The global nature of our operations exposes us to increased risks and compliance obligations.*
- *Our operating results may fluctuate in the future, which may adversely affect our stock price.*
- *We may not be able to realize the potential financial or strategic benefits of the transactions we complete, or find suitable target businesses and technology to acquire.*
- *Cybersecurity threats or other security breaches could compromise sensitive information belonging to us or our customers and could harm our business and our reputation.*
- *If we fail to protect our proprietary technology, our business will be harmed.*
- *We may not be successful in our AI initiatives, which could adversely affect our business, operating results or financial condition.*
- *If we fail to timely recruit and/or retain senior management and key employees globally, our business may be harmed.*
- *We may pursue new product and technology initiatives or expand into adjacent markets, and if we fail to successfully carry out these initiatives, we could be adversely impacted.*
- *We may have to invest more resources in research and development than anticipated, which could increase our operating expenses and negatively affect our operating results.*
- *Product errors or defects could expose us to liability and harm our reputation and we could lose market share.*
- *Our hardware products, which primarily consist of prototyping and emulation systems, subject us to distinct risks.*
- *From time to time, we are subject to claims that our products infringe on third-party intellectual property rights.*
- *We may not be able to continue to obtain licenses to third-party software and intellectual property on reasonable terms or at all, which may disrupt our business and harm our financial results.*
- *Liquidity requirements in our U.S. operations may require us to raise cash in uncertain capital markets, which could negatively affect our financial condition.*

Risks Related to the Ansys Merger

- *We may fail to complete the Ansys Merger or may not complete it on the terms described herein or in our other filings with the SEC.*
- *The Ansys Merger is subject to the receipt of governmental approvals that may impose conditions that could have an adverse effect on us or, if not obtained, could prevent completion of the Ansys Merger.*
- *Failure to realize the benefits expected from the Ansys Merger could adversely affect our business, operating results and financial condition.*
- *As a result of the Ansys Merger, we anticipate that the scope and size of our operations and business will substantially change and will result in certain incremental risks to us, including increased competition. We may not realize the full expected benefits of the Ansys Merger.*
- *Our significant debt may limit our financial flexibility following the Ansys Merger.*

- *The covenants contained in the agreements governing our indebtedness following the Ansys Merger may impose restrictions on us and certain of our subsidiaries that may affect our ability to operate our businesses.*

Legal and Regulatory Risks

- *Changes in tax laws and regulations or interpretations thereof, or any change in the application of existing laws and regulations may adversely affect our effective tax rates and financial results.*
- *Our business is subject to evolving corporate governance and public disclosure regulations and expectations that could expose us to numerous risks.*
- *We may be subject to litigation proceedings that could harm our business.*

General Risks

- *Catastrophic events and the effects of climate change, pandemics or other unexpected events may disrupt our business and harm our operating results.*

Factors that May Affect Future Results

Descriptions of risks associated with our business are set forth below. Some of these risks are highlighted in the following discussion and in *Management's Discussion and Analysis of Financial Condition and Results of Operations, Legal Proceedings, Controls and Procedures and Quantitative and Qualitative Disclosures About Market Risk* of this Annual Report. The occurrence of any of these risks or additional risks and uncertainties not presently known to us or that we currently believe to be immaterial could materially and adversely affect our business, financial condition, operating results and stock price. These risks and uncertainties could cause our actual results to differ materially from the results contemplated by the forward-looking statements contained in this Annual Report. Investors should carefully consider all relevant risks before investing in our common stock.

Industry Risks

Uncertainty in the macroeconomic environment, and its potential impact on the semiconductor and electronics industries, may negatively affect our business, operating results and financial condition.

Uncertainty in the macroeconomic environment, including the effects of, among other things, sustained global inflationary pressures and elevated interest rates, potential economic slowdowns or recessions, supply chain disruptions, geopolitical pressures, fluctuations in foreign exchange rates and associated global economic conditions, have resulted in volatility in credit, equity and foreign currency markets. This uncertain macroeconomic environment could lead some of our customers to postpone their decision-making, decrease their spending and/or delay their payments to us. Such caution by customers could, among other things, limit our ability to maintain or increase our sales or recognize revenue from committed contracts.

If these macroeconomic uncertainties persist and economic conditions continue to deteriorate, then the semiconductor and electronics industries could fail to grow. Additionally, uncertain macroeconomic conditions could also have the effect of increasing other risks and uncertainties facing our business, which could have a material adverse effect on our operating results and financial condition. Such risks that may be heightened by uncertain macroeconomic conditions include China's stated policy of becoming a global leader in the semiconductor industry, which may lead to increased competition or further disruption of international trade relationships, including, but not limited to, additional government trade restrictions. For more on risks related to government export and import restrictions, see "*We are subject to governmental export and import requirements that could subject us to liability and restrict our ability to sell our products and services, which could impair our ability to compete in international markets.*"

Adverse economic conditions affect demand for devices that our products help create, such as the ICs incorporated in personal computers, smartphones, automobiles, servers and more. Longer-term reduced demand for these or other products could result in reduced demand for design solutions and significant decreases in our average selling prices and product sales over time. Future economic downturns could also adversely affect our business, operating results and financial condition. In addition, if our customers or distributors build elevated inventory levels, we could experience a decrease in demand for our products. If any of these events or disruptions were to occur, the demand for our products and services could be adversely affected along with our business, operating results and financial condition. Additionally, due to our business model, the negative impact of these events or disruptions may not be immediately realized.

Further economic uncertainty could also adversely affect the banking and financial services industry and result in bank failures or credit downgrades of the banks we rely on for foreign currency forward contracts, credit and banking transactions, and deposit services, or cause them to default on their obligations. Additionally, the banking and financial services industries are subject to complex laws and are heavily regulated. There is uncertainty regarding how proposed, contemplated or future changes to the laws, policies and regulations governing the banking and financial services industry could affect our business. A deterioration of conditions in worldwide credit markets could limit our ability to obtain external financing to fund our operations, capital expenditures or pending acquisitions, such as the Ansys Merger. In addition, difficult economic conditions may also result in a higher rate of losses on our accounts receivable due to credit defaults. Any of the foregoing could cause adverse effects on our business, operating results and financial condition, and could cause our stock price to decline.

The growth of our business depends primarily on the semiconductor and electronics industries.

The growth of the EDA industry as a whole and our sales in our Design Automation and Design IP segments are primarily dependent on the semiconductor and electronics industries. A substantial portion of our business and revenue depends upon the commencement of new design projects by semiconductor manufacturers, systems companies and their customers. The increasing complexity of designs of SoCs, ICs, electronic systems and customers' concerns about managing costs have previously led to, and in the future could lead to, a decrease in design starts and design activity in general. For example, in response to this increasing complexity, some customers have chosen to focus on one discrete phase of the design process or opt for less advanced, but less risky, manufacturing processes that may not require the most advanced EDA products. If growth in the semiconductor and electronics industries slows or stalls, including, among other things, due to sustained global inflationary pressures and elevated interest rates, a continued or worsening global supply chain disruption, geopolitical pressures or economic slowdowns or recessions then demand for our products and services could decrease and our business, operating results and financial condition could be adversely affected. Additionally, as the EDA industry has matured, stronger competition has emerged from companies better able to compete as sole source vendors. This increased competition could cause our revenue growth rate to decline and exert downward pressure on our operating margins, which would have an adverse effect on our business and financial condition.

Furthermore, the semiconductor and electronics industries have become increasingly complex and interconnected ecosystems. Many of our customers outsource the manufacturing of their semiconductor designs to foundries. Our customers also frequently incorporate third-party IP, whether provided by us or other vendors, into their designs to improve the efficiency of their design process. We work closely with major foundries to ensure that our EDA, IP and manufacturing solutions are compatible with their manufacturing processes. Similarly, we work closely with other major providers of semiconductor IP, particularly microprocessor IP, to optimize our EDA tools for use with their IP designs and to ensure that their IP and our own IP products work effectively together, as we may each provide for the design of separate components on the same chip. If we fail to optimize our EDA and IP solutions for use with major foundries' manufacturing processes or major IP providers' products, or if our access to such foundry processes or third-party IP products is hampered, then our solutions may become less desirable to our customers, resulting in an adverse effect on our business and financial condition.

We operate in highly competitive industries, and if we do not continue to meet our customers' demand for innovative technology at lower costs, our products may not be competitive or may become obsolete.

In our Design Automation segment, we compete against EDA vendors that offer a variety of products and services, such as Cadence Design Systems, Inc. and Siemens EDA. We also compete with other EDA vendors, including new entrants to the marketplace, that offer products focused on one or more discrete phases of the IC design process. Moreover, some of our customers internally develop design tools and capabilities that compete with our products. In our Design IP segment, we compete against a growing number of silicon IP providers as well as our customers' internally developed IP.

The industries in which we operate are highly competitive, with new competitors entering these markets both domestically and internationally. For example, China has implemented national policies favoring Chinese companies and has formed government-backed investment funds as it seeks to build independent EDA capabilities and compete internationally in the semiconductor industry. The demand for our products and services is dynamic and depends on a number of factors, including, among other things, demand for our customers' products, design starts and our customers' budgetary constraints. Technology in these industries evolves rapidly and is characterized by frequent product introductions and improvements as well as changes in industry standards and customer requirements. For example, the adoption of cloud computing and AI technologies may bring new demands and also challenges in terms of disruption to both our business models and existing technology offerings. Our efforts in

developing such new technology solutions, including, for example, our current efforts in creating cloud computing and AI solutions, may not succeed. Semiconductor device functionality requirements continually increase while feature widths decrease, which substantially increases the complexity, cost and risk of chip design and manufacturing. At the same time, our customers and potential customers continue to demand a lower total cost of design, which can lead to the consolidation of their purchases from one vendor. In order to succeed in this environment, we must successfully meet our customers' technology requirements and increase the value of our products, while also striving to reduce their overall costs and our own operating costs.

We compete principally on the basis of technology, product quality and features, license or usage terms, post-contract customer support, interoperability among products, and price and payment terms. Specifically, we believe the following competitive factors affect our success:

- Our ability to anticipate and lead critical development cycles and technological shifts, innovate rapidly and efficiently, improve our existing software and hardware products, and successfully develop or acquire such new products;
- Our ability to offer products that provide both a high level of integration into a comprehensive platform and a high level of individual product performance;
- Our ability to enhance the value of our offerings through more favorable terms;
- Our ability to manage an efficient supply chain to ensure hardware product availability;
- Our ability to compete on the basis of payment terms; and
- Our ability to provide engineering and design consulting for our products.

If we fail to successfully manage any of these competitive factors, fail to successfully balance the conflicting demands for innovative technology and lower overall costs, or fail to address new competitive forces, our business, operating results and financial condition may be adversely affected.

We are subject to governmental export and import requirements that could subject us to liability and restrict our ability to sell our products and services, which could impair our ability to compete in international markets.

We are subject to export controls, laws and regulations that restrict selling, shipping or transmitting certain of our products and services and transferring certain of our technology outside the United States. These requirements also restrict domestic release of software and technology to certain foreign nationals. In addition, we are subject to customs and other import requirements that regulate imports that may be important for our business.

Any failure to comply with the U.S. Export Administration Regulations or other U.S. or non-U.S. export requirements (collectively, the Export Regulations) could subject us to substantial civil and criminal penalties, including fines and the possible loss of the ability to engage in exporting and other international transactions. Due to the nature of our business and technology, governmental agencies from time to time review certain transactions for compliance with applicable Export Regulations. For example, we have received administrative subpoenas from the U.S. Bureau of Industry and Security (the BIS) requesting production of information and documentation relating to transactions with certain Chinese entities.

We believe that the Export Regulations do not materially impact our business at this time, but we cannot predict the impact that additional regulatory changes may have on our business in the future. The United States has published significant changes to the Export Regulations with respect to China and Russia, and we anticipate additional changes to the Export Regulations in the future. For example, the United States government has implemented controls on advanced computing ICs, computer commodities that contain such ICs, and certain semiconductor manufacturing items, as well as controls on transactions involving items for supercomputer and semiconductor manufacturing end-users. These controls expand the scope of foreign-produced items subject to license requirements for certain entities on the U.S. government's Entity List. Future changes to the Export Regulations, including changes in the enforcement and scope of such regulations, may create delays in the introduction of our products or services in international markets or could prevent our customers with international operations from deploying our products or services globally. In some cases, such changes could prevent the export or import of our products.

Consolidation among our customers and within the industries in which we operate, as well as our dependence on a relatively small number of large customers, may negatively impact our operating results.

A number of business combinations and strategic partnerships among our customers in the semiconductor and electronics industries have occurred over the last several years, and more could occur in the future. Consolidation among our customers could lead to fewer customers or the loss of customers, increased customer bargaining power or reduced customer spending on products and services. Further, we depend on a relatively small number of large customers, and on such customers continuing to renew licenses and purchase additional products from us, for a large portion of our revenues. Consolidation among our customers, particularly our large customers, could also reduce demand for our products and services if customers streamline research and development or operations, or reduce or delay purchasing decisions. Our customers operate in highly competitive industries due to, among other factors, continued pressure from current and new competitors and technological change in their industries. Failure by our customers to successfully manage these competitive factors could adversely affect their business, operating results and financial condition, which could result in reduced spending on our products or services. Reduced customer spending or the loss of customers, particularly our large customers, could adversely affect our business, operating results and financial condition.

In addition, we and our competitors may acquire businesses and technologies to complement and expand our respective product offerings. Consolidated competitors could have considerable financial resources and channel influence as well as broad geographic reach, which may enable them to be more competitive in, among other things, product differentiation, breadth of technology portfolio, pricing, marketing, services or support. Such consolidations or acquisitions could negatively impact our business, operating results and financial condition.

Business Operations Risks

The global nature of our operations exposes us to increased risks and compliance obligations.

We derive roughly half of our revenue from sales outside the United States, and we expect our orders and revenue to continue to depend on sales to customers outside the U.S. We have also continually expanded our non-U.S. operations. This strategy requires us to recruit and retain qualified technical and managerial employees, manage multiple remote locations performing complex software development projects, and ensure intellectual property protection outside of the U.S. Our international operations and sales subject us to a number of increased risks, including, among others:

- Economic slowdowns, recessions or uncertainty in financial markets, including, among other things, the impact of sustained global inflationary pressures and elevated interest rates;
- Uncertain economic, legal and political conditions in China, Europe, the Middle East and other regions where we do business, including, for example, changes in China-Taiwan relations, regional or global military conflicts, and related sanctions and financial penalties imposed on participants in such conflicts;
- Government trade restrictions, including tariffs, export controls or other trade barriers, and changes to existing trade arrangements, including the unknown impact of current and future U.S. and Chinese trade regulations;
- Ineffective or weaker legal protection of intellectual property rights;
- Difficulties in adapting to cultural differences in the conduct of business, which may include business practices in which we are prohibited from engaging by the Foreign Corrupt Practices Act or other anti-corruption laws; and
- Financial risks such as longer payment cycles, changes in currency exchange rates and difficulty in collecting accounts receivable.

Furthermore, if any of the foreign economies in which we do business deteriorate or if we fail to effectively manage our global operations, our business and operating results will be harmed. There is inherent risk, based on the complex relationships between certain Asian countries such as China, where we derive a growing percentage of our revenue, and the United States, that political, diplomatic or military events could result in trade disruptions, including tariffs, trade embargoes, export restrictions and other trade barriers. A significant trade disruption, export restriction, or the establishment or increase of any trade barrier in any area where we do business could reduce customer demand and cause customers to search for substitute products and services, make our products and services more expensive or unavailable for customers, increase the cost of our products and services, have a negative impact on customer confidence and spending, make our products less competitive, or otherwise have an adverse impact on our backlog, future revenue and profits and our customers' and suppliers' business, operating results and financial

condition. For example and as described above, the ongoing geopolitical and economic uncertainty between the U.S. and China, the unknown impact of current and future U.S. and Chinese trade regulations, and other geopolitical risks with respect to China and Taiwan may cause disruptions in the markets and industries we serve and our supply chain, decreased demand from customers for products using our solutions or other disruptions, which could, directly or indirectly, materially harm our business, operating results and financial condition. For more on risks related to government export and import restrictions see *“We are subject to governmental export and import requirements that could subject us to liability and restrict our ability to sell our products and services, which could impair our ability to compete in international markets.”*

In response to the U.S. adopting tariffs and trade barriers or taking other actions, other countries may also adopt tariffs and trade barriers that could limit our ability to offer our products and services. Current and potential customers who are concerned or affected by such tariffs or restrictions may respond by developing their own products or replacing our solutions, which would have an adverse effect on our business. In addition, government or customer efforts, attitudes, laws or policies regarding technology independence may lead to non-U.S. customers favoring their domestic technology solutions that could compete with or replace our products, which would also have an adverse effect on our business.

In addition to tariffs and other trade barriers, our global operations are subject to numerous U.S. and foreign laws and regulations such as those related to anti-corruption, tax, corporate governance, imports and exports, financial and other disclosures, privacy and labor relations. These laws and regulations are complex and may have differing or conflicting legal standards, making compliance difficult and costly. In addition, there is uncertainty regarding how proposed, contemplated or future changes to these complex laws and regulations could affect our business. We may incur substantial expense in complying with the new obligations to be imposed by these laws and regulations, and we may be required to make significant changes in our business operations, all of which may adversely affect our revenues and our business overall. If we violate these laws and regulations, we could be subject to fines, penalties or criminal sanctions, and may be prohibited from conducting business in one or more countries. Any violation individually or in the aggregate could have a material adverse effect on our operations and financial condition.

Our financial results are also affected by fluctuations in foreign currency exchange rates. A weakening U.S. dollar relative to other currencies increases expenses of our foreign subsidiaries when they are translated into U.S. dollars in our consolidated statements of income. Likewise, a strengthening U.S. dollar relative to other currencies, including the renminbi or Yen, reduces revenue of our foreign subsidiaries upon translation and consolidation. Exchange rates are subject to significant and rapid fluctuations due to a number of factors, including interest rate changes and political and economic uncertainty. Therefore, we cannot predict the prospective impact of exchange rate fluctuations. We may be unable to hedge all of our foreign currency risk, which could have a negative impact on our operating results.

Our operating results may fluctuate in the future, which may adversely affect our stock price.

Our operating results are subject to quarterly and annual fluctuations, which may adversely affect our stock price. Our historical results should not be viewed as indicative of our future performance due to these periodic fluctuations.

Many factors have in the past and may in the future cause our backlog, revenue or earnings to fluctuate, including, among other things:

- Changes in demand for our products and services—especially products, such as hardware, generating upfront revenue—due to fluctuations in demand for our customers’ products and due to constraints in our customers’ budgets for research and development as well as EDA and IP products and services;
- Changes in demand for our products due to customers reducing their expenditures, which may be a result of customer cost-cutting measures or insolvency or bankruptcy, sustained global inflationary pressures and elevated interest rates or other reasons;
- Product competition in the EDA, IP or semiconductor industries, which can change rapidly due to industry or customer consolidation and technological innovation;
- Our ability to innovate and introduce new products and services or effectively integrate products and technologies that we acquire;
- Failures or delays in completing sales due to our lengthy sales cycle, which often includes a substantial customer evaluation and approval process because of the complexity of our products and services;
- Our ability to implement effective cost control measures;

- Our dependence on a relatively small number of large customers, and on such customers continuing to renew licenses and purchase additional products from us, for a large portion of our revenue;
- Changes to the amount, composition and valuation of, and any impairments to or write-offs of, our assets or strategic investments;
- Changes in the mix of our products sold, as increased sales of our products with lower gross margins, such as our hardware products, may reduce our overall margins;
- Expenses related to our acquisition and integration of businesses and technologies, including our expenses related to the Ansys Merger;
- Changes in tax rules, as well as changes to our effective tax rate, including the tax effects of infrequent or unusual transactions and tax audit settlements;
- Delays, increased costs or quality issues resulting from our reliance on third parties to manufacture our hardware products, which includes a sole supplier for certain hardware components;
- Natural variability in the timing of IP drawdowns, which can be difficult to predict;
- General economic and political conditions that affect the semiconductor and electronics industries, such as disruptions to international trade relationships, including tariffs, changes in Export Regulations, or other trade barriers affecting our or our suppliers' products; and
- Changes in accounting standards, which may impact the way we recognize our revenue and costs and impact our earnings.

The timing of revenue recognition may also cause our revenue and earnings to fluctuate. The timing of revenue recognition is affected by factors including:

- Cancellations or changes in levels of orders or the mix between upfront products revenue and time-based products revenue;
- Delay of one or more orders for a particular period, particularly orders generating upfront products revenue, such as hardware;
- Delay in the completion of professional services projects that require significant modification or customization and are accounted for using the percentage of completion method;
- Delay in the completion and delivery of IP products in development as to which customers have paid for early access;
- Customer contract amendments or renewals that provide discounts or defer revenue to later periods; and
- The levels of our hardware and IP revenues, which are generally recognized upfront and are primarily dependent upon our ability to provide the latest technology and meet customer requirements.

These factors, or any other factors or risks discussed herein, could negatively impact our backlog, revenue or earnings and cause our stock price to decline. Additionally, our results may fail to meet or exceed the expectations of securities analysts and investors, or such analysts may change their recommendation regarding our stock, which could cause our stock price to decline. Our stock price has been, and may continue to be, volatile, which may make it more difficult for our stockholders to sell their shares at a time or a price that is favorable to them.

We may not be able to realize the potential financial or strategic benefits of the transactions we complete, or find suitable target businesses and technology to acquire.

Acquisitions and strategic investments are an important part of our growth strategy. We have completed a significant number of acquisitions in recent years and are currently anticipating the closing of the Ansys Merger in the first half of calendar year 2025. We expect to make additional acquisitions and strategic investments in the future, but we may not find suitable acquisition or investment targets, or we may not be able to consummate desired acquisitions or investments due to, among other things, financial constraints, unfavorable credit markets, commercially unacceptable terms, failure to obtain regulatory approvals, competitive bid dynamics or other risks, which could harm our operating results.

Any acquisitions and strategic investments we may undertake, including the Ansys Merger, are difficult, time-consuming, and pose a number of risks, including, but not limited to:

- Potential negative impact on our net income resulting from acquisition or investment-related costs or on our earnings per share;
- Failure of acquired products to achieve projected sales;
- Problems in integrating the acquired products with our products;

- Difficulties entering into new markets in which we are inexperienced or our competitors have stronger positions;
- Potential downward pressure on operating margins due to lower operating margins of acquired businesses, increased headcount costs, and other expenses associated with adding and supporting new products;
- Difficulties in retaining and integrating key employees;
- Substantial reductions of our cash resources and/or the incurrence of debt, which may be at higher than anticipated interest rates;
- Failure to realize expected synergies or cost savings;
- Difficulties in integrating or expanding sales, marketing and distribution functions and administrative systems, including IT and human resources systems;
- Dilution of our current stockholders through the issuance of common stock as a part of transaction consideration;
- Difficulties in negotiating, governing and realizing value from strategic investments;
- Assumption of unknown liabilities, including tax, litigation, cybersecurity and commercial-related risks, and the related expenses and diversion of resources;
- Incurrence of costs and use of additional resources to remedy issues identified prior to or after an acquisition;
- Disruption of ongoing business operations, including diversion of management's attention and uncertainty for employees and customers, particularly during the post-acquisition integration process;
- Potential negative impacts on our relationships with customers, distributors and business partners;
- Exposure to new operational risks, regulations and business customs to the extent acquired businesses are located in regions where we are not currently conducting business;
- The need to implement controls, processes and policies appropriate for a public company at acquired companies that may have previously lacked such controls, processes and policies in areas such as cybersecurity, IT, privacy and more; and
- Requirements imposed by government regulators in connection with their review of an acquisition, including required divestitures or restrictions on the conduct of our business or the acquired business.

In addition, current and future changes to the U.S. and foreign regulatory approval processes and requirements related to acquisitions, including the Ansys Merger, may cause approvals to take longer than anticipated, not be forthcoming or contain burdensome conditions, which may prevent our planned transactions or jeopardize, delay or reduce the anticipated benefits of such transactions, and impede the execution of our business strategy.

We have also divested and may in the future divest certain product lines or technologies that no longer fit our long-term strategies. Divestitures may adversely impact our business, operating results and financial condition if we are unable to achieve the anticipated benefits or cost savings from such divestitures, or if we are unable to offset impacts from the loss of revenue associated with the divested product lines or technologies. For example, if we sell or otherwise dispose of certain product lines or assets, we may be unable to do so on satisfactory terms within our anticipated timeframe or at all. Further, whether such divestitures are ultimately consummated or not, their pendency could have a number of negative effects on our current business, including disrupting our regular operations, diverting the attention of our workforce and management team and increasing undesired workforce turnover. It could also disrupt existing business relationships, make it harder to develop new business relationships, or otherwise negatively impact the way that we operate our business.

If we do not manage the foregoing risks, the transactions that we complete or are unable to complete, including the Ansys Merger and the Optical Solutions Divestiture (as defined below), may have an adverse effect on our business, operating results and financial condition.

Cybersecurity threats or other security breaches could compromise sensitive information belonging to us or our customers and could harm our business and our reputation.

We store sensitive data, including intellectual property, our proprietary business information and that of our customers, and personal information, in our data centers, on our networks or on the cloud. In addition, our operations depend upon our information technology (IT) systems. We maintain a variety of information security policies, procedures, and controls to protect our business and proprietary information, prevent data loss and other security breaches and incidents, keep our IT systems operational and reduce the impact of a security breach or

incident, but these security measures cannot provide and have not provided absolute security. In the normal course of business, our systems are and have been the target of malicious cyberattack attempts and have been and may be subject to compromise due to employee error, malfeasance or other disruptions that have and could result in unauthorized disclosure or loss of sensitive information. To date, we have not identified material cyber security incidents or incurred any material expenses with any incidents. However, any breach or compromise could adversely impact our business and operations, expose us or our customers to litigation, investigations, loss of data, increase costs, or result in loss of customer confidence and damage to our reputation, any of which could adversely affect our business and our ability to sell our products and services.

Industry incidences of cyberattacks and other cybersecurity breaches have increased and are likely to continue to increase. We are using an increasing number of third-party software solutions, including cloud-based solutions, which increase potential threat vectors, such as by exploitation of misconfigurations or vulnerabilities. We also use third-party vendors that provide software or hardware, have access to our network, and/or store sensitive data, and these third parties are subject to their own cybersecurity threats. Our standard vendor terms and conditions include provisions requiring the use of appropriate security measures to prevent unauthorized use or disclosure of our data, as well as other safeguards. Despite these measures, there is no guarantee that a compromise of our third-party vendors will not occur and in turn result in a compromise of our own IT systems or data. In addition, if we select a vendor that uses cloud storage as part of their service or product offerings, or if we are selected as a vendor for our cloud-based solutions, our proprietary information could be misappropriated by third parties despite our attempts to validate the security of such services. Many employees continue to work remotely based on a hybrid work model, which magnifies the importance of maintaining the integrity of our remote access security measures. We also periodically acquire new businesses with less mature security programs, and it takes time to align their security practices to meet our information security policies, procedures and controls.

The techniques used to obtain unauthorized access to networks or to sabotage systems of companies such as ours change frequently, increasingly leverage technologies such as AI, and generally are not recognized until launched against a target. We may be unable to anticipate these emerging techniques, react in a timely manner, or implement adequate preventative measures, or we may not have sufficient logging available to fully investigate the incident. Our security measures vary in maturity across the business and may be and have been circumvented. For example, we have identified instances where employees have used non-approved applications for business purposes, some of which do not meet our security standards. In addition, we discovered unauthorized third-party access to our products and product license files hosted on our SolvNet Plus customer license and product delivery system in 2015. Any security breach of our own or a third-party vendor's systems could cause us to be non-compliant with applicable laws or regulations, subject us to legal claims or proceedings, disrupt our operations, damage our reputation, and cause a loss of confidence in our products and services, any of which could adversely affect our business and our ability to sell our products and services.

Our software products and hosted solutions are also targeted by hackers and may be compromised by, among other things, phishing, exploits of our code or our system configurations, malicious code such as viruses and worms, distributed denial-of-service attacks, sophisticated attacks conducted or sponsored by nation-states, advanced persistent threat intrusions, ransomware and other malware. We leverage many security best practices throughout the software development lifecycle, but our security development practices vary in maturity across the business and may not be effective against all cybersecurity threats. Furthermore, due to geopolitical incidents, including regional military conflicts, state-supported and geopolitical-related cybersecurity incidents against companies such as ours may increase. Attacks on our products could potentially disrupt the proper functioning of our software, cause errors in the output of our customers' work, allow unauthorized access to our or our customers' proprietary information or cause other destructive outcomes.

If we fail to protect our proprietary technology, our business will be harmed.

Our success depends in part upon protecting our proprietary technology. Our efforts to protect our technology may be costly and unsuccessful. We rely on agreements with customers, employees and other third parties as well as intellectual property laws worldwide to protect our proprietary technology. These agreements may be breached, and we may not have adequate remedies for any breach. Additionally, despite our measures to prevent piracy, other parties may attempt to illegally copy or use our products, which could result in lost revenue if their efforts are successful. Some foreign countries do not currently provide effective legal protection for intellectual property and our ability to prevent the unauthorized use of our products in those countries is therefore limited. Our trade secrets may also be stolen, otherwise become known, or be independently developed by competitors.

From time to time, we may need to commence litigation or other legal proceedings in order to assert claims of infringement of our intellectual property, defend our products from piracy, protect our trade secrets or know-how, or determine the enforceability, scope and validity of the propriety rights of others.

If we do not obtain or maintain appropriate patent, copyright or trade secret protection for any reason, or cannot fully defend our intellectual property rights in certain jurisdictions, our business and operating results would be harmed. In addition, intellectual property litigation is lengthy, expensive and uncertain. Legal fees related to such litigation will increase our operating expenses and may reduce our net income.

We may not be successful in our AI initiatives, which could adversely affect our business, operating results or financial condition.

We have incorporated, and are continuing to develop and deploy, AI into our products and the operations of our business. While these AI initiatives can present significant benefits, the AI landscape is rapidly evolving and may create risks and challenges for our business. If we fail to develop and timely offer products with AI features, if such products fail to meet our customers' demands, if these products fail to operate as expected, or if our competitors incorporate AI into their products more quickly or more successfully than we do, we may experience brand or reputational harm and lose our competitive position, our products may become obsolete, and our business, operating results or financial condition could be adversely affected.

While AI technology may drive future growth in our business, worldwide markets for AI-enabled products may not develop in the manner or time periods we anticipate, or at all. If domestic or global economies worsen, overall spending on the development of AI-related products may decrease, which would adversely impact demand for our products in these markets. Even if the demand for AI-enabled products develops in the manner or in the time periods we anticipate, if we do not have timely, competitively priced, market-accepted products available to meet our customers' needs to develop products for the AI markets, we may miss a significant opportunity and our business, operating results and financial condition could be materially and adversely affected. In addition, because the markets for AI-related products are still emerging, demand for these products may be unpredictable and may vary significantly from one period to another.

The technologies underlying AI and its uses are expected to be subject to new laws and regulations or new applications of existing laws and regulations, including in the areas of intellectual property, privacy, data protection and cybersecurity, among others. In addition, unfavorable developments with evolving laws and regulations affecting AI-related products may limit global adoption, impede our strategy and negatively impact our long-term expectations in this area. For example, there is significant uncertainty in the U.S. courts as to how AI technologies affect IP ownership, including copyright protections, and the use of AI-related technology in the development of our products or implementation of AI features in our products could expose us or our customers to claims of copyright infringement or misappropriation. We may not be able to anticipate how to respond to or comply with these rapidly evolving frameworks, and we may need to expend resources to adjust our offerings in certain jurisdictions if the legal frameworks are inconsistent across jurisdictions. The cost of complying with such frameworks could be significant and may increase our operating expenses. Because AI technology is highly complex and rapidly developing, it is not possible to predict all legal, operational or technological risks that may arise relating to the use of AI.

If we fail to timely recruit and/or retain senior management and key employees globally, our business may be harmed.

We depend in large part upon the services of our senior management team and key employees to drive our future success, and certain of these personnel depart our company from time to time, with the frequency and number of such departures varying widely. For example, we have in the past experienced significant changes to our executive leadership team due to planned succession and other departures. The departure of key employees could result in significant disruptions to our operations, including, among other things, adversely affecting the timeliness of our product releases, the successful implementation and completion of our initiatives, the adequacy of our internal control over financial reporting, and our business, operating results and financial condition.

To be successful, we must also attract senior management and key employees who join us organically and through acquisitions, such as the Ansys Merger. There are a limited number of qualified engineers. Competition for these individuals and other qualified employees is intense and has increased globally, including in major markets such as Asia. Our employees are often recruited aggressively by our competitors and our customers worldwide. Any failure to recruit and/or retain senior management and key employees could harm our business, operating results and

financial condition. Additionally, efforts to recruit such employees could be costly and negatively impact our operating expenses.

We issue equity awards from employee equity plans as a key component of our overall compensation. We face pressure to limit the use of such equity-based compensation due to dilutive effects on stockholders. If we are unable to offer attractive compensation packages in the future, it could limit our ability to attract and retain senior management and key employees.

We may pursue new product and technology initiatives or expand into adjacent markets, and if we fail to successfully carry out these initiatives, we could be adversely impacted.

As part of the evolution of our business, we have made substantial investments to develop new products and enhancements to existing products through our acquisitions and research and development efforts. If we are unable to anticipate technological changes in our industry by introducing new or enhanced products in a timely and cost-effective manner, or if we fail to introduce products that meet market demand, we may lose our competitive position, our products may become obsolete, and our business, operating results or financial condition could be adversely affected.

Additionally, we have in the past and may in the future invest in efforts to expand into adjacent markets. These efforts may not be successful due to a variety of factors, including, but not limited to, our ability to:

- Attract a new customer base, including in industries in which we have less experience;
- Successfully develop new sales and marketing strategies to meet customer requirements;
- Accurately predict, prepare for and promptly respond to technological developments in new fields;
- Compete with new and existing competitors, many of which may have more financial resources, industry experience, brand recognition, relevant intellectual property rights or established customer relationships than we do;
- Balance our investment in adjacent markets with investment in our existing products and services; and
- Attract and retain employees with expertise in new fields.

Difficulties in any of our new product development efforts or our efforts to enter adjacent markets, including as a result of delays or disruptions, or export control restrictions, could adversely affect our business, operating results and financial condition.

We may have to invest more resources in research and development than anticipated, which could increase our operating expenses and negatively affect our operating results.

We devote substantial resources to research and development. We may be required to invest significantly greater resources than anticipated due to certain competitive factors, including, among others, the emergence of new competitors, technological advances in the semiconductor industry or by competitors, our acquisitions or our entry into new markets. If we are required to invest significantly greater resources than anticipated without a corresponding increase in revenue, our operating results could decline. If customers reduce or slow the need to upgrade or enhance their product offerings, our revenue and operating results may be adversely affected. Additionally, our periodic research and development expenses may be independent of our level of revenue, which could negatively impact our financial results. New products may not adequately address the changing needs of the marketplace. New software products may contain undetected errors, defects or vulnerabilities. The occurrence of any defects or errors in our products could result in lost or delayed market acceptance and sales of our products, delays in payment by customers, loss of customers or market share, product returns, damage to our reputation, diversion of our resources, increased service and warranty expenses or financial concessions, increased insurance costs and potential liability for damages. Finally, there can be no guarantee that our research and development investments will result in products that create additional revenue.

Product errors or defects could expose us to liability and harm our reputation and we could lose market share.

Software products frequently contain errors or defects, especially when first introduced, when new versions are released, or when integrated with technologies developed by acquired companies. Product errors, including those resulting from third-party suppliers, could affect the performance or interoperability of our products, could delay the development or release of new products or new versions of products and could adversely affect market acceptance or perception of our products. In addition, any allegations of manufacturability issues resulting from use of our IP

products could, even if untrue, adversely affect our reputation and our customers' willingness to license IP products from us. Any such errors or delays in releasing new products or new versions of products or allegations of unsatisfactory performance could cause us to lose customers, increase our service costs, subject us to liability for damages and divert our resources from other tasks, any one of which could materially and adversely affect our business, operating results and financial condition.

Our hardware products, which primarily consist of prototyping and emulation systems, subject us to distinct risks.

The growth in sales of our hardware products subjects us to risks, including, but not limited to:

- Increased dependence on a sole supplier for certain hardware components, which may reduce our control over product quality and pricing and may lead to delays in production and delivery of our hardware products, should our supplier fail to deliver sufficient quantities of acceptable components in a timely fashion;
- Increasingly variable revenue and less predictable revenue forecasts, due to fluctuations in hardware revenue, which is recognized upfront upon shipment, as opposed to most sales of software products for which revenue is recognized over time;
- Potential reductions in overall margins, as the gross margin for our hardware products, is typically lower than those of our software products;
- Longer sales cycles, which create risks of insufficient, excess or obsolete inventory and variations in inventory valuation, which can adversely affect our business, operating results and financial condition;
- Decreases or delays in customer purchases in favor of next-generation releases or competitive products, which may lead to excess or obsolete inventory or require us to discount our older hardware products;
- Longer warranty periods than those of our software products, which may require us to replace hardware components under warranty, thus increasing our costs; and
- Potential impacts on our supply chain, including the effects of sustained global inflationary pressures and elevated interest rates, or global semiconductor shortages.

From time to time, we are subject to claims that our products infringe on third-party intellectual property rights.

We are from time to time subject to claims alleging our infringement of third-party intellectual property rights, including patent rights. Under our customer agreements and other license agreements, we agree in many cases to indemnify our customers if our products are alleged to infringe on a third party's intellectual property rights. Infringement claims have in the past and could in the future result in costly and time-consuming litigation, require us to enter into royalty arrangements, subject us to damages or injunctions restricting our sale of products, invalidate a patent or family of patents, require us to refund license fees to our customers or to forgo future payments, or require us to redesign certain of our products, any one of which could harm our business and operating results.

We may not be able to continue to obtain licenses to third-party software and intellectual property on reasonable terms or at all, which may disrupt our business and harm our financial results.

We license third-party software and other intellectual property for use in product research and development and, in several instances, for inclusion in our products. We also license third-party software, including the software of our competitors, to test the interoperability of our products with other industry products and in connection with our professional services. These licenses may need to be renegotiated or renewed from time to time, or we may need to obtain new licenses in the future. Third parties may stop adequately supporting or maintaining their technology, or they or their technology may be acquired by our competitors. If we are unable to obtain licenses to these third-party software and intellectual property on reasonable terms or at all, we may not be able to sell the affected products, our customers' use of the products may be interrupted, or our product development processes and professional services offerings may be disrupted, which could in turn harm our financial results, our customers, and our reputation.

The inclusion of third-party intellectual property in our products can also subject us and our customers to infringement claims. We may not be able to sufficiently limit our potential liability contractually. Regardless of outcome, infringement claims may require us to use significant resources and may divert management's attention from the operation of our business.

Some of our products and technology, including those we acquire, have in the past and may in the future include software licensed under open source licenses. Some open source licenses could require us, under certain circumstances, to make available or grant licenses to any modifications or derivative works we create based on the open source software. The risks associated with open source usage may not be eliminated despite our best efforts and may, if not properly addressed, result in unanticipated obligations that harm our business.

Liquidity requirements in our U.S. operations may require us to raise cash in uncertain capital markets, which could negatively affect our financial condition.

We expect that the pending Ansys Merger is likely to result in a material increase in our debt and liquidity needs that will impact our capital needs. We anticipate that the funds needed to fund the cash portion of the Ansys Merger consideration and to pay related transaction fees and expenses will be derived from a combination of available cash on hand and third-party debt financing. As of October 31, 2024, approximately 24% of our worldwide cash and cash equivalents balance is held by our international subsidiaries. We intend to fund the Ansys Merger, pay related transaction fees and expenses and meet our U.S. cash spending needs primarily through our existing U.S. cash balances, ongoing U.S. cash flows and third-party debt financing, which will include a combination of available credit under our Term Loan Agreement, Revolving Credit Agreement, the Bridge Commitment and/or one or more issuances of senior unsecured notes. Our ability to obtain any such new debt financing will depend on, among other factors, prevailing market conditions and other factors beyond our control. We may be required to incur debt at higher than anticipated interest rates, access other funding sources or repatriate cash, any of which could negatively affect our operating results, capital structure or the market price of our common stock.

Risks Related to the Ansys Merger

We may fail to complete the Ansys Merger or may not complete it on the terms described herein or in our other filings with the SEC.

It is currently anticipated that we will complete the Ansys Merger in the first half of calendar year 2025. The Ansys Merger is subject to the satisfaction or waiver of customary closing conditions, including, among other things, the clearance of the Ansys Merger under certain antitrust and foreign investment regimes, and the continued effectiveness of the registration statement on Form S-4 (File No. 333-277912) filed by us on March 14, 2024 and declared effective by the SEC on April 17, 2024. As a result, the possible timing and likelihood of completion are uncertain and, accordingly, there can be no assurance that the Ansys Merger will be completed on the anticipated schedule, if at all.

Any delay in completing the acquisition could cause us not to realize some or all of the anticipated benefits when expected, if at all. If the Ansys Merger is not completed, we could be subject to a number of risks that may adversely affect our business and operating results, including, among other things:

- our stock price could decline to the extent it reflects an assumption that we will complete the Ansys Merger;
- our incurrence of significant acquisition costs that we would be unable to recoup;
- under certain specified circumstances we could be required to pay Ansys a termination fee of \$1.5 billion; and
- negative publicity and other negative impacts resulting from failure to complete the Ansys Merger.

The Ansys Merger is subject to the receipt of governmental approvals that may impose conditions that could have an adverse effect on us or, if not obtained, could prevent completion of the Ansys Merger.

Completion of the Ansys Merger is conditioned upon the receipt of governmental approvals, including certain antitrust and foreign investment approvals. There can be no assurance that these approvals will be obtained and that the other conditions to completing the Ansys Merger will be satisfied. In addition, the governmental authorities from which these approvals are required may impose conditions on the completion of the Ansys Merger or require changes to the terms of the Ansys Merger or agreements to be entered into in connection with the Ansys Merger. For example, following the determination that the sale of our Optical Solutions Group is a necessary step towards obtaining governmental approval of and successfully closing the Ansys Merger, we recently signed a definitive agreement for the sale of our Optical Solutions Group to Keysight Technologies, Inc. (the Optical Solutions Divestiture). For risks relating to the divestiture of certain product lines or technologies, see “*We may not be able to realize the potential financial or strategic benefits of the transactions we complete, or find suitable target businesses and technology to acquire.*” Such conditions or changes and the process of obtaining these approvals, or delay in the consummation of any necessary divestitures or other sales transactions, could have the effect of delaying or

impeding completion of the Ansys Merger or of imposing additional costs or limitations on us following completion of the Ansys Merger, any of which might have an adverse effect on our business, operating results and financial condition.

Failure to realize the benefits expected from the Ansys Merger could adversely affect our business, operating results and financial condition.

The anticipated benefits we expect from the Ansys Merger are based on projections and assumptions about our combined business with Ansys, which may not materialize as expected or which may prove to be inaccurate. Our business, operating results and financial condition could be adversely affected if we are unable to realize the anticipated benefits from the Ansys Merger on a timely basis, if at all, including, among other things, realizing the anticipated cost and revenue synergies from the Ansys Merger in the anticipated amounts or within the anticipated timeframes or cost expectations, if at all. Achieving the benefits of the Ansys Merger will depend, in part, on our ability to integrate the business and operations of Ansys successfully and efficiently with our business. The challenges involved in this integration, which may be complex and time-consuming, include, among others, the following:

- avoiding business disruptions, preserving customer and other important relationships of Ansys and attracting new business and operational relationships;
- coordinating and integrating independent research and development and engineering teams across technologies and product platforms to enhance product development while reducing costs;
- integrating financial forecasting and controls, procedures and reporting cycles;
- consolidating and integrating corporate, IT, cybersecurity, finance and administrative infrastructures;
- coordinating branding, sales and marketing efforts to effectively position the combined company's capabilities and the direction of product development;
- integrating Ansys' systems, operations and product lines;
- meeting obligations that we will have to counterparties of Ansys that arise as a result of the change in control of Ansys; and
- integrating employees and related HR systems and benefits, maintaining employee productivity and retaining key employees.

If we do not successfully manage these issues and the other challenges inherent in integrating an acquired business, then we may not achieve the anticipated benefits of the Ansys Merger on our anticipated timeframe, if at all, and our business, revenue, expenses, operating results, financial condition and stock price could be materially adversely affected. The successful completion of the Ansys Merger and the integration of the Ansys business has required and will continue to require significant management attention both before and after the completion of the Ansys Merger, and may divert the attention of management from our normal business operations.

As a result of the Ansys Merger, we anticipate that the scope and size of our operations and business will substantially change and will result in certain incremental risks to us, including increased competition. We may not realize the full expected benefits of the Ansys Merger.

We anticipate that the Ansys Merger will substantially expand the scope and size of our business by adding substantial assets and operations to our existing business. The anticipated future growth of our business will impose significant added responsibilities on management, including, among other things, the need to identify, recruit, train and integrate additional employees. Our senior management's attention may be diverted from the management of our business and its daily operations to the completion of the Ansys Merger and the integration of the assets acquired in the Ansys Merger. Further, the Ansys Merger could also create uncertainty for our or Ansys' employees and customers, particularly during the post-acquisition integration process. It could also disrupt existing business relationships, make it more difficult to develop new business relationships, or otherwise negatively impact the way that we operate our business.

We also anticipate that the Ansys Merger will result in increased competition. Ansys operates in a highly competitive industry, and is facing increasing competition for its products and services, in particular in simulation and analysis. Additionally, both Ansys and Synopsys compete with companies that increasingly provide integrated EDA and simulation and analysis offerings. These competitive pressures may result in decreased sales volumes, price reductions and/or increased operating costs, and could result in lower revenues, margins and net income for the combined company. These impacts could also result in our failure to realize expected synergies or cost savings as a result of the Ansys Merger. For more on risks relating to competition in the EDA industry and other industries, see

“The growth of our business depends primarily on the semiconductor and electronics industries” and “We operate in highly competitive industries, and if we do not continue to meet our customers’ demand for innovative technology at lower costs, our products may not be competitive or may become obsolete.”

Our ability to manage our business and growth will require us to continue to improve our operational, financial and management controls, reporting systems and procedures. We may also encounter risks, costs and expenses associated with any undisclosed or other unanticipated liabilities and use more cash and other financial resources on integration and implementation activities than we expect. We may not be able to integrate the Ansys business into our existing operations on our anticipated timelines or realize the full expected economic benefits of the Ansys Merger, which may have a material adverse effect on our business, operating results and financial condition.

In addition, the completion of the Ansys Merger may heighten the potential adverse effects on our business, operating results or financial condition described elsewhere in the Risk Factors in this Annual Report.

Our significant debt may limit our financial flexibility following the Ansys Merger.

We expect to incur a substantial amount of debt in connection with the Ansys Merger and have entered into the Bridge Commitment Letter and the Term Loan Agreement for the purpose of financing a portion of the cash consideration to be paid in the Ansys Merger and paying related fees and expenses in connection with the Ansys Merger and the other transactions contemplated by the Merger Agreement. We expect to use a portion of the proceeds from the facilities to repay Ansys’ existing credit facility substantially concurrently with the completion of the Ansys Merger.

Our ability to obtain any such new debt financing will depend on, among other factors, prevailing market conditions and other factors beyond our control. We cannot assure you that we will be able to obtain new debt financing on terms acceptable to us or at all, and any such failure could materially adversely affect our operations and financial condition. Our obligation to complete the Ansys Merger is not conditioned upon the receipt of any financing.

Following the Ansys Merger, the substantial indebtedness incurred in connection with the Ansys Merger could have adverse effects on our business, operating results and financial condition, including, among other things:

- increasing our vulnerability to changing economic, regulatory and industry conditions;
- limiting our ability to compete and our flexibility in planning for, or reacting to, changes in our business and the industry;
- placing us at a competitive disadvantage compared to our competitors with less indebtedness;
- increasing our interest expense and potentially requiring us to dedicate a substantial portion of our cash flow from operations to payments on our debt, thereby reducing the availability of cash to fund our business needs;
- limiting our ability to return equity through our stock repurchase program or pay dividends to our stockholders; and
- limiting our ability to borrow additional funds in the future to fund growth, acquisitions, working capital, capital expenditures or other purposes.

Our ability to make scheduled payments of the principal of, to pay interest on, or to refinance our indebtedness following the Ansys Merger will depend on, among other factors, our financial position and performance as well as prevailing market conditions and other factors beyond our control. Our combined business may not continue to generate cash flow from operations in the future sufficient to service our debt and make necessary capital expenditures and meet other liquidity needs. If we are unable to generate such cash flow, we may be required to adopt one or more alternatives, such as selling assets, restructuring debt or obtaining additional equity capital or debt refinancing on terms that may be onerous. We may not be able to engage in any of these activities or engage in these activities on desirable terms, which could result in a default on our debt obligations, which, if not cured or waived, could accelerate the repayment obligations under all of our outstanding debt, which could have a material adverse effect on our business, operating results or financial condition.

In addition, the level and quality of our earnings, operations, business and management, among other things, will impact the determination of our credit ratings by credit rating agencies. A decrease in the ratings assigned to us may negatively impact our access to the debt capital markets and increase our cost of borrowing. There can be no assurance that we will be able to obtain any future required financing on acceptable terms, if at all. In addition, there can be no assurance that we will be able to maintain the current credit worthiness or prospective credit rating of the combined company. Any actual or anticipated changes, or adverse conditions in the debt capital markets, could:

- adversely affect the trading price of, or market for, our debt securities;
- increase interest expense under our credit facilities;
- increase the cost of, and adversely affect our ability to refinance, our existing debt; and
- adversely affect our ability to raise additional debt.

The covenants contained in the agreements governing our indebtedness following the Ansys Merger may impose restrictions on us and certain of our subsidiaries that may affect our ability to operate our businesses.

The agreements that will govern our indebtedness following the Ansys Merger, including any indebtedness to be incurred pursuant to the Bridge Commitment Letter (or any indebtedness that may refinance or replace the Bridge Commitment as set forth in the Bridge Commitment Letter) and the Term Loan Agreement, will contain various affirmative and negative covenants. Such covenants may, subject to certain significant exceptions, restrict our ability and the ability of certain of our subsidiaries after the Ansys Merger to, among other things, engage in mergers, consolidations and acquisitions, grant liens and incur debt at subsidiaries. In addition, such agreements also contain financial covenants that will require us to maintain certain financial ratios. Our ability to comply with these provisions after the Ansys Merger may be affected by events beyond our control. Failure to comply with these covenants could result in an event of default, which, if not cured or waived, could accelerate repayment obligations under all of our outstanding debt, which could have a material adverse effect on our business, operating results or financial condition.

Legal and Regulatory Risks

Changes in tax laws and regulations or interpretations thereof, or any change in the application of existing laws and regulations may adversely affect our effective tax rates and financial results.

Our operations are subject to taxation in the U.S. and in multiple foreign jurisdictions. Tax laws in these jurisdictions are subject to change as new laws or regulations are passed or new interpretations are made available. Changes in tax law, regulations or interpretation could have a material adverse impact on our tax expense and our financial position and cash flows. For additional detail on developments in tax laws and regulations applicable to us, see Note 18. *Income Taxes* of the *Notes to Consolidated Financial Statements* in this Annual Report under the heading "Legislative Developments."

We have a wide range of statutory tax rates in the multiple jurisdictions in which we operate. Changes in our geographical earnings mix, including those resulting from our intercompany transfer pricing or from changes in the rules governing transfer pricing, could materially impact our effective tax rate. In addition, we maintain significant deferred tax assets related to certain tax credits and capitalized research and development expenditures. Our ability to use these deferred tax assets is dependent upon having sufficient future taxable income in the relevant jurisdiction. Changes to tax laws and regulations, and changes in our forecasts of future income could result in an adjustment to the deferred tax asset and a related charge to earnings that could materially affect our financial results.

Our income and non-income tax filings are subject to review or audit by the Internal Revenue Service and state, local and foreign taxing authorities. We exercise significant judgment in determining our worldwide provision for income taxes and, in the ordinary course of our business, there may be transactions and calculations where the ultimate tax determination is uncertain. We may also be liable for potential tax liabilities of businesses we acquire. The final determination in an audit may be materially different than the treatment reflected in our historical income tax provisions and accruals. An assessment of additional taxes could adversely affect tax expense and materially affect our financial results. For further discussion on our ongoing audits, see Note 18. *Income Taxes* of the *Notes to Consolidated Financial Statements* in this Annual Report under the heading "Non-U.S. Examinations."

Our business is subject to evolving corporate governance and public disclosure regulations and expectations that could expose us to numerous risks.

We are subject to changing rules and regulations promulgated by a number of governmental and self-regulatory organizations, including, among others, the SEC, the Nasdaq Stock Market, the Financial Accounting Standards Board, states and the international governing bodies such as the European Union. These rules and regulations continue to evolve in scope and complexity making compliance difficult and uncertain. Changing rules, regulations as well as customer, employee and stakeholder expectations have resulted in, and are likely to continue to result in, increased general and administrative expenses and increased management time and attention spent complying

with or meeting such regulations and expectations. For example, developing and acting on evolving ESG reporting standards, including the SEC's climate-related reporting requirements, California's climate-related disclosure laws, and the European Union's Corporate Sustainability Reporting Directive as well as customer requirements may be costly, difficult and time consuming. We may also communicate certain initiatives and goals regarding environmental matters, diversity, responsible sourcing, social investments and other ESG matters in our public disclosures. These initiatives and goals could be difficult and expensive to implement, the technologies needed to implement them may not be cost effective and may not advance at a sufficient pace, and ensuring the accuracy, adequacy, or completeness of the disclosure of our ESG initiatives can be costly, difficult and time consuming. Further, statements about our ESG initiatives and goals, and progress against those goals, may be based on standards for measuring progress that are still developing, internal controls and processes that continue to evolve, and assumptions that are subject to change. We could also face scrutiny from certain stakeholders for the scope or nature of such initiatives or goals, or for any revisions to these goals. If our ESG-related data, processes and reporting are incomplete or inaccurate, or if we fail to achieve progress with respect to our ESG goals on a timely basis, or at all, our business, financial performance and growth could be adversely affected.

We may be subject to litigation proceedings that could harm our business.

We may be subject to legal claims or regulatory matters involving stockholder, consumer, employment, customer, supplier, competition and other issues on a global basis. Litigation is subject to inherent uncertainties, and unfavorable rulings could occur. An unfavorable ruling could include monetary damages or, in cases for which injunctive relief is sought, an injunction prohibiting us from manufacturing or selling one or more products. If we were to receive an unfavorable ruling on a matter, our business and operating results could be materially harmed. Further information regarding certain of these matters is contained in Part I, Item 3, *Legal Proceedings* of this Annual Report.

General Risks

Catastrophic events and the effects of climate change, pandemics or other unexpected events may disrupt our business and harm our operating results.

Due to the global nature of our business, our operating results may be negatively impacted by catastrophic events and the effects of climate change, pandemics, such as the COVID-19 pandemic, or other unexpected events throughout the world. We rely on a global network of infrastructure applications, enterprise applications and technology systems for our development, marketing, operational, support and sales activities. A disruption or failure of these systems in the event of a major earthquake, fire, extreme temperatures, drought, flood, telecommunications failure, cybersecurity attack, terrorist attack, epidemic or pandemic, or other catastrophic or climate change-related events could cause system interruptions, delays in our product development and loss of critical data and could prevent us from fulfilling our customers' orders. In particular, our sales and infrastructure are vulnerable to regional or worldwide health conditions, including the effects of the outbreak of contagious diseases, such as the government-imposed restrictions that curtailed global economic activity and caused substantial volatility in global financial markets during the COVID-19 pandemic. Moreover, our corporate headquarters, a significant portion of our research and development activities, our data centers, and certain other critical business operations are located in California, near major earthquake faults and sites of recent wildfires, which may become more frequent, along with other extreme weather events, due to climate change. A catastrophic event or other extreme weather event that results in the destruction or disruption of our data centers or our critical business or IT systems would severely affect our ability to conduct normal business operations and, as a result, our operating results would be adversely affected.

Item 1B. *Unresolved Staff Comments*

None.

Item 1C. *Cybersecurity*

Cybersecurity Risk Management and Strategy

We recognize the importance of assessing, identifying, and managing material risks associated with cybersecurity threats, as such term is defined in Item 106(a) of Regulation S-K. These risks include, among other things, operational risks; intellectual property theft; fraud; extortion; harm to employees or customers; violation of privacy or security laws and other litigation and legal risk; and reputational risks.

We maintain a cybersecurity program and incident response plan to coordinate the activities we take to protect against, detect, respond to and remediate cybersecurity incidents, as such term is defined in Item 106(a) of Regulation S-K, as well as to comply with potentially applicable legal obligations and mitigate brand and reputational damage.

We have implemented cybersecurity processes, technologies, and controls to aid in our efforts to identify, assess, and manage material risks, as well as to test and improve our incident response plan. Our approach includes, among other things:

- Security and privacy reviews designed to identify risks from new features, software, suppliers and vendors;
- A vulnerability management program designed to identify software vulnerabilities;
- A variety of tools designed to monitor our networks, systems, and data for suspicious activity;
- An internal red team program that simulates cyber threats, enhancing our ability to fix vulnerabilities before they are exploited by threat actors;
- A threat intelligence program designed to model and research our adversaries;
- Products and services to structure, test, and assess the rigor of our software security practices;
- A variety of privacy, cybersecurity, and incident response trainings and simulations, including regular controlled penetration testing and cyber incident exercises to test the robustness of our data security protections and incident response readiness;
- For suppliers and service providers, pre-engagement risk-based diligence, contractual security and notification provisions, and ongoing monitoring as appropriate; and
- Maintaining cyber liability insurance that covers certain liabilities related to data breaches and related incidents.

Synopsys' cybersecurity program is designed to leverage multiple industry-recognized frameworks including the National Institute of Standards and Technology Cyber Security Framework (NIST CSF) and the ISO/IEC 27001 Information Security Management Framework, and are assessed regularly by our internal audit department. We track our NIST CSF implementation through periodic third-party maturity assessments that provide the basis for establishing performance goals for the coming period.

Our process for identifying and assessing material risks from cybersecurity threats operates alongside our broader overall risk assessment process. As part of this process, appropriate personnel will collaborate with subject matter specialists, as necessary, to gather insights for identifying and assessing material cybersecurity threat risks, their severity, and potential mitigations.

As part of the above approach and processes, we regularly engage with assessors, consultants, auditors, and other third-parties to help identify areas for continued focus, improvement and/or compliance.

Since 2015, we have not experienced any material cybersecurity incidents and the expenses we have incurred from cybersecurity incidents were immaterial. This includes penalties and settlements, of which there were none.

In our risk factors, we describe whether and how risks from identified cybersecurity threats, including as a result of any previous cybersecurity incidents, have materially affected or are reasonably likely to materially affect us,

including our business strategy, results of operations or financial condition. See our risk factor disclosures in Part I, Item 1A of this Annual Report.

Cybersecurity Governance

Information technology and data security, particularly cybersecurity, is a top area of focus for our Board of Directors (the Board), which considers these areas as essential for the success of our company and the broader technology industry in which we operate.

Our Board is actively involved in overseeing cybersecurity risk management. At least once a year, senior management, including our Chief Information Security Officer (CISO), presents to the Board on Synopsys' cybersecurity performance and risk profile. Further, senior management and our CISO present semiannually to our Corporate Governance and Nominating Committee (CGN Committee) on Synopsys' cybersecurity risk oversight activities and cybersecurity preparedness efforts. The CGN Committee of our Board, a majority of whom are individuals with a strong background in cybersecurity and related matters, meets with members of senior management to review our information technology and data security policies and practices, and to assess current and potential threats, cybersecurity incidents and related risks. Our CISO reports directly to our executive management team and advises Synopsys on cybersecurity risks and assesses the effectiveness of information technology and data security processes. The materials presented to our Board and CGN Committee include updates on our data security posture, results of third-party assessments, progress towards pre-determined risk-mitigation related goals, our incident response plan, and certain cybersecurity threat risks or incidents and developments, as well as the steps management has taken to respond to such risks. Members of the Board and the CGN Committee are also encouraged to regularly engage in ad hoc conversations with management on cybersecurity-related news events and to discuss any updates to our cybersecurity risk management and strategy programs. Material cybersecurity threat risks may also be considered during separate Board meeting discussions.

Our cybersecurity risk management and strategy processes, which are discussed in greater detail above, are led by our CISO. Our CISO has over 30 years of prior work experience in various roles involving managing information security, developing cybersecurity strategy and implementing effective information and cybersecurity programs. Our CISO holds a Bachelor's of Science in Information Technology and a Master of Business Administration, and is also a Certified Information Systems Security Professional. He oversees our cybersecurity program and chairs a cross-functional committee that spans information security, IT, product security, physical security, and legal. Our CISO and other members of senior management are informed about and monitor the prevention, mitigation, detection, and remediation of cybersecurity incidents through their management of, and participation in, the cybersecurity risk management and strategy processes described above, including the operation of our incident response plan. If a cybersecurity incident is determined to be a material cybersecurity incident, our incident response plan and cybersecurity disclosure controls and procedures define the process to disclose such material cybersecurity incident.

Item 2. *Properties*

Our principal offices are currently located in Sunnyvale, California. We currently lease approximately 1.1 million square feet of space in 24 offices throughout the United States, of which we sublet 340,000 square feet to third parties. We own a 118,000 square foot building in California, which we lease to a third party. These offices are used primarily for sales and support, marketing, and administrative activities as well as research and development for our business segments.

We currently lease approximately 3.3 million square feet of space in 29 countries other than the United States, and own buildings in Wuhan, China and Hsinchu, Taiwan as well as office space in Xiamen, China and Yongin-si, South Korea. These offices are likewise used primarily for sales and support, service, and research and development activities for our business segments.

As our needs change, from time to time, we may relocate, expand, and/or otherwise increase or decrease the size of our operations, offices or personnel. We believe that our existing facilities, including both owned and leased properties, are in good condition and suitable for our current needs and that suitable additional or substitute space will be available on commercially reasonable terms as needed to accommodate any expansion of our operations.

Item 3. *Legal Proceedings*

We are subject to routine legal proceedings, as well as demands, claims and threatened litigation that arise in the normal course of our business. The ultimate outcome of any litigation is often uncertain and unfavorable outcomes could have a negative impact on our results of operations and financial condition. Regardless of outcome, litigation can have an adverse impact on Synopsys because of the defense costs, diversion of management resources and other factors.

We regularly review the status of each significant matter and assess its potential financial exposure. If the potential loss from any claim or legal proceeding is considered probable and the amount is estimable, we accrue a liability for the estimated loss. Legal proceedings are inherently uncertain and as circumstances change, it is possible that the amount of any accrued liability may increase, decrease or be eliminated.

We are not aware of any legal proceedings that would materially impact our business, operating results or financial condition.

Item 4. *Mine Safety Disclosures*

Not applicable.

PART II

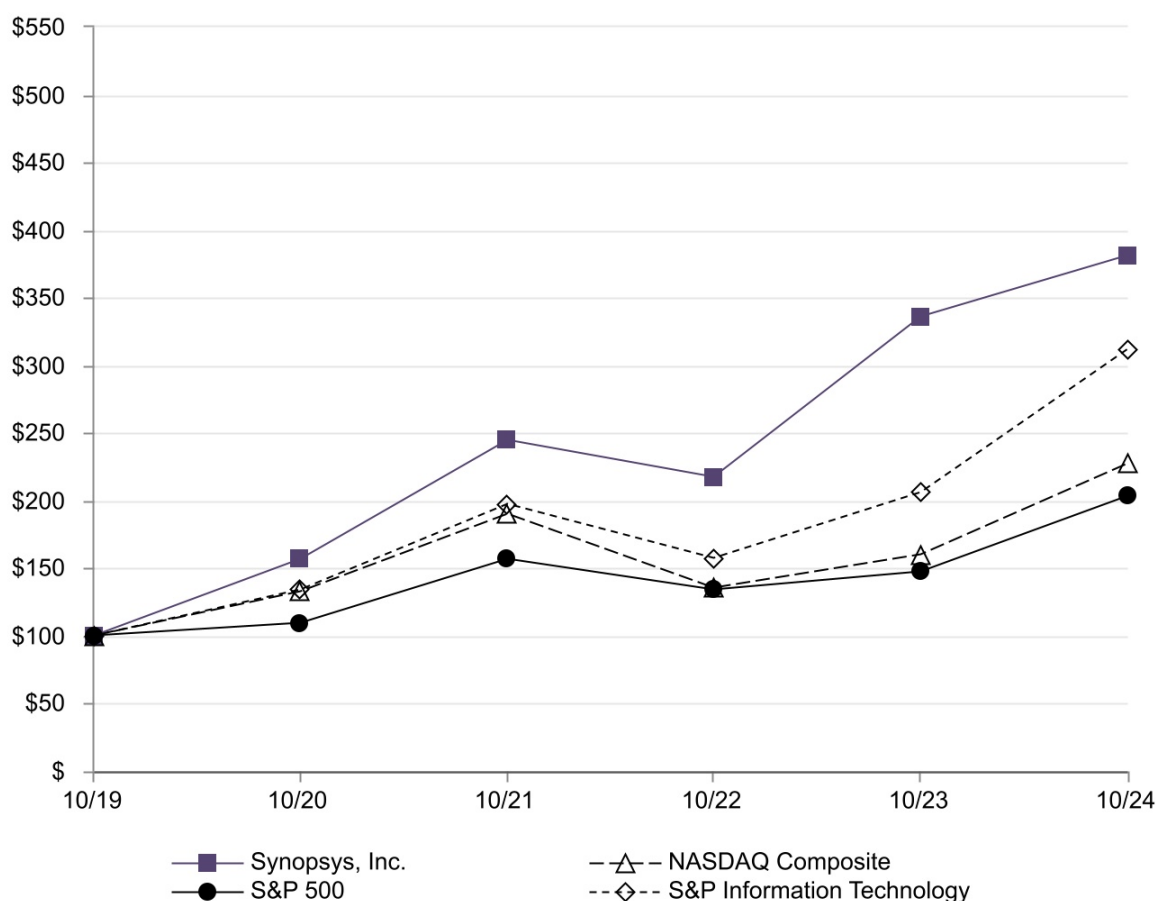
Item 5. *Market for Registrant's Common Equity, Related Stockholder Matters and Issuer Purchases of Equity Securities*

Our common stock trades on the Nasdaq Global Select Market under the symbol "SNPS." As of December 16, 2024, we had 198 stockholders of record.

Performance Graph

The following graph compares the five-year total return to stockholders of our common stock relative to the cumulative total returns of the S&P 500 Index, the S&P Information Technology Index and the Nasdaq Composite Index. The graph assumes that \$100 was invested in Synopsys common stock on November 1, 2019 (the last trading day before the beginning of our fifth preceding fiscal year) and in each of the indexes on October 31, 2019 (the closest month end) and that all dividends were reinvested. No cash dividends were declared on our common stock during such time. The comparisons in the table are not intended to forecast or be indicative of possible future performance of our common stock.

COMPARISON OF 5 YEAR CUMULATIVE TOTAL RETURN*



*\$100 invested on November 1, 2019 in stock or October 31, 2019 in index, including reinvestment of dividends. Fiscal year ending November 2.

The information presented above in the stock performance graph shall not be deemed to be “soliciting material” or to be “filed” with the SEC or subject to Regulation 14A or 14C, except to the extent that we subsequently specifically request that such information be treated as soliciting material or specifically incorporate it by reference into a filing under the Securities Act or Exchange Act.

Dividends

We have not paid cash dividends on our common stock.

Stock Repurchase Program

In fiscal 2022, our Board of Directors approved a stock repurchase program (the Program) with authorization to purchase up to \$1.5 billion of our common stock. As of October 31, 2024, \$194.3 million remained available for future repurchases under the Program. However, in connection with the pending Ansys Merger, we have suspended the Program until we reduce our expected debt levels.

The table below sets forth information regarding our repurchases of our common stock during the three months ended November 2, 2024:

Period	Total number of shares purchased	Average price paid per share	Total number of shares purchased as part of publicly announced programs	Maximum dollar value of shares that may yet be purchased under the programs
Month #1				
August 4, 2024 through September 7, 2024	—	\$ —	—	\$ 194,276,393
Month #2				
September 8, 2024 through October 5, 2024	—	\$ —	—	\$ 194,276,393
Month #3				
October 6, 2024 through November 2, 2024	—	\$ —	—	\$ 194,276,393
Total	—		—	\$ 194,276,393

Item 6. [Reserved]

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

Overview

The following overview is qualified in its entirety by the more complete discussion contained in this Item 7, the risk factors set forth in Part I, Item 1A of this Form 10-K, and our consolidated financial statements and the notes thereto set forth in Item 8 of this Form 10-K. Please also see the cautionary language at the beginning of Part I of this Annual Report regarding forward-looking statements.

Unless otherwise noted, this Management's Discussion and Analysis of Financial Condition and Results of Operations relates solely to our continuing operations and does not include the operations of our Software Integrity business. See "Software Integrity Divestiture" below and Note 3. *Discontinued Operations* of the *Notes to Consolidated Financial Statements* in this Annual Report for additional information about the Software Integrity Divestiture.

Fiscal 2024 Financial Performance Summary

For fiscal 2024, our results reflect continued, strong execution and the resiliency of our business, including 15% revenue growth compared to fiscal 2023, primarily due to revenue growth across all products and geographies. We have seen our customer set continue to expand as more companies in more industries define and optimize system performance at the silicon level. We also continue to see our total cost of revenue and operating expenses increase as we invest in our workforce and grow our research and development capabilities.

The following table sets forth some of our key consolidated financial information for each of our last three fiscal years:

	Year Ended October 31,		
	2024	2023	2022
	(in millions, except per share amounts)		
Revenue	\$ 6,127.4	\$ 5,318.0	\$ 4,615.7
Cost of revenue	\$ 1,245.3	\$ 1,030.9	\$ 898.0
Operating expenses	\$ 3,526.4	\$ 3,013.9	\$ 2,569.0
Operating income	\$ 1,355.7	\$ 1,273.2	\$ 1,148.7
Net income from continuing operations attributed to Synopsys	\$ 1,441.7	\$ 1,227.0	\$ 970.2
Net income from discontinued operations attributed to Synopsys	\$ 821.7	\$ 2.8	\$ 14.4
Diluted net income per share attributed to Synopsys:			
Continuing operations	\$ 9.25	\$ 7.91	\$ 6.20
Discontinued operations	\$ 5.26	\$ 0.01	\$ 0.09

Fiscal 2024 compared to fiscal 2023 financial performance summary

- Revenues were \$6.1 billion, an increase of \$809.4 million or 15%, primarily due to revenue growth across all products and geographies.
- Total cost of revenue and operating expenses was \$4.8 billion, an increase of \$726.9 million or 18%, primarily due to an increase of \$325.8 million in employee-related costs resulting from headcount increases through organic growth and acquisitions.
- Operating income was \$1.4 billion, an increase of \$82.5 million or 6%.
- Net income from discontinued operations was \$821.7 million, an increase of \$818.9 million, primarily due to the gain on Software Integrity Divestiture.

Fiscal 2023 compared to fiscal 2022 financial performance summary

- Revenues were \$5.3 billion, an increase of \$702.3 million or 15%, primarily due to revenue growth across all products and geographies.
- Total cost of revenue and operating expenses was \$4.0 billion, an increase of \$577.8 million or 17%, primarily due to an increase of \$246.7 million in employee-related costs resulting from headcount increases through organic growth and acquisitions.
- Operating income was \$1.3 billion, an increase of \$124.5 million or 11%.

Business Summary

Synopsys delivers trusted and comprehensive silicon to systems design solutions, from EDA, including system verification and validation solutions, to silicon IP. We partner closely with semiconductor and systems customers across a wide range of industries to maximize their engineering and research and development capacity. We are catalyzing the era of pervasive intelligence, powering innovation today that ignites the ingenuity of tomorrow. For more information about our business segments and product groups, see Part I, Item 1 *Business* of this Annual Report.

We have consistently grown our revenue since 2005, despite periods of global economic uncertainty. We achieved these results because of our solid execution, leading technologies and strong customer relationships, and because we generally recognize our revenue for software licenses over the arrangement period, which typically approximates three years. See Note 2. *Summary of Significant Accounting Policies and Basis of Presentation* of the *Notes to Consolidated Financial Statements* in this Annual Report for a discussion on our revenue recognition policy. The revenue we recognize in a particular period generally results from selling efforts in prior periods rather than the current period. As a result, decreases as well as increases in customer spending do not immediately affect our revenue in a significant way.

Our growth strategy is based on maintaining and building on our leadership in our Design Automation products, expanding and proliferating our Design IP offerings and continuing to expand our product portfolio and our total addressable market. Our revenue growth from period to period is expected to vary based on the mix of our time based and upfront products. Based on our leading technologies, customer relationships, business model, diligent expense management, and acquisition strategy, we believe that we will continue to execute our strategies successfully.

Pending Acquisition of Ansys

On January 15, 2024, we entered into an Agreement and Plan of Merger (the Merger Agreement) to acquire all of the outstanding shares of Ansys, a provider of broad engineering simulation and analysis software and services, in a cash-and-stock transaction (the Ansys Merger) that values Ansys at approximately \$35.0 billion, based on the closing price of Synopsys common stock on December 21, 2023.

Under the terms of the Merger Agreement, at the effective time of the Ansys Merger (the Effective Time), each share of Ansys common stock issued and outstanding immediately prior to the Effective Time (with certain exceptions set forth in the Merger Agreement) will be converted into the right to receive 0.3450 (the Exchange Ratio) of a share of Synopsys common stock and \$197.00 in cash, without interest. The Exchange Ratio is expected to result in Ansys equityholders and Synopsys equityholders owning approximately 16.5% and 83.5%, respectively, of the combined company on a pro forma basis following the Effective Time. The Merger Agreement also provides for Synopsys' assumption of certain outstanding Ansys options and other unvested Ansys equity awards held by continuing Ansys employees. If the stock consideration to be issued by Synopsys in connection with the Ansys Merger exceeds 19.9999% of the shares of Synopsys common stock issued and outstanding immediately prior to the Effective Time, the Exchange Ratio will be reduced to the minimum extent necessary to ensure that the aggregate number of shares of Synopsys common stock to be issued in connection with the Ansys Merger does not exceed such threshold, and the cash consideration will be correspondingly increased to offset such adjustment.

Pursuant to the Merger Agreement, at the Effective Time, two members of the board of directors of Ansys selected by mutual agreement of Synopsys and Ansys will become members of the Board of Directors of Synopsys. If the closing occurs less than six months prior to the next annual meeting of Synopsys' stockholders, Synopsys will nominate such directors for election at such meeting. On March 19, 2024, Synopsys and Ansys mutually agreed to designate Dr. Ajei Gopal, the current President and Chief Executive Officer of Ansys, to become a member of the Synopsys Board of Directors at the Effective Time, subject to the completion of Synopsys' director nomination process and satisfaction of all applicable eligibility requirements established by Synopsys' Corporate Governance and Nominating Committee. Ansys and Synopsys have not yet determined or agreed on the remaining member of the Ansys board of directors to be appointed to the Synopsys Board of Directors.

The Ansys Merger was approved by the holders of a majority of the outstanding shares of Ansys common stock on May 22, 2024 and is anticipated to close in the first half of calendar year 2025. The Ansys Merger is subject to the satisfaction or waiver of customary closing conditions, including, among other things, the clearance of the Ansys Merger under certain antitrust and foreign investment regimes, and the continued effectiveness of the registration statement on Form S-4 (File No. 333-277912) filed by us on March 14, 2024 and declared effective by the SEC on April 17, 2024. Following the determination that it was a necessary step towards obtaining governmental approval of and successfully closing the Ansys Merger, on September 3, 2024, we signed a definitive agreement for the sale of

our Optical Solutions Group to Keysight Technologies, Inc. (the Optical Solutions Divestiture). The Optical Solutions Divestiture is subject to customary closing conditions, including review by regulatory authorities, and the successful closing of the Ansys Merger.

We and Ansys each have termination rights under the Merger Agreement. A fee of \$1.5 billion may be payable by us to Ansys, or a fee of \$950.0 million may be payable by Ansys to us, upon termination of the Merger Agreement under specified circumstances, each as more fully described in the Merger Agreement. The receipt of financing by us is not a condition to complete the Ansys Merger.

In connection with the execution of the Merger Agreement, we entered into a commitment letter on January 15, 2024 (the Bridge Commitment Letter) with certain financial institutions that committed to provide, subject to the satisfaction of customary closing conditions, a senior unsecured bridge facility (the Bridge Commitment). On October 3, 2024, we reduced the Bridge Commitment by \$1.1 billion to \$10.6 billion following the closing of the Software Integrity Divestiture (as defined below). The Bridge Commitment currently provides for an aggregate principal amount of up to \$10.6 billion. On February 13, 2024, we entered into a term loan facility credit agreement (the Term Loan Agreement), which provides us with the ability to borrow up to \$4.3 billion at the closing of the Ansys Merger, subject to the satisfaction of customary closing conditions for similar facilities, for the purpose of financing a portion of the cash consideration to be paid in the Ansys Merger and paying related fees and expenses in connection with the Ansys Merger and the other transactions contemplated by the Merger Agreement. See Note 11. *Bridge Commitment Letter, Term Loan and Revolving Credit Facilities* of the *Notes to Consolidated Financial Statements* in this Annual Report for more information on the Bridge Commitment and the Term Loan Agreement.

For more on risks related to the Ansys Merger, see Part I, Item 1A, *Risk Factors*, “*Risks Related to the Ansys Merger*” of this Annual Report.

Impact of the Current Macroeconomic and Geopolitical Environment

Uncertainty in the macroeconomic environment, including the effects of, among other things, sustained global inflationary pressures and elevated interest rates, potential economic slowdowns or recessions, supply chain disruptions, geopolitical pressures, fluctuations in foreign exchange rates, and associated global economic conditions, have resulted in volatility in credit, equity and foreign currency markets. In fiscal 2024, while we saw continued strength in the artificial intelligence and high-performance computing sectors, certain industries such as industrial, automotive and consumer electronics are recovering more slowly from recent macroeconomic uncertainty. We expect growth across our geographies in fiscal 2025; however, we are expecting a challenging near-term growth environment, including in China, due to macroeconomic factors as well as, to a lesser degree, Entity List and other global trade restrictions. For more on the anticipated impact of export control regulations, see the discussion below and in Part I, Item 1A, *Risk Factors* of this Annual Report.

The current uncertain macroeconomic environment could lead some of our customers to postpone their decision-making, decrease their spending and/or delay their payments to us. For more on risks related to the current macroeconomic and geopolitical environment, see Part I, Item 1A, *Risk Factors*, “*Uncertainty in the macroeconomic environment, and its potential impact on the semiconductor and electronics industries, may negatively affect our business, operating results and financial condition*” of this Annual Report.

We are also actively monitoring geopolitical pressures around the world, including, among others, changes in China-Taiwan relations, the conflicts in Ukraine and the Middle East and other regional or global military conflicts. Any significant disruption caused by these or other geopolitical pressures or conflicts could materially affect our employees, business, operating results, financial condition or customers in those regions of the world. For example, Synopsys has employees, operations, customers and strategic partners in the Middle East. While we are actively monitoring this conflict, at this time, it has not had a material impact on our business, operating results or financial condition to date.

While our time-based model provides stability to our business, operating results and overall financial position, the broader implications of these macroeconomic or geopolitical events, particularly in the long term, remain uncertain. Further, the negative impact of these events or disruptions may be deferred due to our business model.

See Part I, Item 1A, *Risk Factors* of this Annual Report for further discussion of the impact of global economic and geopolitical uncertainty on our business, operations and financial condition.

Developments in Export Control Regulations

The Bureau of Industry and Security (BIS) of the U.S. Department of Commerce published changes to U.S. export control regulations (U.S. Export Regulations), including, among other things, the inclusion of certain Chinese technology companies on the Entity List, restrictions on the export of electronic computer-aided design software specially designed for the development of ICs with Gate-All-Around Field-Effect Transistor structures, and certain other restrictions to China's access to certain semiconductor and advanced computing technology. We currently believe U.S. Export Regulations will not have a material impact on our business. We anticipate additional changes to U.S. Export Regulations in the future, but we cannot forecast the scope or timing of such changes, nor the impact on our business. We will continue to monitor such developments, including potential additional trade restrictions, and other regulatory or policy changes by the U.S. and foreign governments.

For more on risks related to government export and import restrictions such as the U.S. government's Entity List and other U.S. Export Regulations, see Part I, Item 1A, *Risk Factors*, "We are subject to governmental export and import requirements that could subject us to liability and restrict our ability to sell our products and services, which could impair our ability to compete in international markets."

Software Integrity Divestiture

On May 5, 2024, we entered into an Equity Purchase Agreement (the Purchase Agreement), by and between Synopsys and Sapphire Software Buyer, Inc. (Buyer), an entity controlled by funds affiliated with Clearlake Capital Group, L.P. and Francisco Partners (together, the Sponsors). On September 30, 2024, we completed the previously announced sale of our Software Integrity business to entities controlled by funds affiliated with the Sponsors (the Software Integrity Divestiture). We previously determined that the Software Integrity business met the criteria to be disclosed as discontinued operations in the second quarter of fiscal 2024. See Note 3. *Discontinued Operations* of the *Notes to Consolidated Financial Statements* in this Annual Report for additional information on discontinued operations.

Business Segments

Design Automation. This segment includes our advanced silicon design, verification products and services and system integration products. This segment also includes digital, custom and field programmable gate array (FPGA) integrated circuit (IC) design software, verification software and hardware products, system integration products and services, and manufacturing software products. Designers use our EDA products to accelerate and automate the chip design process, reduce errors and enable more powerful and robust designs, with improved productivity for faster time to market.

Design IP. This segment includes our interface, foundation, security, and embedded processor IP, IP subsystems, and IP implementation services that serve companies primarily in the semiconductor and electronics industries. We are a leading provider of high-quality, silicon-proven IP solutions for system-on-chips (SoCs). This includes IP that has been optimized to address specific application requirements for the mobile, automotive, digital home, Internet of Things and AI/data center markets, enabling designers to quickly develop SoCs in these areas.

Fiscal Year End

Historically, our fiscal years have been 52- or 53-week periods ending on the Saturday nearest to October 31. Fiscal 2024 was a 53-week year ending on November 2, 2024, which impacted our revenue, expenses and operating results. Fiscal 2023 and 2022 were 52-week years and ended on October 28, 2023, and October 29, 2022, respectively. The extra week in fiscal 2024 resulted in approximately \$70.5 million of additional revenue, and approximately \$61.0 million of additional expenses, including approximately \$11.0 million in stock-based compensation costs. The financial impact of one extra week included the amounts associated with the discontinued operations.

We have changed our fiscal year end from the Saturday nearest to October 31 and consisting of 52 or 53 fiscal weeks to a fiscal year end of October 31 each year. The fiscal year change becomes effective with our fiscal year 2025, which began on November 3, 2024. Our fiscal quarters will end on January 31, April 30, July 31 and October 31 of each year.

For presentation purposes, this Annual Report refers to the closest calendar month end.

Critical Accounting Estimates

Our consolidated financial statements have been prepared in accordance with U.S. GAAP. In preparing these financial statements, we make assumptions, judgments and estimates that can affect the reported amounts of assets, liabilities, revenues and expenses, and net income. On an ongoing basis, we evaluate our estimates based on historical experience and various other assumptions that we believe are reasonable under the circumstances. Our actual results may differ from these estimates. See Note 2. *Summary of Significant Accounting Policies and Basis of Presentation* of the *Notes to Consolidated Financial Statements* in this Annual Report for further information on our significant accounting policies.

The accounting policies that most frequently require us to make assumptions, judgments and estimates, and therefore are critical to understanding our results of operations, are:

- Revenue recognition; and
- Business combinations.

Revenue Recognition

Our contracts with customers often include promises to transfer multiple products and services to a customer. Arrangements with customers can involve multiple products and various license rights. Customers can negotiate for a broad portfolio of solutions, and favorable terms along with future purchase options to manage their overall costs. Analysis of the terms and conditions in these contracts and their effect on revenue recognition may require significant judgment.

We have concluded that our EDA software licenses in Technology Subscription License (TSL) contracts are not distinct from our obligation to provide unspecified software updates to the licensed software throughout the license term, because those promises represent inputs to a single, combined performance obligation. Where unspecified additional software product rights are part of the contract with the customer, those rights are accounted for as part of the single performance obligation that includes the licenses, updates, and technical support, because such rights are provided during the same period of time and have the same time-based pattern of transfer to the customer.

For our IP licensing arrangements, we have concluded that the licenses and support services are distinct from each other, and therefore treated as separate performance obligations. Revenues from IP licenses are recognized at a point in time upon transfer of control of the IP license, and support services are recognized over the support period as a stand ready obligation to the customer.

We are required to estimate total consideration expected to be received from contracts with customers. In some circumstances, the consideration expected to be received is variable based on the specific terms of the contract or based on our expectations of the term of the contract. Generally, we have not experienced significant returns or refunds to customers. These estimates require significant judgment and the change in these estimates could have an effect on our results of operations during the periods involved.

Business Combinations

We allocate the purchase price of acquired companies to the tangible and intangible assets acquired and liabilities assumed based upon their estimated fair values on the acquisition date with the exception of contract assets and contract liabilities (deferred revenue) which are recognized and measured on the acquisition date in accordance with our "Revenue Recognition" policy in Note 2. *Summary of Significant Accounting Policies and Basis of Presentation* of the *Notes to Consolidated Financial Statements* in this Annual Report, as if we had originated the contracts. The excess of the purchase price over the fair values of these net tangible and intangible assets acquired is recorded as goodwill.

Accounting for business combinations requires management to make significant estimates and assumptions including our estimates for intangible assets. Although we believe the assumptions and estimates we have made are reasonable, they are based in part on historical experience, market conditions and information obtained from management of the acquired companies and are inherently uncertain. Examples of critical estimates in valuing certain of the intangible assets we have acquired or may acquire in the future include, but are not limited to:

- future expected cash flows from software license sales, subscriptions, support agreements, consulting contracts and acquired developed technologies and patents;

- historical and expected customer attrition rates and anticipated growth in revenue from acquired customers;
- estimated obsolescence rates used in valuing technology related intangible assets;
- the expected use of the acquired assets; and
- discount rates used to discount expected future cash flows to present value, which are typically derived from a weighted-average cost of capital analysis and adjusted to reflect inherent risks.

The fair value of the definite-lived intangibles was determined using variations of the income approach.

For acquisitions completed in fiscal 2024, the fair value for acquired existing technology was determined by applying the relief from royalty method under the income approach. The relief from royalty method applies a royalty rate to projected income to quantify the benefit of owning the intangible asset rather than paying a royalty for use of the asset. The economic useful life was determined based on historical technology obsolescence patterns and prospective technology developments. We assumed royalty rates ranging from 35% to 40%. The present value of operating cash flows from the existing technology was determined using discount rates ranging from approximately 11% to 14%.

Customer relationships represent the fair value of the existing relationships with the acquired company's customers. Their fair value was determined using the multi-period excess earnings method under the income approach, which involves isolating the net earnings attributable to the asset being measured based on the present value of the incremental after-tax cash flows (excess earnings) attributable solely to the asset over its remaining useful life. The economic useful life was determined based on historical customer turnover rates. Projected income from existing customer relationships considered customer retention rates ranging from 55% to 95%. The present value of operating cash flows from existing customers was determined using discount rates ranging from approximately 11% to 14%.

We believe that our estimates and assumptions related to the fair value of acquired intangible assets are reasonable, but significant judgment is involved.

Results of Operations

Revenue

Our revenues are generated from two business segments: the Design Automation segment and the Design IP segment. See Note 20. *Segment Disclosure* of the *Notes to Consolidated Financial Statements* in this Annual Report for more information about our reportable segments and revenue by geographic regions.

Further disaggregation of the revenues into various products and services within these two segments is summarized as follows:

Design Automation Segment

- EDA solutions include digital, custom and FPGA IC design software, verification software and hardware products, system integration products and services, and obligations to provide unspecified updates and support services. EDA products and services are typically sold through TSL arrangements that grant customers the right to access and use all of the licensed products at the outset of an arrangement; software updates are generally made available throughout the entire term of the arrangement. The duration of our TSL contracts is generally three years, though it may vary for specific arrangements. We have concluded that the software licenses in TSL contracts are not distinct from the obligation to provide unspecified software updates to the licensed software throughout the license term, because the multiple software licenses and support represent inputs to a single, combined offering, and timely, relevant software updates are integral to maintaining the utility of the software licenses. We recognize revenue for the combined performance obligation under TSL contracts ratably over the term of the license.
- In the case of arrangements involving the sale of hardware products, we generally have two performance obligations. The first performance obligation is to transfer the hardware product, which includes software integral to the functionality of the hardware product. The second performance obligation is to provide maintenance on the hardware and its embedded software, which includes rights to technical support, hardware repairs and software updates that are all provided over the same term

and have the same time-based pattern of transfer to the customer. The portion of the transaction price allocated to the hardware product is generally recognized as revenue at the time of shipment because the customer obtains control of the product at that point in time. We have concluded that control generally transfers at that point in time because the customer has the ability to direct the use of the asset and an obligation to pay for the hardware. The portion of the transaction price allocated to the maintenance obligation is recognized as revenue ratably over the maintenance term.

- Revenue from Professional Service contracts is recognized over time, generally using costs incurred or hours expended to measure progress. We have a history of reasonably estimating project status and the costs necessary to complete projects. A number of internal and external factors can affect these estimates, including labor rates, utilization and efficiency variances and specification and testing requirement changes.

Design IP Segment

- Design IP includes our interface, foundation, security, and embedded processor IP, IP subsystems, and IP implementation services. These arrangements generally have two performance obligations which consist of transferring of the licensed IP and providing related support, which includes rights to technical support and software updates that are provided over the support term and are transferred to the customer over time. Revenue allocated to the IP licenses is recognized at a point in time upon the later of the delivery date or the beginning of the license period, and revenue allocated to support is recognized over the support term. Royalties are recognized as revenue in the quarter in which the applicable customer sells its products that incorporate our IP. Payments for IP contracts are generally received upon delivery of the IP. Revenue related to the customization of certain IP is recognized over time, generally using costs incurred or hours expended to measure progress.

Our customer arrangements can involve multiple products and various license rights, and our customers negotiate with us over many aspects of these arrangements. For example, they generally request a broader portfolio of solutions, support and services and seek more favorable terms such as expanded license usage, future purchase rights and other unique rights at an overall lower total cost. No single factor typically drives our customers' buying decisions, and we compete on all fronts to serve customers in highly competitive markets. Customers generally negotiate the total value of the arrangement rather than just unit pricing or volumes.

Total Revenue

	Year Ended October 31,			\$ Change	% Change	\$ Change	% Change
	2024	2023	2022	2024 vs. 2023		2023 vs. 2022	
	(dollars in millions)						
Design Automation	\$ 4,221.1	\$ 3,775.3	\$ 3,300.2	\$ 445.8	12 %	\$ 475.1	14 %
Design IP	1,906.3	1,542.7	1,315.5	363.6	24 %	227.2	17 %
Total	\$ 6,127.4	\$ 5,318.0	\$ 4,615.7	\$ 809.4	15 %	\$ 702.3	15 %

Our revenues are subject to fluctuations, primarily due to customer requirements including the timing and value of contract renewals. For example, we experience fluctuations in our revenues due to factors such as the timing of IP product sales, Flexible Spending Account (FSA) drawdowns, royalties, and hardware products sales. As revenues from IP products sales and hardware products sales are recognized upfront, customer demand and timing requirements for such IP products and hardware products could result in increased variability of our total revenues.

Contracted but unsatisfied or partially unsatisfied performance obligations (backlog) as of October 31, 2024 were approximately \$8.1 billion, which includes \$1.2 billion in non-cancellable FSA commitments from customers where actual product selection and quantities of specific products or services are to be determined by customers at a later date. We have elected to exclude future sales-based royalty payments from the remaining performance obligations. Approximately 41% of the backlog as of October 31, 2024, excluding non-cancellable FSA, is expected to be recognized as revenue over the next 12 months, with the remainder recognized thereafter. The majority of the remaining backlog is expected to be recognized in the following three years. The backlog was approximately \$8.1 billion as of October 31, 2023, which included \$1.4 billion in non-cancellable FSA commitments from customers.

The amount and composition of unsatisfied performance obligations will fluctuate period to period. We do not believe the amount of unsatisfied performance obligations is indicative of future sales or revenue, or that such obligations at the end of any given period correlates with actual sales performance of a particular geography or

[Table of Contents](#)

particular products and services. For more information regarding our revenue as of October 31, 2024, including our contract balances as of such date, see Note 6. *Revenue of the Notes to Consolidated Financial Statements* in this Annual Report.

For fiscal 2024 compared to fiscal 2023 and fiscal 2023 compared to fiscal 2022, revenues increased due to the continued organic growth of our business in all product groups and geographies.

For a discussion of revenue by geographic areas, see Note 20. *Segment Disclosure of the Notes to Consolidated Financial Statements* in this Annual Report.

Time-Based Products Revenue

	Year Ended October 31,			\$ Change	% Change	\$ Change	% Change
	2024	2023	2022	2024 vs. 2023		2023 vs. 2022	
(dollars in millions)							
Time-based products revenue	\$ 3,224.3	\$ 3,016.3	\$ 2,657.7	\$ 208.0	7 %	\$ 358.6	13 %
Percentage of total revenue	53 %	57 %	58 %				

The increase in time-based products revenue for fiscal 2024 compared to fiscal 2023 and for fiscal 2023 compared to fiscal 2022 was primarily attributable to an increase in TSL license revenue from arrangements booked in prior periods. The increase for fiscal 2024 compared to fiscal 2023 also included the impact of the extra week in fiscal 2024.

Upfront Products Revenue

	Year Ended October 31,			\$ Change	% Change	\$ Change	% Change
	2024	2023	2022	2024 vs. 2023		2023 vs. 2022	
(dollars in millions)							
Upfront products revenue	\$ 1,802.2	\$ 1,400.1	\$ 1,221.2	\$ 402.1	29 %	\$ 178.9	15 %
Percentage of total revenue	29 %	26 %	26 %				

Changes in upfront products revenue are generally attributable to normal fluctuations in the extent and timing of customer requirements, which can drive the amount of upfront orders and revenue in any particular period.

The increase in upfront products revenue for fiscal 2024 compared to fiscal 2023 and for fiscal 2023 compared to fiscal 2022 was primarily due to an increase in the sale of IP and hardware products driven by higher demand from customers.

Upfront products revenue as a percentage of total revenue will likely fluctuate based on the timing of IP and hardware product sales. Such fluctuations will continue to be impacted by the timing of shipments and FSA drawdowns due to customer requirements.

Maintenance and Service Revenue

	Year Ended October 31,			\$ Change	% Change	\$ Change	% Change
	2024	2023	2022	2024 vs. 2023		2023 vs. 2022	
(dollars in millions)							
Maintenance revenue	\$ 429.4	\$ 358.1	\$ 291.6	\$ 71.3	20 %	\$ 66.5	23 %
Professional service and other revenue	671.5	543.5	445.2	128.0	24 %	98.3	22 %
Total	\$ 1,100.9	\$ 901.6	\$ 736.8	\$ 199.3	22 %	\$ 164.8	22 %
Percentage of total revenue	18 %	17 %	16 %				

The increase in maintenance revenue for fiscal 2024 compared to fiscal 2023 and for fiscal 2023 compared to fiscal 2022 was primarily due to an increase in the volume of arrangements that include maintenance.

The increase in professional service and other revenue for fiscal 2024 compared to fiscal 2023 and for fiscal 2023 compared to fiscal 2022 was primarily due to the timing of IP customization projects.

Cost of Revenue

	Year Ended October 31,			\$ Change	% Change	\$ Change	% Change
	2024	2023	2022	2024 vs. 2023		2023 vs. 2022	
	(dollars in millions)						
Cost of products revenue	\$ 770.2	\$ 697.7	\$ 594.0	\$ 72.5	10 %	\$ 103.7	17 %
Cost of maintenance and service revenue	367.1	287.9	259.3	79.2	28 %	28.6	11 %
Amortization of acquired intangible assets	108.0	45.3	44.7	62.7	138 %	0.6	1 %
Total	<u>\$ 1,245.3</u>	<u>\$ 1,030.9</u>	<u>\$ 898.0</u>	<u>\$ 214.4</u>	<u>21 %</u>	<u>\$ 132.9</u>	<u>15 %</u>
Percentage of total revenue	20 %	19 %	19 %				

We divide cost of revenue into three categories: cost of products revenue, cost of maintenance and service revenue, and amortization of acquired intangible assets.

Cost of products revenue. Cost of products revenue includes costs related to products sold and software licensed, hardware-related costs including inventory provisions, allocated operating costs related to product support and distribution, royalties paid to third-party vendors, and the amortization of capitalized software development costs.

Cost of maintenance and service revenue. Cost of maintenance and service revenue includes costs to deliver our maintenance services, such as hotline and on-site support, production services and documentation of maintenance updates.

Amortization of acquired intangible assets. Amortization of acquired intangible assets, included in cost of revenue, consists of the amortization and impairment charges of core/developed technology and certain contract rights intangible assets related to acquisitions.

The increase in cost of revenue for fiscal 2024 compared to fiscal 2023 was primarily due to increases of \$62.7 million in amortization of acquired technology-related intangible assets, which included an impairment charge of \$53.5 million due to a decline in estimated fair value resulting from the reductions in the expected future cash flows associated with certain core/developed technology intangible assets as further discussed in Note 7. *Goodwill and Intangible Assets* of the *Notes to Consolidated Financial Statements* in this Annual Report, \$53.5 million in costs to fulfill IP consulting arrangements, \$47.4 million in employee-related costs as a result of headcount increases from hiring, \$43.4 million in hardware-related costs including inventory provisions, \$3.4 million in the change in the fair value of our executive deferred compensation plan assets, and \$3.2 million in maintenance and depreciation expenses. These increases were partially offset by a decrease of \$2.1 million in facility costs.

The increase in cost of revenue for fiscal 2023 compared to fiscal 2022 was primarily due to increases of \$53.4 million in hardware-related costs including inventory provisions, \$45.8 million in employee-related costs as a result of headcount increases from hiring, \$13.1 million in facility costs, \$7.8 million in costs to fulfill IP consulting arrangements, and \$6.0 million in the change in the fair value of our executive deferred compensation plan assets.

Operating Expenses

Research and Development

	Year Ended October 31,			\$ Change	% Change	\$ Change	% Change
	2024	2023	2022	2024 vs. 2023		2023 vs. 2022	
	(dollars in millions)						
Research and development expenses	\$ 2,082.4	\$ 1,849.9	\$ 1,589.8	\$ 232.5	13 %	\$ 260.1	16 %
Percentage of total revenue	34 %	35 %	34 %				

The increase in research and development expenses for fiscal 2024 compared to fiscal 2023 was primarily due to higher employee-related costs of \$148.2 million as a result of headcount increases as we continue to expand and

[Table of Contents](#)

enhance our product portfolio, increases of \$36.5 million in the change in the fair value of our executive deferred compensation plan assets, \$20.6 million in facility costs, \$6.7 million in depreciation expenses, and \$2.4 million in consultant and contractor costs.

The increase in research and development expenses for fiscal 2023 compared to fiscal 2022 was primarily due to higher employee-related costs of \$135.1 million as a result of headcount increases as we continue to expand and enhance our product portfolio, increases of \$57.2 million in the change in fair value of our executive deferred compensation plan assets, \$31.0 million in facility costs, and \$21.2 million in consultant and contractor costs.

Sales and Marketing

	Year Ended October 31,			\$ Change	% Change	\$ Change	% Change
	2024	2023	2022	2024 vs. 2023		2023 vs. 2022	
	(dollars in millions)						
Sales and marketing expenses	\$ 859.3	\$ 724.9	\$ 642.7	\$ 134.4	19 %	\$ 82.2	13 %
Percentage of total revenue	14 %	14 %	14 %				

The increase in sales and marketing expenses for fiscal 2024 compared to fiscal 2023 was primarily due to increases of \$90.9 million in employee-related costs due to headcount increases, \$19.6 million in the change in the fair value of our executive deferred compensation plan assets, and \$7.0 million in travel and marketing costs due to an increased number of in-person meetings and events.

The increase in sales and marketing expenses for fiscal 2023 compared to fiscal 2022 was primarily due to increases of \$41.0 million in employee-related costs due to headcount increases and higher sales commissions, \$13.2 million in the change in the fair value of our executive deferred compensation plan assets, \$10.4 million in travel and marketing costs due to an increased number of in-person meetings and events, and \$8.4 million in facility costs.

General and Administrative

	Year Ended October 31,			\$ Change	% Change	\$ Change	% Change
	2024	2023	2022	2024 vs. 2023		2023 vs. 2022	
	(dollars in millions)						
General and administrative expenses	\$ 568.5	\$ 376.7	\$ 313.6	\$ 191.8	51 %	\$ 63.1	20 %
Percentage of total revenue	9 %	7 %	7 %				

The increase in general and administrative expenses for fiscal 2024 compared to fiscal 2023 was primarily due to increases of \$135.2 million in legal, consulting and other professional fees mainly in connection with the Ansys Merger, \$39.3 million in personnel-related costs due to headcount increases from hiring, \$24.2 million in maintenance and depreciation expenses, and \$5.7 million in the change in the fair value of our executive deferred compensation plan assets.

The increase in general and administrative expenses for fiscal 2023 compared to fiscal 2022 was primarily due to increases of \$24.8 million in personnel-related costs due to headcount increases from hiring, \$16.1 million in maintenance and depreciation expenses, \$15.9 million in legal, consulting and other professional fees, and \$11.8 million in the change in the fair value of our executive deferred compensation plan assets. These increases were partially offset by bad debt recoveries of \$15.9 million in the second quarter of fiscal 2022.

Change in Fair Value of Deferred Compensation

The income or loss arising from the change in the fair value of our non-qualified deferred compensation plan obligation is recorded in cost of sales and each functional operating expense, with the offsetting change in the fair value of the related assets recorded in interest and other income (expense), net. There is no impact on our net income from the fair value changes in our deferred compensation plan obligation and related assets.

Amortization of Acquired Intangible Assets

Amortization of acquired intangible assets included in operating expenses consists of the amortization of trademarks, trade names, and customer relationships intangible assets related to acquisitions.

	Year Ended October 31,			\$ Change	% Change	\$ Change	% Change
	2024	2023	2022	2024 vs. 2023		2023 vs. 2022	
	(dollars in millions)						
Amortization of acquired intangible assets	\$ 16.2	\$ 9.3	\$ 11.6	\$ 6.9	74 %	(2.3)	(20)%
Percentage of total revenue	— %	— %	— %				

The increase in amortization of acquired intangible assets for fiscal 2024 compared to fiscal 2023 was primarily due to amortization expense related to intangible assets acquired during fiscal 2024, partially offset by certain intangible assets becoming fully amortized during fiscal 2024.

The decrease in amortization of acquired intangible assets for fiscal 2023 compared to fiscal 2022 was primarily due to certain intangible assets becoming fully amortized during fiscal 2023, partially offset by amortization expense related to intangible assets acquired during fiscal 2023.

Restructuring Charges

In the first quarter of fiscal 2023, we initiated a restructuring plan for involuntary employee terminations as part of a business reorganization (the 2023 Plan). The 2023 Plan was substantially completed in the third quarter of fiscal 2023, and total charges under the 2023 Plan consisting primarily of severance costs and facility exit costs were \$77.0 million, of which \$23.9 million were related to discontinued operations.

The following is a summary of our restructuring liabilities:

Fiscal Year	Balance at Beginning of Period		Costs Incurred		Cash Payments		Balance at End of Period	
	(dollars in millions)							
2024	\$	8.2	\$	—	\$	(3.6)	\$	4.6
2023	\$	—	\$	53.1	\$	(44.9)	\$	8.2
2022	\$	12.9	\$	11.2	\$	(24.1)	\$	—

See Note 21. *Restructuring Charges* of the *Notes to Consolidated Financial Statements* in this Annual Report for additional information.

Interest and Other Income (Expense), Net

	Year Ended October 31,			\$ Change	% Change	\$ Change	% Change
	2024	2023	2022	2024 vs. 2023		2023 vs. 2022	
	(dollars in millions)						
Interest income	\$ 67.0	\$ 36.7	\$ 8.5	\$ 30.3	83 %	\$ 28.2	332 %
Interest expense	(35.2)	(1.2)	(1.7)	(34.0)	2,833 %	0.5	(29)%
Gains (losses) on assets related to executive deferred compensation plan	85.4	20.2	(67.5)	65.2	323 %	87.7	(130)%
Gain on sale of strategic investments	55.1	—	—	55.1	100 %	—	— %
Foreign currency exchange gains (losses)	6.3	(1.5)	4.7	7.8	(520)%	(6.2)	(132)%
Other, net	(20.5)	(22.0)	10.7	1.5	(7)%	(32.7)	(306)%
Total	\$ 158.1	\$ 32.2	\$ (45.3)	\$ 125.9	391 %	\$ 77.5	(171)%

The increase in interest and other income (expense) for fiscal 2024 as compared to fiscal 2023 was primarily due to the increase in the fair value of our executive deferred compensation plan assets and the impact of gain recognized from the sale of strategic investments.

The increase in interest and other income (expense) for fiscal 2023 as compared to fiscal 2022 was primarily due to the increase in the fair value of our executive deferred compensation plan assets.

Segment Operating Results

We do not allocate certain operating expenses managed at a consolidated level to our reportable segments. These unallocated expenses consist primarily of amortization of acquired intangible assets, stock-based compensation expense, changes in the fair value of deferred compensation plan, restructuring charges, and acquisition/divestiture related items. See Note 20. *Segment Disclosure* of the *Notes to Consolidated Financial Statements* in this Annual Report for more information.

Design Automation Segment

	Year Ended October 31,			\$ Change	% Change	\$ Change	% Change
	2024	2023	2022	2024 vs. 2023		2023 vs. 2022	
	(dollars in millions)						
Adjusted operating income	\$ 1,631.9	\$ 1,413.9	\$ 1,176.1	\$ 218.0	15 %	\$ 237.8	20 %
Adjusted operating margin	39 %	37 %	36 %	2 %	5 %	1 %	3 %

The increase in adjusted operating income for fiscal 2024 compared to fiscal 2023 and for fiscal 2023 compared to fiscal 2022 was primarily due to an increase in revenue from arrangements booked in prior periods.

Design IP Segment

	Year Ended October 31,			\$ Change	% Change	\$ Change	% Change
	2024	2023	2022	2024 vs. 2023		2023 vs. 2022	
	(dollars in millions)						
Adjusted operating income	\$ 730.2	\$ 514.1	\$ 403.8	\$ 216.1	42 %	\$ 110.3	27 %
Adjusted operating margin	38 %	33 %	31 %	5 %	15 %	2 %	6 %

The increase in adjusted operating income for fiscal 2024 compared to fiscal 2023 and for fiscal 2023 compared to fiscal 2022 was primarily due to an increase in the revenue of IP products driven by timing of customer demands.

Income Taxes

Our effective tax rate for fiscal 2024 is 6.6%, which included \$70.1 million of U.S. federal research tax credit benefit, \$104.8 million of foreign derived intangible income (FDII) deduction benefit, and \$43.4 million of net excess tax benefit from stock-based compensation.

Our effective tax rate for fiscal 2023 was 6.9%, which included \$60.5 million of U.S. federal research tax credit benefit, \$80.0 million of FDII deduction benefit, and \$40.0 million of net excess tax benefit from stock-based compensation.

See Note 18. *Income Taxes* of the *Notes to Consolidated Financial Statements* in this Annual Report for further discussion of the provision for income taxes.

Liquidity and Capital Resources

Our principal sources of liquidity are funds generated from our business operations and funds that may be drawn down under our revolving credit and term loan facilities.

As of October 31, 2024, we held \$4.1 billion in cash, cash equivalents and short-term investments. We also held \$2.2 million in restricted cash primarily associated with deposits for office leases and employee loan programs. Our cash equivalents consisted primarily of taxable money market mutual funds, time deposits and highly liquid investments with maturities of three months or less. Our short-term investments include U.S. government and municipal obligations, investment-grade available-for-sale debt and asset backed securities with an overall weighted-average credit rating of approximately AA.

As of October 31, 2024, approximately \$916.9 million of our cash and cash equivalents were domiciled in various foreign jurisdictions. We have provided for foreign withholding taxes on the undistributed earnings of certain of our foreign subsidiaries to the extent such earnings are no longer considered to be indefinitely reinvested in the operations of those subsidiaries.

We expect that the pending Ansys Merger is likely to result in a material increase in our debt and liquidity needs that will impact our capital needs during the next twelve months and beyond. We intend to fund our anticipated \$19 billion cash consideration payment through a combination of cash and debt, and have a fully-committed debt financing in place for \$14.9 billion (including \$10.6 billion under the Bridge Commitment). Net cash proceeds received from certain debt and equity issuances or the sale of certain businesses and assets, including the Software Integrity Divestiture, as well as term loan commitments under certain qualifying term loan facilities, will result in mandatory commitment reductions under the Bridge Commitment. On October 3, 2024, we reduced the Bridge Commitment by \$1.1 billion to \$10.6 billion following the closing of the Software Integrity Divestiture. See Note 11. *Bridge Commitment Letter, Term Loan and Revolving Credit Facilities* of the *Notes to Consolidated Financial Statements* in this Annual Report for further discussion.

Effective fiscal 2023, our research and development expenditures were required to be capitalized and amortized under the Tax Cuts and Jobs Act instead of being deducted when incurred for US tax purposes, which significantly increases our federal cash tax liability. Additionally, as a result of the IRS tax relief for the California winter storms, the due date for our fiscal 2023 federal tax payment was November 16, 2023 and as such, we deferred our fiscal 2023 federal cash tax payments until the first quarter of fiscal 2024. This resulted in a significant increase to our cash outflows beginning in fiscal 2024. See Note 18. *Income Taxes* of the *Notes to Consolidated Financial Statements* in this Annual Report for further discussion.

Cash Flows

Our consolidated statements of cash flows include cash flows related to the Software Integrity business. Significant non-cash items and capital expenditures of discontinued operations related to our Software Integrity business are presented separately in Note 3. *Discontinued Operations* of the *Notes to Consolidated Financial Statements*. For a discussion of fiscal 2023 changes compared to fiscal 2022, see the discussion in Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations* in our Annual Report for the fiscal year ended October 31, 2023, filed on December 12, 2023.

	Year Ended October 31,		\$ Change
	2024	2023	
	(dollars in millions)		
Cash provided by operating activities	\$ 1,407.0	\$ 1,703.3	\$ (296.3)
Cash provided by (used in) investing activities	\$ 1,223.0	\$ (482.1)	\$ 1,705.1
Cash used in financing activities	\$ (181.3)	\$ (1,196.9)	\$ 1,015.6

Cash Provided by Operating Activities

We expect cash from our operating activities to fluctuate as a result of a number of factors, including the timing of our billings and collections, our operating results, and the timing and amount of tax and other liability payments. Cash provided by our operations is dependent primarily upon the payment terms of our license agreements. We generally receive cash from upfront arrangements much sooner than from time-based products revenue, in which the license fee is typically paid either quarterly or annually over the term of the license.

The decrease in cash provided by operating activities was primarily due to higher federal tax payments of \$471.0 million, which included \$187.0 million of fiscal 2023 federal tax payments that were paid in fiscal 2024 as a result of payment deadline extensions due to IRS tax relief for the California winter storms.

Cash Provided by (Used in) Investing Activities

Net cash provided by investing activities was \$1.2 billion for fiscal 2024 compared to net cash used in investing activities of \$482.1 million for fiscal 2023. The increase in cash provided by investing activities was primarily driven by net cash proceeds of \$1.4 billion from the Software Integrity Divestiture, lower cash paid for acquisitions of \$140.7 million, lower purchases of property and equipment of \$66.5 million and higher proceeds from the sales and maturities of investments of \$55.7 million.

Cash Used in Financing Activities

The decrease in cash used in financing activities was primarily due to lower stock repurchases of \$1.2 billion, as we have suspended the Program in connection with the pending Ansys Merger until we reduce our expected debt levels, partially offset by higher taxes paid for net share settlements of \$96.1 million, the payment of costs related to the Bridge Commitment and the Term Loan of \$72.3 million in connection with the Ansys Merger, and lower proceeds from issuance of common stock of \$20.8 million.

Bridge Commitment Letter, Term Loan and Revolving Credit Facilities

On January 15, 2024, we entered into the Bridge Commitment Letter with certain financial institutions that committed to provide, subject to the satisfaction of customary closing conditions, the Bridge Commitment. The Bridge Commitment currently provides for an aggregate principal amount of up to \$10.6 billion. The proceeds of any borrowing under the Bridge Commitment will be used for the purpose of financing a portion of the cash consideration to be paid in the Ansys Merger and paying related fees and expenses in connection with the Ansys Merger and the other transactions contemplated by the Merger Agreement.

The commitments to provide the Bridge Commitment may be terminated in whole or reduced in part, at our discretion. In addition, the Bridge Commitment Letter provides that net cash proceeds received from certain debt and equity issuances or the sale of certain businesses and assets, including the Software Integrity Divestiture, as well as term loan commitments under certain qualifying term loan facilities, will result in mandatory commitment reductions under the Bridge Commitment. On October 3, 2024, we reduced the Bridge Commitment by \$1.1 billion to \$10.6 billion following the closing of the Software Integrity Divestiture.

On February 13, 2024, we entered into the Term Loan Agreement in connection with the financing of the pending Ansys Merger. The Term Loan Agreement provides us with the ability to borrow up to \$4.3 billion at the closing of

the Ansys Merger, subject to the satisfaction of customary closing conditions for similar facilities, for the purpose of financing a portion of the cash consideration to be paid in the Ansys Merger and paying related fees and expenses in connection with the Ansys Merger and the other transactions contemplated by the Merger Agreement.

The Term Loan Agreement provides for two tranches of senior unsecured term loans: a \$1.45 billion tranche (Tranche 1) that matures two years after funding and a \$2.85 billion tranche (Tranche 2) that matures three years after funding. There was no outstanding balance under the Term Loan Agreement as of October 31, 2024.

Under the Term Loan Agreement, borrowings will bear interest on the principal amount outstanding at a floating rate based on, at Synopsys' election, (i) the Adjusted Term SOFR Rate (as defined in the Term Loan Agreement) plus an applicable margin based on the credit ratings of Synopsys ranging from 0.875% to 1.375% (in the case of Tranche 1) or 1.000% to 1.500% (in the case of Tranche 2) or (ii) the ABR (as defined in the Term Loan Agreement) plus an applicable margin based on the credit ratings of Synopsys ranging from 0.000% to 0.375% (in the case of Tranche 1) or 0.000% to 0.500% (in the case of Tranche 2).

On May 14, 2024, a ticking fee began to accrue under the Term Loan Agreement in an amount equal to a rate per annum equal to 0.10% times the actual daily undrawn portion of the commitments in respect of the term loan facility. This ticking fee will accrue until the earlier of (i) termination or expiration of the commitments under the term loan facility or (ii) the funding of the commitments, at which point the accrued amount of the ticking fee will become payable.

The Term Loan Agreement contains a financial covenant requiring that Synopsys maintain a maximum consolidated leverage ratio commencing the last day of the first fiscal quarter ending on or after the completion of the Ansys Merger, as well as other non-financial covenants.

On February 13, 2024, we entered into a Sixth Amendment Agreement (the Sixth Amendment), which amended and restated our previous revolving credit agreement, dated as of December 14, 2022 (as amended and restated, the Revolving Credit Agreement).

Under the Sixth Amendment, certain amendments became effective on February 13, 2024 and certain additional amendments will become effective upon the completion of the Ansys Merger. Upon the effective date, the Sixth Amendment amended the financial covenant to allow netting of the cash proceeds of certain debt incurred to finance the Ansys Merger as well as certain other modifications set forth therein. Upon the completion of the Ansys Merger, the Sixth Amendment, among other things:

- amends the applicable margin used to determine the interest that accrues on loans and the facility fee payable under the revolving credit facility to be based on our credit ratings;
- amends the financial covenant thresholds under the financial covenant in the Revolving Credit Agreement requiring us to maintain a maximum consolidated leverage ratio; and
- amends certain conditions to borrowing, other non-financial covenants and events of default.

The Revolving Credit Agreement provides an unsecured \$850.0 million committed multicurrency revolving credit facility and an unsecured uncommitted incremental revolving loan facility of up to \$150.0 million. The maturity date of the revolving credit facility is December 14, 2027, which may be extended at our option. There was no outstanding balance under the Revolving Credit Agreement as of October 31, 2024 and October 31, 2023.

Interest accrues on dollar-denominated loans at a floating rate based on, at Synopsys' election, (i) the Adjusted Term SOFR Rate (as defined in the Revolving Credit Agreement) plus an applicable margin or (ii) the ABR (as defined in the Revolving Credit Agreement) plus an applicable margin. The applicable margin for Adjusted Term SOFR Rate based loans ranges from 0.785% to 0.975%, based upon Synopsys' consolidated leverage ratio. The applicable margin for ABR based loans is 0.000%. In addition to the interest on any outstanding loans, Synopsys is also required to pay a facility fee on the entire portion of the revolving credit facility ranging from 0.09% to 0.15% based on Synopsys' consolidated leverage ratio on the daily amount of the revolving commitment.

Subject to the completion of the Ansys Merger, interest under the Revolving Credit Agreement will accrue on dollar-denominated loans at a floating rate based on, at Synopsys' election, (i) the Adjusted Term SOFR Rate plus an applicable margin based on our credit ratings ranging from 0.795% to 1.200% or (ii) the ABR plus an applicable margin based on our credit ratings ranging from 0.000% to 0.200%. In addition to the interest on any outstanding loans, Synopsys will also be required to pay a facility fee on the entire portion of the revolving credit facility ranging from 0.080% to 0.175% based on the credit ratings of Synopsys on the daily amount of the revolving commitment.

[Table of Contents](#)

The Revolving Credit Agreement contains a financial covenant requiring us to maintain a maximum consolidated leverage ratio, as well as other non-financial covenants. As of October 31, 2024, we were in compliance with the financial covenant.

In July 2018, we entered into a 12-year 220.0 million Renminbi (approximately \$33.0 million) credit agreement with a lender in China to support our facilities expansion. Borrowings bear interest at a floating rate based on the 5-year Loan Prime Rate plus 0.74%. As of October 31, 2024, we had a \$15.6 million outstanding balance under the agreement.

See Note 11. *Bridge Commitment Letter, Term Loan and Revolving Credit Facilities* of the *Notes to Consolidated Financial Statements* in this Annual Report for further discussion.

Stock Repurchase Program

In fiscal 2022, our Board of Directors approved a stock repurchase program (the Program) with authorization to purchase up to \$1.5 billion of our common stock. As of October 31, 2024, \$194.3 million remained available for future stock repurchases under the Program. In connection with the pending Ansys Merger, we have suspended our stock repurchase program until we reduce our expected debt levels.

The IR Act was enacted in the United States on August 16, 2022. The IR Act imposes a 1% excise tax on the fair market value of stock repurchases made by covered corporations after December 31, 2022. The total taxable value of shares repurchased is reduced by the fair market value of any newly issued shares during the taxable year. As of October 31, 2024, this does not have any impact on our consolidated financial statements. Risks related to the IR Act are described in Part I, Item 1A, *Risk Factors*.

Material Cash Requirements

Our material cash requirements include the following contractual and other obligations.

Leases

We have operating lease arrangements for office space, data center, equipment and other corporate assets. As of October 31, 2024, we had lease payment obligations, net of immaterial sublease income, of \$631.0 million, with \$93.2 million payable within 12 months.

Purchase Obligations

Purchase obligations represent an estimate of all open purchase orders and contractual obligations in the ordinary course of business for which we have not received the goods or services. As of October 31, 2024, we had \$650.0 million of purchase obligations, with \$558.5 million payable within 12 months. Although open purchase orders are considered enforceable and legally binding, the terms may allow us the option to cancel, reschedule and adjust our requirements based on our business needs prior to the delivery of goods or performance of services.

Term Loan

Refer to "Bridge Commitment Letter, Term Loan and Revolving Credit Facilities" under Item 7, *Management's Discussion and Analysis of Financial Condition and Results of Operations* included in this Annual Report for more information.

Long Term Accrued Income Taxes

As of October 31, 2024, we had \$18.8 million of long-term accrued income taxes which represent uncertain tax benefits. Currently, a reasonably reliable estimate of timing of payments related to uncertain tax benefits in individual years beyond fiscal 2024 cannot be made due to uncertainties in timing of the commencement and settlement of potential tax audits.

Item 7A. Quantitative and Qualitative Disclosures About Market Risk

We are exposed to financial market risks, primarily due to changes in interest rates, foreign currency exchange rates, and non-marketable equity security price. None of market risk sensitive instruments are held for speculative trading purposes.

Interest Rate Risk. The primary objective of our investment activities is to preserve the invested principal while maximizing yields without significantly increasing risk exposure. To achieve this objective, we maintain our portfolio of investments in a mix of tax-exempt and taxable instruments that meet high credit quality standards, as specified in our investment policy. Our policy also limits the amount of credit exposure to any one issue, issuer and type of instrument.

Our exposure to market risk for changes in interest rates relates to our cash, cash equivalents, short-term investments, and outstanding debt. As of October 31, 2024, all of our cash, cash equivalents, and debt were at short-term variable or fixed interest rates. As of October 31, 2024, we had short term fixed income investment portfolio of \$153.9 million. These securities, as with all fixed income instruments, are subject to interest rate risk and will decline in value if market interest rates increase. While par value generally approximates fair value on variable instruments, rising interest rates over time would increase both our interest income and our interest expense.

Our cash equivalents and debt by fiscal year of expected maturity and average interest rates as of October 31, 2024 are as follows:

	Maturing in Year Ending					Total	Fair Value
	2025	2026	2027	2028	2029 and thereafter		
	(in thousands)						
Cash & Cash equivalents	\$ 3,778,164					\$ 3,778,164	\$ 3,778,164
Approx. average interest rate	3.56 %						
Short-term investments	\$ 57,156	\$ 58,484	\$ 27,380	\$ 4,260	\$ 6,589	\$ 153,869	\$ 153,869
Approx. average coupon rate	3.25 %	4.17 %	4.29 %	4.43 %	5.37 %		
Short-term debt (variable rate):							
Credit Facility in China					\$ 15,601	\$ 15,601	\$ 15,601
Average interest rate					LPR + .74% of such rate		

Foreign Currency Risk. We operate internationally and are exposed to potentially adverse movements in currency exchange rates. The functional currency of the majority of our active foreign subsidiaries is the foreign subsidiary's local currency. A weakening U.S. dollar relative to other currencies increases expenses of our foreign subsidiaries when they are translated into U.S. dollars in our consolidated statements of income. Likewise, a strengthening of the U.S. dollar relative to other currencies, including the renminbi or Yen, reduces revenue of our foreign subsidiaries upon translation and consolidation. If the U.S. dollar continues to strengthen, this could adversely affect our financial condition and operating results. In addition, increased international sales in the future may result in greater foreign currency denominated sales, increasing our foreign currency risk. Our operating expenses incurred outside the United States and denominated in foreign currencies are increasing and are subject to fluctuations due to changes in foreign currency exchange rates. If we are not able to successfully hedge against the risks associated with foreign currency fluctuations, our financial condition and operating results could be adversely affected. We enter into hedges in the form of foreign currency forward contracts to reduce our exposure to foreign currency rate changes on non-functional currency denominated forecasted transactions and balance sheet positions including: (1) certain assets and liabilities, (2) shipments forecasted to occur within approximately one month, (3) future billings and revenue on previously shipped orders, and (4) certain future intercompany invoices denominated in foreign currencies. The foreign currency contracts are carried at fair value and denominated in various currencies as listed in the tables below. The duration of forward contracts usually ranges from 2 months to 29 months. See Note 2. *Summary of Significant Accounting Policies and Basis of Presentation* and Note 9. *Financial Assets and Liabilities* of the *Notes to Consolidated Financial Statements* in this Annual Report for a description of our accounting for foreign currency contracts.

[Table of Contents](#)

The success of our hedging activities depends upon the accuracy of our estimates of various balances and transactions denominated in non-functional currencies. Exchange rates are subject to significant and rapid fluctuations due to a number of factors, including interest rate changes and political and economic uncertainty. Therefore, we cannot predict the prospective impact of exchange rate fluctuations. To the extent our estimates are correct, gains and losses on our foreign currency contracts will be offset by corresponding losses and gains on the underlying transactions. For example, if the Euro were to depreciate by 10% compared to the U.S. dollar prior to the settlement of the Euro forward contracts listed in the table below as of October 31, 2024, the fair value of the contracts would decrease by approximately \$16.4 million, and we would be required to pay approximately \$16.4 million to the counterparty upon contract maturity. At the same time, the U.S. dollar value of our Euro-based expenses would decline, resulting in positive cash flow of approximately \$16.4 million that would offset the loss and negative cash flow on the maturing forward contracts.

If estimates of our balances and transactions prove inaccurate, we will not be completely hedged, and we will record gains or losses, depending upon the nature and extent of such inaccuracy. Although we engage in foreign currency hedging activity, we may be unable to hedge all of our foreign currency risk, which could have a negative impact on our results of operations.

We enter into foreign exchange forward contracts with financial institutions and have not experienced nonperformance by counterparties. Further, we anticipate performance by all counterparties to such agreements.

Information about the gross notional values of our foreign currency contracts as of October 31, 2024 is as follows:

	Gross Notional Amount in U.S. Dollars	Average Contract Rate
	(in thousands)	
Forward Contract Values:		
Indian rupee	\$ 589,799	86.973
Japanese yen	469,566	151.041
Euro	164,701	1.100
Canadian dollar	157,536	1.369
Chinese renminbi	122,191	7.013
Korean won	68,720	1,342.594
Taiwanese dollar	64,599	32.042
Israel shekel	34,919	3.704
British pound sterling	10,055	1.257
Singapore dollar	2,557	1.328
Swiss franc	1,698	0.883
	<u>\$ 1,686,341</u>	

Equity Price Risk. Our non-marketable equity securities investments totaled \$15.7 million and \$19.1 million as of October 31, 2024 and 2023, respectively. Our strategic investments include privately-held companies that are considered to be in the start-up or development stages and have a higher inherent risk. Specifically, the technologies or products these companies have under development are typically in the early stages and may never materialize, which could result in a loss of a substantial part of our initial investment in these companies. These investments could be impaired if the carrying value exceeds the fair value and is not expected to recover. The evaluation of these investments is based on information provided by these companies, which is not subject to the same disclosure regulations as U.S. publicly traded companies and as such, the basis for these evaluations is subject to the timing and accuracy of the data provided.

Item 8. Financial Statements and Supplementary Data

Report of Independent Registered Public Accounting Firm

To the Stockholders and Board of Directors

Synopsys, Inc.:

Opinions on the Consolidated Financial Statements and Internal Control Over Financial Reporting

We have audited the accompanying consolidated balance sheets of Synopsys, Inc. and subsidiaries (the Company) as of November 2, 2024 and October 28, 2023, the related consolidated statements of income, comprehensive income, stockholders' equity, and cash flows for each of the fiscal years in the three-year period ended November 2, 2024, and the related notes (collectively, the consolidated financial statements). We also have audited the Company's internal control over financial reporting as of November 2, 2024, based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

In our opinion, the consolidated financial statements referred to above present fairly, in all material respects, the financial position of the Company as of November 2, 2024 and October 28, 2023, and the results of its operations and its cash flows for each of the fiscal years in the three-year period ended November 2, 2024, in conformity with U.S. generally accepted accounting principles. Also in our opinion, the Company maintained, in all material respects, effective internal control over financial reporting as of November 2, 2024 based on criteria established in Internal Control – Integrated Framework (2013) issued by the Committee of Sponsoring Organizations of the Treadway Commission.

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 the accompanying Management's Report on Internal Control Over Financial Reporting. Our responsibility is to express an opinion on the Company's consolidated financial statements and an opinion 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 (1) pertain to the maintenance of records that, in reasonable detail,

accurately and fairly reflect the transactions and dispositions of the assets of the company; (2) 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 (3) 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 Matter

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: (1) relates to accounts or disclosures that are material to the consolidated financial statements and (2) involved our especially challenging, subjective, or complex judgments. The communication of a critical audit matter 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.

Evaluation of the Company's analysis of terms and conditions in software and intellectual property license contracts with customers

As discussed in Notes 2 and 6 to the consolidated financial statements, the Company generates revenue from the sale of products that include software and intellectual property (IP) licenses, hardware products, maintenance and services. The Company's contracts with customers often include promises to transfer multiple products and services to a customer. Arrangements with customers can involve hundreds of products and various license rights, and customers negotiate with the Company over many aspects of these arrangements. The Company's customers often request a broader portfolio of solutions, support and services and seek more favorable terms such as expanded license usage, future purchase rights and other unique rights at an overall lower total cost. The Company recognized total revenue of \$6,127.4 million for the fiscal year ended November 2, 2024, which included revenue related to software and IP licenses.

We identified the evaluation of the Company's analysis of terms and conditions in significant software and IP license contracts with customers and their effect on revenue recognition as a critical audit matter. Complex auditor judgment was required to assess the Company's judgments made in applying revenue recognition requirements to certain terms and conditions.

The following are the primary procedures we performed to address this critical audit matter. We evaluated the design and tested the operating effectiveness of certain internal controls related to the Company's revenue recognition process, including the Company's analysis of terms and conditions in software and IP license contracts with customers and their effect on revenue recognition. We tested certain software and IP license customer contracts by inspecting the underlying customer agreements and evaluating the Company's assessment of the contractual terms and conditions in accordance with revenue recognition requirements. For a selection of software and IP license contracts with customers entered during the year, we inquired of personnel outside of the accounting function to corroborate our understanding of certain terms and conditions.

/s/ KPMG LLP

We have served as the Company's auditor since 1992.

Santa Clara, California
December 18, 2024

SYNOPSYS, INC.
CONSOLIDATED BALANCE SHEETS
(In thousands, except par value amounts)

	October 31,	
	2024	2023
ASSETS		
Current assets:		
Cash and cash equivalents	\$ 3,896,532	\$ 1,433,966
Short-term investments	153,869	151,639
Total cash, cash equivalents and short-term investments	4,050,401	1,585,605
Accounts receivable, net	934,470	856,660
Inventories	361,849	325,590
Prepaid and other current assets	1,122,946	548,115
Current assets of discontinued operations	—	114,654
Total current assets	6,469,666	3,430,624
Property and equipment, net	563,006	549,837
Operating lease right-of-use assets, net	565,917	559,923
Goodwill	3,448,850	3,346,065
Intangible assets, net	195,164	239,577
Deferred income taxes	1,247,258	853,526
Other long-term assets	583,700	444,820
Long-term assets of discontinued operations	—	908,759
Total assets	\$ 13,073,561	\$ 10,333,131
LIABILITIES, REDEEMABLE NON-CONTROLLING INTEREST AND STOCKHOLDERS' EQUITY		
Current liabilities:		
Accounts payable and accrued liabilities	\$ 1,163,592	\$ 1,059,914
Operating lease liabilities	94,791	79,832
Deferred revenue	1,391,737	1,559,461
Current liabilities of discontinued operations	—	286,244
Total current liabilities	2,650,120	2,985,451
Long-term operating lease liabilities	574,065	579,686
Long-term deferred revenue	340,831	150,827
Long-term debt	15,601	18,078
Other long-term liabilities	469,738	381,531
Long-term liabilities of discontinued operations	—	33,257
Total liabilities	4,050,355	4,148,830
Redeemable non-controlling interest	30,000	31,043
Stockholders' equity:		
Preferred stock, \$0.01 par value: 2,000 shares authorized; none outstanding	—	—
Common stock, \$0.01 par value: 400,000 shares authorized; 154,112 and 152,053 shares outstanding, respectively	1,541	1,521
Capital in excess of par value	1,211,206	1,276,152
Retained earnings	8,984,105	6,741,699
Treasury stock, at cost: 3,148 and 5,207 shares, respectively	(1,025,770)	(1,675,650)
Accumulated other comprehensive income (loss)	(180,380)	(196,414)
Total Synopsys stockholders' equity	8,990,702	6,147,308
Non-controlling interest	2,504	5,950
Total stockholders' equity	8,993,206	6,153,258
Total liabilities, redeemable non-controlling interest and stockholders' equity	\$ 13,073,561	\$ 10,333,131

See the accompanying *Notes to Consolidated Financial Statements*.

SYNOPSYS, INC.
CONSOLIDATED STATEMENTS OF INCOME
(In thousands, except per share amounts)

	Year Ended October 31,		
	2024	2023	2022
Revenue:			
Time-based products	\$ 3,224,299	\$ 3,016,256	\$ 2,657,724
Upfront products	1,802,222	1,400,125	1,221,240
Total products revenue	5,026,521	4,416,381	3,878,964
Maintenance and service	1,100,915	901,633	736,750
Total revenue	6,127,436	5,318,014	4,615,714
Cost of revenue:			
Products	770,238	697,686	594,007
Maintenance and service	367,055	287,876	259,332
Amortization of acquired intangible assets	107,996	45,281	44,674
Total cost of revenue	1,245,289	1,030,843	898,013
Gross margin	4,882,147	4,287,171	3,717,701
Operating expenses:			
Research and development	2,082,360	1,849,935	1,589,846
Sales and marketing	859,342	724,934	642,729
General and administrative	568,496	376,677	313,554
Amortization of acquired intangible assets	16,238	9,295	11,637
Restructuring charges	—	53,091	11,221
Total operating expenses	3,526,436	3,013,932	2,568,987
Operating income	1,355,711	1,273,239	1,148,714
Interest and other income (expense), net	158,147	32,231	(45,262)
Income before income taxes	1,513,858	1,305,470	1,103,452
Provision (benefit) for income taxes	99,718	90,188	139,385
Net income from continuing operations	1,414,140	1,215,282	964,067
Income from discontinued operations, net of income taxes	821,670	2,843	14,369
Net income	2,235,810	1,218,125	978,436
Less: Net income (loss) attributed to non-controlling interest and redeemable non-controlling interest	(27,570)	(11,763)	(6,158)
Net income attributed to Synopsys	\$ 2,263,380	\$ 1,229,888	\$ 984,594
Net income attributed to Synopsys:			
Continuing operations	\$ 1,441,710	\$ 1,227,045	\$ 970,225
Discontinued operations	821,670	2,843	14,369
Net income	\$ 2,263,380	\$ 1,229,888	\$ 984,594
Net income per share attributed to Synopsys - basic:			
Continuing operations	\$ 9.41	\$ 8.06	\$ 6.34
Discontinued operations	5.37	0.02	0.10
Basic net income per share	\$ 14.78	\$ 8.08	\$ 6.44
Net income per share attributed to Synopsys - diluted:			
Continuing operations	\$ 9.25	\$ 7.91	\$ 6.20
Discontinued operations	5.26	0.01	0.09
Diluted net income per share	\$ 14.51	\$ 7.92	\$ 6.29
Shares used in computing per share amounts:			
Basic	153,138	152,146	153,002
Diluted	155,944	155,195	156,485

See the accompanying *Notes to Consolidated Financial Statements*.

SYNOPSYS, INC.
CONSOLIDATED STATEMENTS OF COMPREHENSIVE INCOME
(In thousands)

	Year Ended October 31,		
	2024	2023	2022
Net income	\$ 2,235,810	\$ 1,218,125	\$ 978,436
Other comprehensive income (loss):			
Change in foreign currency translation adjustment	8,150	(13,912)	(108,145)
Change in unrealized gains (losses) on available-for-sale securities, net of tax of \$0 for periods presented	1,460	1,513	(2,353)
Cash flow hedges:			
Deferred gains (losses), net of tax of \$(3,052), \$(8,940), and \$28,416 for fiscal years 2024, 2023 and 2022, respectively	9,625	24,986	(79,069)
Reclassification adjustment on deferred (gains) losses included in net income, net of tax of \$(446), \$(10,053), and \$(1,342) for fiscal years 2024, 2023 and 2022, respectively	(3,201)	25,276	4,894
Other comprehensive income (loss), net of tax effects	16,034	37,863	(184,673)
Comprehensive income	2,251,844	1,255,988	793,763
Less: Net income (loss) attributed to non-controlling interest and redeemable non-controlling interest	(27,570)	(11,763)	(6,158)
Comprehensive income attributed to Synopsys	\$ 2,279,414	\$ 1,267,751	\$ 799,921

See the accompanying *Notes to Consolidated Financial Statements*.

SYNOPSYS, INC.
CONSOLIDATED STATEMENTS OF STOCKHOLDERS' EQUITY
(In thousands)

	Common Stock		Capital in Excess of Par Value	Retained Earnings	Treasury Stock	Accumulated Other Comprehensive Income (Loss)	Total Synopsys Stockholders' Equity	Non-controlling Interest	Stockholders' Equity
	Shares	Amount							
Balance at October 31, 2021	153,062	\$ 1,531	\$ 1,576,363	\$ 4,549,713	\$ (782,866)	\$ (49,604)	\$ 5,295,137	\$ 3,806	\$ 5,298,943
Net income				984,594			984,594	(1,306)	983,288
Other comprehensive income (loss), net of tax effects						(184,673)	(184,673)		(184,673)
Purchases of treasury stock	(3,609)	(36)	36		(1,135,000)		(1,135,000)		(1,135,000)
Equity forward contract, net			35,000				35,000		35,000
Common stock issued, net of shares withheld for employee taxes	2,922	29	(581,001)		644,911		63,939		63,939
Stock-based compensation			456,728				456,728	2,301	459,029
Balance at October 31, 2022	152,375	\$ 1,524	\$ 1,487,126	\$ 5,534,307	\$ (1,272,955)	\$ (234,277)	\$ 5,515,725	\$ 4,801	\$ 5,520,526
Net income				1,229,888			1,229,888	(1,761)	1,228,127
Other comprehensive income (loss), net of tax effects						37,863	37,863		37,863
Purchases of treasury stock	(2,992)	(30)	30		(1,160,724)		(1,160,724)		(1,160,724)
Equity forward contract, net			(45,000)				(45,000)		(45,000)
Common stock issued, net of shares withheld for employee taxes	2,670	27	(725,211)	(19,108)	758,029		13,737		13,737
Stock-based compensation			558,078				558,078	5,214	563,292
Adjustments to redeemable non-controlling interest				(3,388)			(3,388)		(3,388)
Recognition of non-controlling interest upon issuance of subsidiary stock			1,129				1,129	(2,304)	(1,175)
Balance at October 31, 2023	152,053	\$ 1,521	\$ 1,276,152	\$ 6,741,699	\$ (1,675,650)	\$ (196,414)	\$ 6,147,308	\$ 5,950	\$ 6,153,258
Net income				2,263,380			2,263,380	(5,552)	2,257,828
Other comprehensive income (loss), net of tax effects						16,034	16,034		16,034
Purchases of treasury stock	(74)	(1)	1		(45,000)		(45,000)		(45,000)
Equity forward contract, net			45,000				45,000		45,000
Common stock issued, net of shares withheld for employee taxes	2,133	21	(799,210)		694,880		(104,309)		(104,309)
Stock-based compensation			687,765				687,765	4,551	692,316
Adjustments to redeemable non-controlling interest				(20,974)			(20,974)		(20,974)
Recognition of non-controlling interest upon issuance of subsidiary stock			1,498				1,498	(2,445)	(947)
Balance at October 31, 2024	154,112	\$ 1,541	\$ 1,211,206	\$ 8,984,105	\$ (1,025,770)	\$ (180,380)	\$ 8,990,702	\$ 2,504	\$ 8,993,206

See the accompanying *Notes to Consolidated Financial Statements*.

SYNOPSYS, INC.
CONSOLIDATED STATEMENTS OF CASH FLOWS
(In thousands)

	Year Ended October 31,		
	2024	2023	2022
Cash flows from operating activities:			
Net income	\$ 2,235,810	\$ 1,218,125	\$ 978,436
Adjustments to reconcile net income to net cash provided by operating activities:			
Amortization and depreciation	295,065	247,120	228,405
Reduction of operating lease right-of-use assets	97,273	97,705	89,541
Amortization of capitalized costs to obtain revenue contracts	73,587	82,190	73,026
Stock-based compensation	692,316	563,292	459,029
Allowance for credit losses	19,724	19,932	(3,477)
Gain on sale of strategic investments	(55,077)	—	—
Gain on divestitures, net of transaction costs	(868,830)	—	—
Amortization of bridge financing costs	33,677	—	—
Deferred income taxes	(407,649)	(211,045)	(36,913)
Other	(1,295)	13,295	10,188
Net changes in operating assets and liabilities, net of effects from acquisitions and dispositions:			
Accounts receivable	(103,460)	(178,432)	(251,390)
Inventories	(51,449)	(123,752)	1,320
Prepaid and other current assets	(410,432)	(106,396)	(89,983)
Other long-term assets	(168,255)	(100,618)	(15,283)
Accounts payable and accrued liabilities	187,564	170,496	(34,066)
Operating lease liabilities	(96,966)	(73,281)	(85,828)
Income taxes	(73,215)	198,078	1,644
Deferred revenue	8,641	(113,435)	414,251
Net cash provided by operating activities	1,407,029	1,703,274	1,738,900
Cash flows from investing activities:			
Proceeds from maturities and sales of short-term investments	138,961	130,435	93,696
Purchases of short-term investments	(136,821)	(131,079)	(97,245)
Proceeds from sales of strategic investments	55,696	8,492	582
Purchases of strategic investments	(1,293)	(435)	(7,000)
Purchases of property and equipment, net	(123,161)	(189,618)	(136,589)
Acquisitions, net of cash acquired	(156,947)	(297,692)	(422,374)
Proceeds from business divestiture, net of cash divested	1,446,578	—	—
Capitalization of software development costs	—	(2,204)	(2,493)
Other	—	—	(1,200)
Net cash provided by (used in) investing activities	1,223,013	(482,101)	(572,623)
Cash flows from financing activities:			
Repayment of debt	(2,607)	(2,603)	(76,838)
Payment of bridge financing and term loan costs	(72,265)	—	—
Issuances of common stock	232,212	252,986	237,956
Payments for taxes related to net share settlement of equity awards	(337,541)	(241,408)	(174,005)
Purchase of equity forward contract	—	(45,000)	—
Purchases of treasury stock	—	(1,160,724)	(1,100,000)
Other	(1,096)	(122)	(3,413)
Net cash used in financing activities	(181,297)	(1,196,871)	(1,116,300)
Effect of exchange rate changes on cash, cash equivalents and restricted cash	8,797	(2,979)	(65,296)
Net change in cash, cash equivalents and restricted cash	2,457,542	21,323	(15,319)
Cash, cash equivalents and restricted cash, beginning of year, including cash from discontinued operations	1,441,187	1,419,864	1,435,183
Cash, cash equivalents and restricted cash, end of year, including cash from discontinued operations	3,898,729	1,441,187	1,419,864
Less: Cash, cash equivalents and restricted cash from discontinued operations	—	4,947	4,269

[Table of Contents](#)

Cash, cash equivalents and restricted cash from continuing operations	\$ 3,898,729	\$ 1,436,240	\$ 1,415,595
Supplemental disclosure of cash flow information:			
Cash paid for income taxes during the year:	\$ 680,064	\$ 97,956	\$ 167,768
Interest payments during the year:	\$ 814	\$ 996	\$ 1,258
Non-cash activities:			
Purchase of property and equipment included in accounts payable	\$ 32,014	\$ 21,672	\$ 17,857
Conversion of notes receivable to non-marketable equity securities	\$ —	\$ 2,000	\$ 14,280
Contingent consideration receivable in connection with divestiture	\$ 22,202	\$ —	\$ —

See the accompanying *Notes to Consolidated Financial Statements*.

SYNOPSYS, INC.
NOTES TO CONSOLIDATED FINANCIAL STATEMENTS

Note 1. Description of Business

Synopsys, Inc. (Synopsys, we, our or us) delivers trusted and comprehensive silicon to systems design solutions, from electronic design automation (EDA), including system verification and validation solutions, to silicon intellectual property (IP). We partner closely with semiconductor and systems customers across a wide range of industries to maximize their engineering and research and development capacity. We are catalyzing the era of pervasive intelligence, powering innovation today that ignites the ingenuity of tomorrow.

We are a global leader in supplying the mission-critical EDA software that engineers use to design and test integrated circuits (ICs), also known as chips or silicon, and we are pioneering artificial intelligence (AI) driven chip design across the full-stack EDA suite to improve efficiency and accelerate the design, verification testing and manufacturing of advanced digital and analog chips. We provide software and hardware used to validate the electronic systems that incorporate chips and the software that runs on them, including cloud-based digital design flow to boost chip-design development productivity. We also provide technical services and support to help our customers develop advanced chips and electronic systems. These products and services are part of our Design Automation segment.

We also offer a broad and comprehensive portfolio of semiconductor IP solutions, which are pre-designed circuits that engineers use as components of larger chip designs to reduce integration risk and speed time to market. Our high quality, silicon-proven semiconductor IP includes logic libraries, embedded memories, analog IP, wired and wireless interface IP, security IP, embedded processors and subsystems. To accelerate IP integration and silicon bring-up, our IP Accelerated initiative provides architecture design expertise, hardening, and signal and power integrity analysis. These products and services are part of our Design IP segment.

Note 2. Summary of Significant Accounting Policies and Basis of Presentation

Basis of Presentation and Principles of Consolidation. Historically, our fiscal years have been 52- or 53-week periods ending on the Saturday nearest to October 31. Fiscal 2024 was a 53-week year ending on November 2, 2024. Fiscal 2023 and 2022 were 52-week years and ended on October 28, 2023 and October 29, 2022, respectively. For presentation purposes, the consolidated financial statements and accompanying notes refer to the closest calendar month end. We have changed our fiscal year end from the Saturday nearest to October 31 and consisting of 52 or 53 fiscal weeks to a fiscal year end of October 31 each year. The fiscal year change becomes effective with our fiscal 2025, which began on November 3, 2024. Our fiscal quarters will end on January 31, April 30, July 31 and October 31 of each year.

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

Use of Estimates. To prepare financial statements in conformity with U.S. GAAP, management must make estimates and assumptions that affect the amounts reported in the consolidated financial statements and accompanying notes. Actual results could differ from these estimates and could have a material impact on our operating results and financial position.

Software Integrity Divestiture. On May 5, 2024, we entered into an Equity Purchase Agreement, by and between Synopsys and Sapphire Software Buyer, Inc., an entity controlled by funds affiliated with Clearlake Capital Group, L.P. and Francisco Partners (together, the Sponsors). On September 30, 2024, we completed the previously announced sale of our Software Integrity business to entities controlled by funds affiliated with the Sponsors (the Software Integrity Divestiture). We previously determined that the Software Integrity Divestiture met the criteria to be disclosed as discontinued operations in the second quarter of fiscal 2024 as it represented a significant strategic shift that had a major effect on our operations and financial results. The results of the Software Integrity business, including the gain on divestiture, are presented as discontinued operations in the consolidated statements of income, and as such, have been excluded from both continuing operations and segment results for all periods presented. Further, we reclassified the assets and liabilities of the Software Integrity business as assets and liabilities of discontinued operations in the consolidated balance sheets as of October 31, 2023. The consolidated statements of cash flows are presented on a consolidated basis for both continuing operations and discontinuing operations. We did not allocate any general corporate overhead to the Software Integrity business. Unless otherwise noted, reference within these *Notes to Consolidated Financial Statements* relates to continuing

operations. See Note 3. *Discontinued Operations* of the *Notes to Consolidated Financial Statements* in this Annual Report.

Segment Reporting. As a result of the Software Integrity Divestiture, we changed our reportable segment from the three reportable segments to the following two reportable segments: (1) Design Automation, which includes our advanced silicon design, verification products and services, system integration products and services, digital, custom and FPGA IC design software, verification software and hardware products, manufacturing software products and other; and (2) Design IP, which includes our interface, foundation, security, and embedded processor IP, IP subsystems, and IP implementation services. Our Chief Operating Decision Maker (CODM), our Chief Executive Officer (CEO) reviews disaggregated segment information, assess performance against our key growth strategies and allocates resources. See Note 20. *Segment Disclosure* of the *Notes to Consolidated Financial Statements* in this Annual Report. Prior period segment results and related disclosures have been reclassified to conform to the current period segment presentation.

Cash Equivalents and Short-term Investments. We consider all highly liquid investments with original maturities of three months or less at the date of purchase to be cash equivalents. Our investments in debt securities with remaining maturities greater than three months at the date of purchase are designated as available-for-sale securities as we may convert these investments into cash at any time to fund general operations, and included in short-term investments in the consolidated balance sheets. Our debt securities generally have an effective maturity term of less than three years and are carried at fair value, with unrealized gains and losses included in the consolidated balance sheets as a component of accumulated other comprehensive income (loss). For available-for-sale debt securities in an unrealized loss position, we evaluate whether a current expected credit loss exists based on available information relevant to the credit rating of the security, current economic conditions and reasonable and supportable forecasts. The allowance for credit loss is recorded in interest and other income (expense), net, in the consolidated statements of income, not to exceed the amount of the unrealized loss. Any excess unrealized loss other than the credit loss is recognized in accumulated other comprehensive income or loss in the stockholders' equity section of the consolidated balance sheets. The cost of securities sold is based on the specific identification method and realized gains and losses are included in interest and other income (expense), net. See Note 9. *Financial Assets and Liabilities* of the *Notes to Consolidated Financial Statements* in this Annual Report.

Investments in Equity Securities. We hold equity securities in privately held companies for the promotion of business and strategic objectives. We account for these investments using either the measurement alternative approach when the fair value of the investment is not readily determinable and we do not have the ability to exercise significant influence, or the equity method of accounting when it is determined that we have the ability to exercise significant influence. Investments accounted for using the measurement alternative approach are initially recorded at cost and adjusted for changes in fair value from observable transactions. For investments accounted for using the equity method of accounting, we record our proportionate share of the investee's income or loss to interest and other income (expense), net, in our consolidated statements of income. These investments are subject to a periodic impairment review, and are included in other long-term assets in the consolidated balance sheets.

Accounts Receivable, Net. The balances consist of billed accounts receivable and current portion of unbilled accounts receivable. Trade accounts receivables are recorded at the invoiced amount and do not bear interest.

Allowance for Credit Losses. We maintain an allowance for credit losses for expected uncollectible accounts receivable and contract assets, which is recorded as an offset to accounts receivable or contract assets and provisions for credit losses are recorded in general and administrative expense in the consolidated statements of income. The allowance for current expected credit losses is based on a review of customer accounts and considers historical credit loss information that is adjusted for current conditions and reasonable and supportable forecasts. The allowance for credit losses is reviewed on a quarterly basis to assess the adequacy of the allowance. The following table presents the changes in the allowance for credit losses:

Fiscal Year	Balance at Beginning of Period		Provisions	Write-offs/Adjustments		Balance at End of Period
	(in thousands)					
	2024	\$ 50,366	\$ 19,286	\$ (5,609)	\$ 64,043	
2023	\$ 38,586	\$ 18,345	\$ (6,565)	\$ 50,366		
2022	\$ 27,034	\$ 11,486	\$ 66	\$ 38,586		

Inventories. Inventories are computed at standard costs which approximate actual costs, on a first-in, first-out basis and valued at the lower of cost or net realizable value. Inventories primarily include components and finished goods for complex emulation and prototyping hardware systems. The valuation process includes a review of the forecasts based upon future demand and market conditions. Inventory provisions are recorded when the costs are determined to be in excess of anticipated demand or considered obsolete. Inventory provisions are impacted by market and economic conditions, technology changes, new product introductions and changes in strategic direction, and require estimates that may include uncertain elements.

Fair Values of Financial Instruments. Our cash equivalents, short-term investments and foreign currency contracts are carried at fair value. The fair value of our accounts receivable and accounts payable approximates the carrying amount due to their short duration. Non-marketable equity securities are accounted for using either the measurement alternative or equity method of accounting. We perform periodic impairment analysis on these non-marketable equity securities. The carrying amount of the short-term and long-term debt approximates the estimated fair value. See Note 10. *Fair Value Measurements* of the *Notes to Consolidated Financial Statements* in this Annual Report.

Foreign Currency Contracts. We operate internationally and are exposed to potentially adverse movements in currency exchange rates. We enter into hedges in the form of foreign currency forward contracts to reduce our exposure to foreign currency rate changes on non-functional currency denominated forecasted transactions and balance sheet positions. The assets or liabilities associated with the forward contracts are recorded at fair value in other current assets or accrued liabilities in the consolidated balance sheets.

The accounting for gains and losses resulting from changes in fair value depends on the use of the foreign currency forward contract and whether it is designated and qualifies for hedge accounting. See Note 9. *Financial Assets and Liabilities* of the *Notes to Consolidated Financial Statements* in this Annual Report.

Concentration of Credit Risk. Financial instruments that potentially subject us to significant concentrations of credit risk consist principally of cash equivalents, short-term investments, foreign currency contracts, and trade accounts receivable. We maintain cash equivalents primarily in highly rated taxable and tax-exempt money market funds located in the U.S. and in various overseas locations. Our short-term investments include a variety of financial instruments, such as corporate debt and municipal securities, U.S. Treasury and Government agency securities. By policy, we limit the amount of credit exposure with any one issue, issuer and type of instrument.

We sell our products worldwide primarily to customers in the global electronics market. We perform on-going credit evaluations of our customers' financial condition and do not require collateral. We establish reserves for potential credit losses and such losses have been within management's expectations and have not been material in any year presented.

Income Taxes. We account for income taxes using the asset and liability method. Deferred tax assets and liabilities are recognized for the future tax consequences attributable to differences between the financial statement carrying amounts of existing assets and liabilities and their respective tax bases and operating loss and tax credit carryforwards. Deferred tax assets and liabilities are measured using enacted tax rates expected to apply to taxable income in the years in which those temporary differences are expected to be recovered or settled. The effect on deferred tax assets and liabilities of a change in tax rates is recognized in income in the period that includes the enactment date.

We account for uncertainty in income taxes using a two-step approach to recognizing and measuring uncertain tax positions. The first step is to evaluate the tax position for recognition by determining whether it is more likely than not that the position will be sustained on audit, including resolution of related appeals or litigation processes, if any. The second step is to measure the tax benefit as the largest amount which is more than 50% likely of being realized

upon ultimate settlement. An uncertain tax position is considered effectively settled on completion of an examination by a taxing authority if certain other conditions are satisfied.

Property and Equipment. Property and equipment is recorded at cost less accumulated depreciation. Assets, excluding land, are depreciated using the straight-line method over their estimated useful lives. Depreciation expenses were \$162.9 million, \$141.4 million and \$103.9 million in fiscal 2024, 2023 and 2022, respectively. Repair and maintenance costs are expensed as incurred and such costs were \$89.4 million, \$74.4 million and \$65.2 million in fiscal 2024, 2023 and 2022, respectively.

The useful lives of depreciable assets are as follows:

	Useful Life in Years
Computer and other equipment	3 - 8
Buildings	30
Furniture and fixtures	5
Leasehold improvements	Shorter of the lease term or the estimated useful life

Leases. We determine if an arrangement is a lease at inception of the contract, which is the date on which the terms of the contract are agreed to, and the agreement creates enforceable rights and obligations. A contract is or contains a lease when we have the right to control the use of an identified asset for a period of time. The commencement date of the lease is the date that the lessor makes an underlying asset available for use by the lessee. On the commencement date, leases are evaluated for classification and assets and liabilities are recognized based on the present value of lease payments over the lease term.

The lease term used to calculate the lease liability includes options to extend or terminate the lease when it is reasonably certain that the option will be exercised. The right of use (ROU) asset is initially measured as the amount of lease liability, adjusted for any initial lease costs, prepaid lease payments and any lease incentives. Variable lease payments, consisting primarily of reimbursement of costs incurred by lessors for common area maintenance, real estate taxes and insurance, are not included in the lease liability and are recognized as they are incurred.

As most of our leases do not provide an implicit rate, we use the incremental borrowing rate at lease commencement to measure ROU assets and lease liabilities. We use a benchmark senior unsecured yield curve for debt instruments over the similar term, and consider specific credit quality, market conditions, tenor of lease arrangements, and quality of collateral to determine the incremental borrowing rate.

Operating lease expense is generally recognized on a straight-line basis over the lease term. We have elected the practical expedient to account for the lease and non-lease components as a single lease component for the majority of our asset classes. For leases with an initial term of one year or less, we have elected not to record the ROU asset or liability.

Business Combinations. We allocate the purchase price of acquired companies to the tangible and intangible assets acquired and liabilities assumed based on their acquisition-date fair values with the exception of contract assets and contract liabilities (deferred revenue) which are recognized and measured on the acquisition date in accordance with our "Revenue Recognition" policy. The excess of the fair value of purchase consideration over the fair value of these identifiable assets and liabilities is recorded as goodwill. Acquisition-related expenses are recognized separately from the business combination and are expensed as incurred. We include the results of operations of the businesses that are acquired from the acquisition date.

Goodwill. Goodwill represents the excess of the aggregate purchase price over the fair value of the net tangible and identifiable intangible assets acquired by us. All goodwill acquired in a business combination is assigned to one or more reporting units as of acquisition date. We have two reportable segments, and reporting units are determined to be the same as reportable segments. The carrying amount of goodwill at each reporting unit is tested for impairment annually on the first day of the fourth fiscal quarter, or more frequently if facts and circumstances warrant a review. We perform either a qualitative or quantitative assessment for goodwill impairment test. When a quantitative goodwill impairment assessment is performed, we use an income approach based on discounted cash

flow analysis, a market approach based on market multiples, or a combination of both. If the fair value of a reporting unit is less than its carrying value, a goodwill impairment loss is recorded for the difference.

Intangible Assets. Intangible assets consist of acquired technology, certain contract rights, customer relationships, trademarks and trade names, and capitalized software. These intangible assets are acquired through business combinations, direct purchases, or internally developed capitalized software. Intangible assets are amortized on a straight-line basis over their estimated useful lives which range from one to thirteen years.

We review the carrying values of long-lived assets including intangible assets whenever events or changes in circumstances indicate that the carrying value may not be fully recoverable. Recoverability of long-lived assets is measured by comparing the carrying value of such asset group to the future undiscounted cash flows that asset group is expected to generate. If the undiscounted future cash flow is less than the carrying amount of the asset group, we recognize an impairment loss based on the excess of the carrying amount over the fair value of the asset group.

Redeemable Non-controlling Interest. Non-controlling interest that is not solely redeemable within our control is reported as temporary equity in our consolidated balance sheets. The carrying value of the redeemable non-controlling interest equals the redemption value at the end of each reporting period, after giving effect to the change from the net income (loss) attributable to the redeemable non-controlling interest. We remeasure the redemption value of the non-controlling interest on a quarterly basis and changes in the estimated redemption value are recognized through retained earnings and may also impact the net income or loss attributable to common stockholders of Synopsys if the redemption value falls below a stated threshold. See Note 5. *Business Combinations* of the *Notes to Consolidated Financial Statements* in this Annual Report for more information regarding the redeemable non-controlling interests.

Revenue Recognition. We recognize revenue for the transfer of services or products to customers in an amount that reflects the consideration to which we expect to be entitled in exchange for those services or products. The principle is achieved through the following five-step approach:

- Identification of the contract, or contracts, with the customer
- Identification of the performance obligation in the contract
- Determination of the transaction price
- Allocation of the transaction price to the performance obligations in the contract
- Recognition of revenue when, or as, we satisfy a performance obligation

Nature of Products and Services

We generate revenue from the licensing of our EDA software and IP blocks, as well as sale of hardware products, and maintenance and services. The various types are set forth below.

Electronic Design Automation

Software license revenue consists of fees associated with the licensing of our software primarily through Technology Subscription License (TSL) contracts. TSLs are time-based licenses for a finite term and generally provide the customer with limited rights to receive, or to exchange certain quantities of licensed software for, unspecified future technology. The majority of our arrangements are TSLs due to the nature of our business and customer requirements. In addition to the licenses, the arrangements also include: post-contract customer support, which includes providing frequent updates and upgrades to maintain the utility of the software due to rapid changes in technology; other intertwined services such as multiple copies of the tools; assisting our customers in applying our technology in the customers' development environment; and rights to remix licenses for other licenses. Payments are generally received in equal or near equal installments over the term of the arrangement. We have concluded that our software licenses in TSL contracts are not distinct from our obligation to provide unspecified software updates to the licensed software throughout the license term. Such updates represent inputs to a single, combined performance obligation, commencing upon the later of the arrangement effective date or transfer of control to the software license. Remix rights are not an additional promised good or service in the contract, and where unspecified additional software product rights are part of the contract with the customer, such rights are accounted for as part of

the single performance obligation that includes the licenses, updates, and technical support because such rights are provided for the same period of time and have the same pattern of transfer to the customer over the duration of the subscription term.

Design IP Products

We generally license IP under nonexclusive license agreements that provide usage rights for specific applications. Additionally, for certain IP license agreements, royalties are collected as customers sell their own products that incorporate our IP. These arrangements generally have two distinct performance obligations that consist of transferring the licensed IP and the post contract support service. Support services consist of a stand-ready obligation to provide technical support and software updates over the support term. Revenue allocated to the IP license is recognized at a point in time upon the later of the delivery date or the beginning of the license period, and revenue allocated to support services is recognized ratably over the support term. Royalties are recognized as revenue is earned, generally when the customer sells its products that incorporate our IP.

Hardware

We generally have two performance obligations in arrangements involving the sale of hardware products. The first performance obligation is to transfer the hardware product, which includes embedded software integral to the functionality of the hardware product. The second performance obligation is to provide maintenance on the hardware and our embedded software, including rights to technical support, hardware repairs and software updates that are all provided over the same term and have the same time-based pattern of transfer to the customer. The portion of the transaction price allocated to the hardware product is recognized as revenue at a point in time when control of the hardware is transferred to the customer. We have concluded that control generally transfers upon shipment because the customer has the ability to direct the use of the asset and an obligation to pay for the hardware. The portion of the transaction price allocated to maintenance is recognized as revenue that is ratable over the maintenance term.

Professional Services

Our arrangements often include service elements other than maintenance and support services. These services include training, design assistance, and consulting. These services are generally performed on a time and materials basis, and are recognized over time, as the customer simultaneously receives and consumes the benefit provided. Certain arrangements also include the customization or modification of licensed IP. Revenue from these contracts is recognized over time as the services are performed, when the development is specific to the customer's needs and we have enforceable rights to payment for performance completed. Inputs such as costs incurred and hours expended are used in order to measure progress of performance. We have a history of accurately estimating project status and the costs necessary to complete projects. A number of internal and external factors can affect these estimates, including labor rates, utilization and efficiency variances, specification and testing requirement changes, and changes in customer delivery priorities. Payments for services are generally due upon milestones in the contract or upon consumption of the hourly resources.

Flexible Spending Accounts

Our customers frequently enter into non-cancelable Flexible Spending Account arrangements (FSA) whereby the customer commits to a fixed dollar amount over a specified period of time that can be used to purchase from a list of our products or services. These arrangements do not meet the definition of a revenue contract until the customer executes a separate order (pulldown request) to identify the required products and services that they are purchasing. The combination of the FSA arrangement and the subsequent order creates enforceable rights and obligations, thus meeting the definition of a revenue contract. Each separate order under the agreement is treated as an individual contract and accounted for based on the respective performance obligations included within the pulldown requests.

Significant Judgments

Our contracts with customers often include promises to transfer multiple products and services to a customer. Determining whether services and products are considered distinct performance obligations that should be accounted for separately versus together requires significant judgment. We have concluded that (1) our EDA software licenses in TSL contracts are not distinct from our obligation to provide unspecified software updates to the

licensed software throughout the license term, because those promises represent inputs to a single, combined performance obligation, and (2) where unspecified additional software product rights are part of the contract with the customer, such rights are accounted for as part of the single performance obligation that includes the licenses, updates, and technical support, because such rights are provided for the same period of time and have the same time-based pattern of transfer to the customer. In reaching this conclusion, we considered the nature of the obligation to customers, which is to provide an ongoing right to use the most up to date and relevant software. As EDA customers operate in a rapidly changing and competitive environment, satisfying the obligation requires providing critical updates to the existing software products, including ongoing iterative interaction with customers to make the software relevant to customers' ability to meet the time to go to market with advanced products.

Our contracts with customers can involve hundreds of products and various license rights. Customers often negotiate a broad portfolio of solutions, and favorable terms along with future purchase options to manage their overall costs. Determining whether the purchase options are considered distinct performance obligations that should be accounted for separately as material rights versus combined together may require significant judgment.

Judgment is also required to determine the standalone selling price (SSP) for each distinct performance obligation. For non-software performance obligations (IP, Hardware, and services), SSP is established based on observable prices of products and services sold separately. SSP for license (and related updates and support) in a contract with multiple performance obligations is determined by applying a residual approach whereby all other non-software performance obligations within a contract are first allocated a portion of the transaction price based upon their respective SSP, using observable prices, with any residual amount of the transaction price allocated to the license because we do not sell the license separately, and the pricing is highly variable.

Contract Balances

The timing of revenue recognition may differ from the timing of invoicing customers, and these timing differences result in receivables (billed or unbilled), contract assets, or contract liabilities (deferred revenue) in our consolidated balance sheets. We record a contract asset when revenue is recognized prior to the right to invoice, or deferred revenue when revenue is recognized subsequent to invoicing. For time-based software agreements, customers are generally invoiced in equal, quarterly amounts, although some customers prefer to be invoiced in single or annual amounts. We record an unbilled receivable when revenue is recognized and we have an unconditional right to invoice and receive payment.

Warranties and Indemnities

Warranties. We generally warrant our products to be free from defects in media and to substantially conform to material specifications for a period of 90 days for our software products and for up to six months for our hardware products.

Indemnities. In addition to such warranties, in certain cases, we provide our customers with limited indemnification with respect to claims that their use of our software products infringes on patents, copyrights, trademarks or trade secrets. We are unable to estimate the potential impact of these commitments on the future results of operations.

Net Income Per Share. We compute basic net income per share by dividing net income available to common stockholders by the weighted average number of common shares outstanding during the period. Diluted net income per share reflects the dilution from potential common shares outstanding such as stock options and unvested restricted stock units and awards during the period using the treasury stock method. See Note 17. *Net Income Per Share* of the *Notes to Consolidated Financial Statements* in this Annual Report.

Foreign Currency Translation. The functional currency of the majority of our active foreign subsidiaries is the foreign subsidiary's local currency. Assets and liabilities that are not denominated in the functional currency are remeasured into the functional currency with any related gains or losses recorded in earnings. We translate assets and liabilities of our non-U.S. dollar functional currency foreign operations into the U.S. dollar reporting currency at exchange rates in effect at the balance sheet date. We translate income and expense items of such foreign operations into the U.S. dollar reporting currency at average exchange rates for the period. Accumulated translation adjustments are reported in stockholders' equity, as a component of accumulated other comprehensive income (loss).

Recent Accounting Pronouncements Not Yet Adopted

In June 2022, the FASB issued ASU 2022-03, Fair Value Measurement (Topic 820): Fair Value Measurement of Equity Securities Subject to Contractual Sale Restrictions, which applies to all equity securities measured at fair value that are subject to contractual sale restrictions. This change prohibits entities from taking into account contractual restrictions on the sale of equity securities when estimating fair value and introduces required disclosures for such transactions. The ASU will be effective for us beginning the fiscal year 2025 and will be applied prospectively. Any future impact from the adoption of this ASU will depend on the facts and circumstances of future transactions.

In November 2023, the FASB issued ASU 2023-07, Segment Reporting (Topic 280): Improvements to Reportable Segment Disclosures. The ASU expands public entities' segment disclosures by requiring disclosure of significant segment expenses that are regularly provided to the Chief Operating Decision Maker (CODM) and included within each reported measure of segment profit or loss, an amount and description of its composition for other segment items, and interim disclosures of a reportable segment's profit or loss and assets. The ASU will be effective for our annual reports beginning in fiscal 2025, and interim period reports beginning in fiscal 2026. We are currently evaluating the impact of adopting this ASU on our consolidated financial statements and disclosures.

In December 2023, the FASB issued ASU 2023-09, Income Taxes (Topic 740): Improvements to Income Tax Disclosures, which enhances the transparency and decision usefulness of income tax disclosures primarily through changes to the rate reconciliation and income taxes paid information. The ASU will be effective for us beginning in fiscal 2026 and will be applied on a prospective basis. Early adoption is permitted. We are currently evaluating the impact of this ASU on our consolidated financial statements and related disclosures.

In November 2024, the FASB issued ASU 2024-03, Income Statement – Reporting Comprehensive Income-Expense Disaggregation (Subtopic 220-40): Disaggregation of Income Statement Expenses. The ASU requires the disclosure of additional information related to certain costs and expenses, including amounts of inventory purchases, employee compensation, and depreciation and amortization included in each income statement line item. The ASU also requires disclosure of the total amount of selling expenses and our definition of selling expenses. The ASU is effective for our annual reports beginning in fiscal 2028, and interim period reports beginning in fiscal 2029 either on a prospective or retrospective basis. Early adoption is permitted. We are currently evaluating the impact of adopting this ASU on our consolidated financial statements and disclosures.

Note 3. Discontinued Operations

On September 30, 2024, we completed the sale of Software Integrity business to entities controlled by funds affiliated with Clearlake Capital Group, L.P. and Francisco Partners. The aggregate consideration for the sale was \$1.65 billion, comprised of (i) cash of \$1.48 billion received upon closing; (ii) \$121.5 million reflecting the present value of \$125 million deferred consideration receivable in equal installments over five fiscal quarters beginning on January 17, 2025, subject to acceleration at our option prior to the closing of our pending acquisition of ANSYS Inc. (Ansys); (iii) \$22.2 million reflecting fair value of contingent consideration of up to \$475 million receivable upon the Sponsors achieving a specified rate of return in the event of one or more potential liquidity transactions; and (iv) additional consideration receivable of \$27.1 million as a result of net working capital adjustments. The fair value of the contingent consideration receivable was estimated using an option pricing model to derive the likelihood of achieving the performance-based metrics. The valuation methodology includes assumptions and judgments regarding volatility, discount rates, and the expected timing of payments. As of October 31, 2024, the deferred consideration receivable and the contingent consideration receivables were recorded within the prepaid and other current assets in the consolidated balance sheets. As a result of the Software Integrity Divestiture, we derecognized net assets of \$720.5 million and incurred transaction costs of \$61.7 million, resulting in a pre-tax gain of \$868.8 million within income from discontinued operations in the consolidated statements of income, subject to certain post-closing adjustments that are expected to be finalized in the first quarter of fiscal 2025.

[Table of Contents](#)

The financial results of the Software Integrity business are presented as income from discontinued operations, net of income taxes in our consolidated statements of income. The financial results for fiscal 2024 include the period from the beginning of year through the date of sale. The following table presents the major components of financial results of our Software Integrity business for the periods presented:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Revenue	\$ 468,720	\$ 524,605	\$ 465,828
Cost of revenue	153,081	191,350	165,684
Operating expenses	265,029	337,235	286,820
Interest and other income (expense), net	2,003	292	(1,262)
Income (loss) from discontinued operations	52,613	(3,688)	12,062
Gain on Software Integrity Divestiture	868,830	—	—
Income (loss) from discontinued operations before income taxes	921,443	(3,688)	12,062
Income tax provision (benefit)	99,773	(6,531)	(2,307)
Income from discontinued operations, net of income taxes	\$ 821,670	\$ 2,843	\$ 14,369

The following table represents the aggregated carrying amounts of classes of assets and liabilities that are classified as discontinued operations in the consolidated balance sheets for the periods presented:

	As of October 31, 2023
	(in thousands)
Assets:	
Cash and cash equivalents	\$ 4,947
Accounts receivable, net	90,307
Prepaid and other current assets	19,400
Total current assets of discontinued operations	\$ 114,654
Property and equipment, net	\$ 7,424
Operating lease right-of use assets, net	8,906
Goodwill	724,271
Intangible assets, net	134,617
Deferred income taxes	7,388
Other long-term assets	26,153
Total long-term assets of discontinued operations	\$ 908,759
Liabilities:	
Accounts payable and accrued liabilities	\$ 63,847
Operating lease liabilities	5,858
Deferred revenue	216,539
Total current liabilities of discontinued operations	\$ 286,244
Long-term operating lease liabilities	\$ 4,349
Long-term deferred revenue	24,301
Other long-term liabilities	4,607
Total long-term liabilities of discontinued operations	\$ 33,257

The following table presents significant non-cash items and capital expenditures of discontinued operations for the periods presented:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Amortization and depreciation	\$ 16,317	\$ 51,971	\$ 44,173
Reduction of operating lease right-of-use assets	\$ 2,162	\$ 5,120	\$ 4,898
Amortization of capitalized costs to obtain revenue contracts	\$ 25,051	\$ 30,071	\$ 23,090
Stock-based compensation	\$ 34,381	\$ 50,198	\$ 37,280
Deferred income taxes	\$ (31,679)	\$ (3,136)	\$ (599)
Purchases of property and equipment	\$ 1,487	\$ 3,232	\$ 3,610

Note 4. Pending Acquisition of Ansys

On January 15, 2024, we entered into an Agreement and Plan of Merger (the Merger Agreement) to acquire all of the outstanding shares of Ansys, a provider of broad engineering simulation and analysis software and services, in a cash-and-stock transaction (the Ansys Merger) that values Ansys at approximately \$35.0 billion, based on the closing price of Synopsys common stock on December 21, 2023.

Under the terms of the Merger Agreement, at the effective time of the Ansys Merger (the Effective Time), each share of Ansys common stock issued and outstanding immediately prior to the Effective Time (with certain exceptions set forth in the Merger Agreement) will be converted into the right to receive 0.3450 (the Exchange Ratio) of a share of Synopsys common stock and \$197.00 in cash, without interest. The Merger Agreement also provides for Synopsys' assumption of certain outstanding Ansys options and other unvested Ansys equity awards held by continuing Ansys employees. If the stock consideration to be issued by Synopsys in connection with the Ansys Merger exceeds 19.9999% of the shares of Synopsys common stock issued and outstanding immediately prior to the Effective Time, the Exchange Ratio will be reduced to the minimum extent necessary to ensure that the aggregate number of shares of Synopsys common stock to be issued in connection with the Ansys Merger does not exceed such threshold, and the cash consideration will be correspondingly increased to offset such adjustment.

The Ansys Merger was approved by the holders of a majority of the outstanding shares of Ansys common stock on May 22, 2024 and is anticipated to close in the first half of calendar year 2025. The Ansys Merger is subject to the satisfaction or waiver of customary closing conditions, including, among other things, the clearance of the Ansys Merger under certain antitrust and foreign investment regimes, and the continued effectiveness of the registration statement on Form S-4 (File No. 333-277912) filed by us on March 14, 2024 and declared effective by the SEC on April 17, 2024. Following the determination that it was a necessary step towards obtaining governmental approval of and successfully closing the Ansys Merger, on September 3, 2024, we signed a definitive agreement for the sale of our Optical Solutions Group (OSG) to Keysight Technologies, Inc. (Keysight) (such sale, the Optical Solutions Divestiture). The Optical Solutions Divestiture is subject to customary closing conditions, including review by regulatory authorities, and the successful closing of the Ansys Merger. As such, the assets and liabilities of OSG have not been classified as assets held for sale in the consolidated balance sheets.

We and Ansys each have termination rights under the Merger Agreement. A fee of \$1.5 billion may be payable by us to Ansys, or a fee of \$950.0 million may be payable by Ansys to us, upon termination of the Merger Agreement under specified circumstances, each as more fully described in the Merger Agreement.

In connection with the execution of the Merger Agreement, we entered into a commitment letter on January 15, 2024 (the Bridge Commitment Letter) with certain financial institutions that committed to provide, subject to the satisfaction of customary closing conditions, a senior unsecured bridge facility (the Bridge Commitment). On October 3, 2024, we reduced the Bridge Commitment by \$1.1 billion to \$10.6 billion following the closing of the Software Integrity Divestiture. The Bridge Commitment currently provides for an aggregate principal amount of up to \$10.6 billion. On February 13, 2024, we entered into a term loan facility credit agreement (the Term Loan Agreement), which provides us with the ability to borrow up to \$4.3 billion at the closing of the Ansys Merger, subject to the satisfaction of customary closing conditions for similar facilities, for the purpose of financing a portion of the

cash consideration to be paid in the Ansys Merger and paying related fees and expenses in connection with the Ansys Merger and the other transactions contemplated by the Merger Agreement. See Note 11. *Bridge Commitment Letter, Term Loan and Revolving Credit Facilities* of the *Notes to Consolidated Financial Statements* in this Annual Report for more information on the Bridge Commitment and the Term Loan Agreement.

Note 5. Business Combinations

Fiscal 2024

During fiscal 2024, we completed several acquisitions for an aggregate purchase consideration of \$159.3 million, net of cash acquired. The aggregate purchase consideration was preliminary and allocated as follows: \$78.9 million to identifiable intangible assets, \$96.1 million to goodwill, and \$15.7 million to net tangible liabilities. The acquired identifiable intangible assets were valued using the income approach and are being amortized over their respective useful lives ranging from 3 to 13 years. The goodwill recognized from these acquisitions, of which \$61.8 million was attributable to the Design Automation reporting unit, and \$34.3 million was attributable to the Design IP reporting unit, was not deductible for income tax purposes.

We have included the financial results of the fiscal 2024 acquisitions in our consolidated financial statements from their respective acquisition date. We do not consider these acquisitions to be material, individually or in the aggregate, to our consolidated financial statements.

Fiscal 2023

During fiscal 2023, we completed several acquisitions for an aggregate purchase consideration of \$295.4 million, net of cash acquired. We do not consider these acquisitions to be material, individually or in the aggregate, to our consolidated financial statements. The total purchase consideration was allocated as follows: \$95.8 million to identifiable intangible assets, \$229.4 million to goodwill, and \$29.8 million to net tangible liabilities. The goodwill recognized from these acquisitions was assigned to the Design Automation reporting unit, of which \$5.7 million was deductible for income tax purposes.

Fiscal 2022

OpenLight Photonics, Inc.

During the second quarter of fiscal 2022, we acquired a 75% equity interest in OpenLight Photonics, Inc. (OpenLight) for cash consideration of \$90.0 million. The remaining 25% equity interest in OpenLight is held by Juniper Networks, Inc. (the Minority Investor) from their contribution of IP and certain tangible assets.

The agreement with the Minority Investor contains redemption features whereby the interest held by the Minority Investor is redeemable either (i) at the option of the Minority Investor on or after the third anniversary of the acquisition or sooner in certain circumstances or (ii) at our option beginning on the third anniversary of the acquisition. This option is exercisable at the greater of fair value at the time of redemption or \$30.0 million and was valued at \$10.1 million, resulting in a total consideration of \$100.1 million.

The purchase price was allocated as follows: \$94.0 million to identifiable intangible assets and \$46.7 million to goodwill, which were attributable to the Design Automation reporting unit. There was no tax-deductible goodwill related to the acquisition. During fiscal 2024, we assessed long-lived assets for impairment and wrote off the remaining unamortized intangible assets balance of \$53.5 million due to impairment. See Note 7. *Goodwill and Intangible Assets* of the *Notes to Consolidated Financial Statements* in this Annual Report.

During fiscal 2024, our ownership interest in OpenLight was reduced to 71% as a result of the recognition of non-controlling interest upon issuance of OpenLight stock.

During fiscal 2024, 2023 and 2022, OpenLight incurred a net loss of \$91.7 million, \$40.9 million and \$19.4 million, respectively, of which \$22.0 million, \$10.0 million and \$4.9 million, respectively, was attributable to redeemable non-controlling interest. As of October 31, 2024 and 2023, the carrying value of the redeemable non-controlling interest was recorded at its estimated fair value of \$30.0 million and \$31.0 million, respectively, in the consolidated balance sheets.

NTT Security AppSec Solutions Inc.

On June 22, 2022, we completed the acquisition of all outstanding shares of NTT Security AppSec Solutions Inc. (which operated under the name WhiteHat Security, or WhiteHat), a provider of dynamic application security testing solutions, from NTT Security Corporation for an aggregate purchase price of \$310.0 million, net of cash acquired. With this acquisition, we broadened our product offering in the application security testing market.

The aggregate purchase consideration was allocated as follows: \$97.5 million to identifiable intangible assets, \$252.9 million to goodwill, and \$40.4 million to net tangible liabilities. The goodwill was not deductible for tax purposes. The assets and liabilities attributed to WhiteHat were related to the Software Integrity business and reclassified as discontinued operations as of October 31, 2023 in our consolidated balance sheets.

Other Fiscal 2022 Acquisitions

During fiscal 2022, we completed two other acquisitions for aggregate purchase consideration of \$31.8 million, net of cash acquired. The purchase price was allocated as follows: \$12.7 million to identifiable intangible assets, \$3.1 million to net tangible liabilities, and \$22.2 million to goodwill, which were attributable to the Design Automation reporting unit. There was no tax-deductible goodwill related to the acquisitions.

Preliminary Fair Value Estimates

For all acquisitions completed in fiscal 2024, the purchase price was allocated to tangible and identifiable intangible assets acquired and liabilities assumed based on their preliminary estimated fair values, which were determined using generally accepted valuation techniques based on estimates and assumptions made by management at the time of acquisition. These estimates and assumptions are subject to change as additional information becomes available during the respective measurement period, which is not expected to exceed 12 months from applicable acquisition date. The primary areas of those preliminary estimates relate to certain tangible assets and liabilities, identifiable intangible assets, and income taxes.

Transaction Costs

Transaction costs from continuing operations were \$172.6 million, mainly in connection with the pending Ansys Merger, \$13.8 million and \$9.4 million during fiscal 2024, 2023 and 2022, respectively. These costs mainly consisted of professional fees and administrative costs for closed and pending acquisitions and were expensed as incurred in our consolidated statements of income.

Note 6. Revenue*Disaggregated Revenue*

The following table shows the percentage of revenue by product groups:

	Year Ended October 31,		
	2024	2023	2022
EDA	66.4 %	69.2 %	69.2 %
Design IP	31.1 %	29.0 %	28.5 %
Other	2.5 %	1.8 %	2.3 %
Total	100.0 %	100.0 %	100.0 %

Contract Balances

The contract assets indicated below are presented as prepaid and other current assets in the consolidated balance sheets. The contract assets are transferred to receivables when the rights to invoice and receive payment become unconditional. Unbilled receivables are presented as accounts receivable, net, in the consolidated balance sheets.

Contract balances are as follows:

	As of October 31,	
	2024	2023
	(in thousands)	
Contract assets, net	\$ 757,075	\$ 375,904
Unbilled receivables	\$ 44,166	\$ 60,016
Deferred revenue	\$ 1,732,568	\$ 1,710,288

During fiscal 2024, we recognized revenue of \$1.5 billion, that was included in the deferred revenue balance as of October 31, 2023, including previously unfulfilled contracts that have expired and are no longer subject to an implied promise to provide future services. During fiscal 2023, we recognized revenue of \$1.5 billion, that was included in the deferred revenue balance as of October 31, 2022, including previously unfulfilled contracts that have expired and are no longer subject to an implied promise to provide future services.

Contracted but unsatisfied or partially unsatisfied performance obligations (backlog) were approximately \$8.1 billion as of October 31, 2024, which includes \$1.2 billion in non-cancellable Flexible Spending Account (FSA) commitments from customers where actual product selection and quantities of specific products or services are to be determined by customers at a later date. We have elected to exclude future sales-based royalty payments from the remaining performance obligations. Approximately 41% of the backlog as of October 31, 2024, excluding non-cancellable FSA, is expected to be recognized as revenue over the next 12 months, with the remainder to be recognized thereafter. The majority of the remaining backlog is expected to be recognized in the following three years. The backlog was approximately \$8.1 billion as of October 31, 2023, which included \$1.4 billion in non-cancellable FSA commitments from customers.

During fiscal 2024 and 2023, we recognized \$104.4 million and \$99.3 million, respectively, from performance obligations satisfied from sales-based royalties earned during the periods.

Costs of Obtaining a Contract with Customer

The incremental costs of obtaining a contract with a customer, which consist primarily of direct sales commission earned upon execution of the contract, were capitalized in compliance with authoritative guidance, and amortized over the estimated period of which the benefit is expected to be received. As direct sales commission paid for renewals are commensurate with the amounts paid for initial contracts, the deferred incremental costs will be recognized over the contract term.

Capitalized commission costs, net of accumulated amortization, as of October 31, 2024 and 2023 were \$72.8 million and \$67.2 million, respectively. The balances are included in other long-term assets in our consolidated balance sheets. Amortization of these assets were \$48.5 million, \$52.1 million and \$49.9 million during fiscal 2024, 2023 and 2022, respectively, and are included in sales and marketing expense in our consolidated statements of income.

Note 7. Goodwill and Intangible Assets

Goodwill

As a result of the Software Integrity Divestiture effective in the second quarter of fiscal 2024, we have two reporting segments, and reporting units are determined to be the same as reportable segments. The change has no impact on the composition of remaining two reporting units, therefore, no impairment indicator was identified upon the change. We performed the required annual goodwill assessment in the fourth quarter of fiscal 2024, and concluded the goodwill was not impaired. There was no goodwill impairment in fiscal 2024, 2023 and 2022.

Goodwill activity by reportable segment consists of the following:

	Design Automation	Design IP (in thousands)	Total
Balance at October 31, 2022	\$ 2,176,337	\$ 944,734	\$ 3,121,071
Additions	229,351	—	229,351
Effect of foreign currency translation	(5,006)	649	(4,357)
Balance at October 31, 2023	2,400,682	945,383	3,346,065
Additions	61,803	34,339	96,142
Adjustments	170	—	170
Effect of foreign currency translation	6,602	(129)	6,473
Balance at October 31, 2024	<u>\$ 2,469,257</u>	<u>\$ 979,593</u>	<u>\$ 3,448,850</u>

Intangible Assets

During the fourth quarter of fiscal 2024, we assessed long-lived assets for impairment and recorded an impairment charge of \$53.5 million related to acquired intangible assets. The impairment charge was triggered by a decline in estimated fair value resulting from the reductions in the expected future cash flows associated with our core/developed technology intangible assets related to our OpenLight business. There were no other impairment charges for long-lived assets in fiscal 2024, 2023 and 2022.

Intangible assets as of October 31, 2024 consists of the following:

	Gross Carrying Amount	Accumulated Amortization and Impairment (in thousands)	Net Amount
Core/developed technology	\$ 904,347	\$ 777,518	\$ 126,829
Customer relationships	314,140	247,025	67,115
Contract rights intangible	176,382	175,170	1,212
Trademarks and trade names	12,925	12,917	8
Total	<u>\$ 1,407,794</u>	<u>\$ 1,212,630</u>	<u>\$ 195,164</u>

Intangible assets as of October 31, 2023 consists of the following:

[Table of Contents](#)

	Gross Carrying Amount	Accumulated Amortization (in thousands)	Net Amount
Core/developed technology	\$ 842,448	\$ 672,480	\$ 169,968
Customer relationships	296,883	231,557	65,326
Contract rights intangible	175,747	171,487	4,260
Trademarks and trade names	12,925	12,902	23
Capitalized software development costs	50,795	50,795	—
Total	<u>\$ 1,378,798</u>	<u>\$ 1,139,221</u>	<u>\$ 239,577</u>

Amortization expense related to acquired intangible assets, including the impairment charge, consists of the following:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Core/developed technology	\$ 104,797	\$ 42,892	\$ 42,582
Customer relationships	15,550	9,288	11,389
Contract rights intangible	3,872	2,389	2,307
Trademarks and trade names	15	7	33
Capitalized software development costs ⁽¹⁾	—	4,770	2,672
Total	<u>\$ 124,234</u>	<u>\$ 59,346</u>	<u>\$ 58,983</u>

⁽¹⁾ Amortization of capitalized software development costs is included in cost of products revenue in the consolidated statements of income.

The following table presents the estimated future amortization of acquired intangible assets as of October 31, 2024:

Fiscal Year	(in thousands)
2025	\$ 46,436
2026	36,112
2027	31,165
2028	25,572
2029	23,038
2030 and thereafter	32,841
Total	<u>\$ 195,164</u>

Note 8. Balance Sheet Components

	As of October 31,	
	2024	2023
	(in thousands)	
Accounts receivable, net:		
Accounts receivable	\$ 941,312	\$ 835,327
Unbilled accounts receivable	44,166	60,016
Total accounts receivable	985,478	895,343
Less: allowance for credit losses	(51,008)	(38,683)
Total	\$ 934,470	\$ 856,660
Property and equipment, net:		
Computer and other equipment	\$ 1,011,712	\$ 973,540
Buildings	103,779	135,255
Furniture and fixtures	87,524	83,649
Land	18,219	21,598
Leasehold improvements	271,753	259,241
	1,492,987	1,473,283
Less: accumulated depreciation ⁽¹⁾	(929,981)	(923,446)
Total	\$ 563,006	\$ 549,837
Other long-term assets:		
Deferred compensation plan assets	\$ 386,757	\$ 297,180
Capitalized commission, net	72,801	67,240
Other	124,142	80,400
Total	\$ 583,700	\$ 444,820
Accounts payable and accrued liabilities:		
Payroll and related benefits	\$ 624,823	\$ 531,848
Accrued income taxes	147,115	226,762
Other accrued liabilities	184,321	146,696
Accounts payable	207,333	154,608
Total	\$ 1,163,592	\$ 1,059,914
Other long-term liabilities:		
Deferred compensation plan liabilities	\$ 386,757	\$ 297,180
Other	82,981	84,351
Total	\$ 469,738	\$ 381,531

⁽¹⁾ Accumulated depreciation includes write-offs due to retirement of fully depreciated fixed assets.

Note 9. Financial Assets and Liabilities

Cash Equivalents and Short-term Investments

As of October 31, 2024, the balances of our cash equivalents and short-term investments are as follows:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses Less Than 12 Continuous Months	Gross Unrealized Losses 12 Continuous Months or Longer	Estimated Fair Value ⁽¹⁾
(in thousands)					
Cash equivalents:					
Money market funds	\$ 869,972	\$ —	\$ —	\$ —	\$ 869,972
U.S. Treasury, agency & T-bills	7,984	1	—	—	7,985
Total:	<u>\$ 877,956</u>	<u>\$ 1</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 877,957</u>
Short-term investments:					
U.S. Treasury, agency & T-bills	\$ 19,411	\$ 44	\$ (6)	\$ —	\$ 19,449
Corporate debt securities	105,024	349	(115)	(2)	105,256
Asset-backed securities	29,061	130	(7)	(20)	29,164
Total:	<u>\$ 153,496</u>	<u>\$ 523</u>	<u>\$ (128)</u>	<u>\$ (22)</u>	<u>\$ 153,869</u>

⁽¹⁾ See Note 10. Fair Value Measurements for further discussion on fair values.

Our short-term investment portfolio includes both corporate and government debt securities that have a maximum maturity of three years. The longer the duration of these securities, the more susceptible they are to changes in market interest rates and bond yields. As yields increase, those securities with a lower yield-at-cost show a mark-to-market unrealized loss. Most of our unrealized losses are due to changes in market interest rates, and bond yields. We believe that we have the ability to realize the full value of all of these investments upon maturity. As of October 31, 2024, our investments that were in a continuous loss position of 12 months or more, as well as the unrealized losses on those investments, were immaterial.

The contractual maturities of our available-for-sale debt securities as of October 31, 2024 are as follows:

	Amortized Cost	Fair Value
	(in thousands)	
Less than 1 year	\$ 57,022	\$ 57,156
1-5 years	92,217	92,449
5-10 years	2,518	2,531
>10 years	1,739	1,733
Total	<u>\$ 153,496</u>	<u>\$ 153,869</u>

[Table of Contents](#)

As of October 31, 2023, the balances of our cash equivalents and short-term investments are as follows:

	Amortized Cost	Gross Unrealized Gains	Gross Unrealized Losses Less Than 12 Continuous Months	Gross Unrealized Losses 12 Continuous Months or Longer	Estimated Fair Value ⁽¹⁾
(in thousands)					
Cash equivalents:					
Money market funds	\$ 10,129	\$ —	\$ —	\$ —	\$ 10,129
U.S. Treasury, agency & T-bills	2,994	—	—	—	2,994
Total:	<u>\$ 13,123</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ —</u>	<u>\$ 13,123</u>
Short-term investments:					
U.S. Treasury, agency & T-bills	\$ 15,752	\$ —	\$ (61)	\$ (2)	\$ 15,689
Municipal bonds	515	—	—	(16)	499
Corporate debt securities	103,213	13	(455)	(396)	102,375
Asset-backed securities	33,245	21	(93)	(97)	33,076
Total:	<u>\$ 152,725</u>	<u>\$ 34</u>	<u>\$ (609)</u>	<u>\$ (511)</u>	<u>\$ 151,639</u>

⁽¹⁾ See Note 10. Fair Value Measurements for further discussion on fair values.

Restricted cash

We include amounts generally described as restricted cash in cash and cash equivalents when reconciling beginning-of-period and end-of-period total amounts shown in the consolidated statements of cash flows. Restricted cash is primarily associated with office leases and employee loan programs.

The following table provides a reconciliation of cash, cash equivalents and restricted cash included in the consolidated balance sheets and the consolidated statements of cash flows:

	As of October 31,	
	2024	2023
(in thousands)		
Cash and cash equivalents	\$ 3,896,532	\$ 1,433,966
Restricted cash included in prepaid and other current assets	1,529	1,549
Restricted cash included in other long-term assets	668	725
Cash, cash equivalents and restricted cash	3,898,729	1,436,240
Cash, cash equivalents and restricted cash from discontinued operations	—	4,947
Total cash, cash equivalents and restricted cash, including cash from discontinued operations	<u>\$ 3,898,729</u>	<u>\$ 1,441,187</u>

Non-marketable equity securities

Our portfolio of non-marketable equity securities consists of strategic investments in privately held companies. In November 2023, we completed the sale of strategic investments in privately-held companies. The gain recognized from the sales was \$55.1 million and included in interest and other income (expense), net, in our consolidated statements of income. There were no material impairments of non-marketable equity securities in fiscal 2024, 2023, and 2022.

Derivatives

We recognize derivative instruments as either assets or liabilities in the consolidated balance sheets at fair value and provide qualitative and quantitative disclosures about such derivatives. We operate internationally and are exposed to potentially adverse movements in foreign currency exchange rates. We enter into hedges in the form of foreign currency forward contracts to reduce our exposure to foreign currency rate changes on non-functional

currency denominated forecasted transactions and balance sheet positions including: (1) certain assets and liabilities, (2) shipments forecasted to occur within approximately one month, (3) future billings and revenue on previously shipped orders, and (4) certain future intercompany invoices denominated in foreign currencies.

The duration of forward contracts, the majority of which are short-term, ranges from approximately 2 months to 29 months at inception. We do not use foreign currency forward contracts for speculative or trading purposes. We enter into foreign exchange forward contracts with high credit quality financial institutions that are rated "A" or above and to date have not experienced nonperformance by counterparties. In addition, we mitigate credit risk in derivative transactions by permitting net settlement of transactions with the same counterparty and anticipate continued performance by all counterparties to such agreements.

The assets or liabilities associated with the forward contracts are recorded at fair value in other current assets or accrued liabilities in the consolidated balance sheets. The accounting for gains and losses resulting from changes in fair value depends on the use of the foreign currency forward contract and whether it is designated and qualifies for hedge accounting. The cash flow impact upon settlement of the derivative contracts is included in "net cash provided by operating activities" in the consolidated statements of cash flows.

Cash Flow Hedging Activities

Certain foreign exchange forward contracts are designated and qualify as cash flow hedges. These contracts have durations of approximately 29 months or less. Certain forward contracts are rolled over periodically to capture the full length of exposure to our foreign currency risk, which can be up to three years. To receive hedge accounting treatment, all hedging relationships are formally documented at the inception of the hedge, and the hedges must be highly effective in offsetting changes to future cash flows on the hedged transactions. The related gains or losses resulting from changes in fair value of these hedges is initially reported, net of tax, as a component of other comprehensive income (loss) (OCI) in stockholders' equity and reclassified into revenue or operating expenses, as appropriate, at the time the hedged transactions affect earnings. We expect a majority of the hedge balance in OCI to be reclassified to the statements of income within the next 12 months.

We did not record any gains or losses related to discontinuation of cash flow hedges for fiscal years 2024, 2023 and 2022.

Non-designated Hedging Activities

Our foreign exchange forward contracts that are used to hedge non-functional currency denominated balance sheet assets and liabilities are not designated as hedging instruments. Accordingly, any gains or losses from changes in the fair value of the forward contracts are recorded in interest and other income (expense), net. The gains and losses on these forward contracts generally offset the gains and losses associated with the underlying assets and liabilities, which are also recorded in interest and other income (expense), net. The duration of the forward contracts for hedging our balance sheet exposure is approximately one month.

We also have certain foreign exchange forward contracts for hedging certain international revenues and expenses that are not designated as hedging instruments. Accordingly, any gains or losses from changes in the fair value of the forward contracts are recorded in interest and other income (expense), net. The gains and losses on these forward contracts generally offset the gains and losses associated with the foreign currency in operating income. The duration of these forward contracts is usually less than one year. The overall goal of our hedging program is to minimize the impact of currency fluctuations on the net income over the fiscal year.

The effects of the non-designated derivative instruments in our consolidated statements of income are summarized as follows:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Gains (losses) recorded in interest and other income (expense), net	\$ (307)	\$ (5,899)	\$ (15,851)

The notional amounts in the table below for derivative instruments provide one measure of the transaction volume outstanding:

	As of October 31,	
	2024	2023
	(in thousands)	
Total gross notional amounts	\$ 1,686,341	\$ 1,666,758
Net fair value	\$ 1,819	\$ (2,308)

Our exposure to the market gains or losses will vary over time as a function of currency exchange rates. The amounts ultimately realized upon settlement of these financial instruments, together with the gains and losses on the underlying exposures, will depend on actual market conditions during the remaining life of the instruments.

The following table represents the consolidated balance sheets location and amount of derivative instrument fair values segregated between designated and non-designated hedge instruments:

	Fair values of derivative instruments designated as hedging instruments		Fair values of derivative instruments not designated as hedging instruments	
	(in thousands)			
Balance at October 31, 2024				
Other current assets	\$	8,839	\$	12
Accrued liabilities	\$	6,918	\$	114
Balance at October 31, 2023				
Other current assets	\$	12,962	\$	491
Accrued liabilities	\$	14,665	\$	1,096

The following table represents the location of the amount of gains and losses on derivative instrument fair values for designated hedge instruments, net of tax in the consolidated statements of income:

	Location of gains (losses) recognized in OCI on derivatives	Amount of gains (losses) recognized in OCI on derivatives (effective portion)	Location of gains (losses) reclassified from OCI	Amount of gains (losses) reclassified from OCI (effective portion)
(in thousands)				
Fiscal year ended October 31, 2024				
Foreign exchange contracts	Revenue	\$ 3,940	Revenue	\$ 3,089
Foreign exchange contracts	Operating expenses	5,685	Operating expenses	112
Total		<u>\$ 9,625</u>		<u>\$ 3,201</u>
Fiscal year ended October 31, 2023				
Foreign exchange contracts	Revenue	\$ 8,390	Revenue	\$ (9,942)
Foreign exchange contracts	Operating expenses	16,596	Operating expenses	(15,334)
Total		<u>\$ 24,986</u>		<u>\$ (25,276)</u>
Fiscal year ended October 31, 2022				
Foreign exchange contracts	Revenue	\$ (19,755)	Revenue	\$ 10,975
Foreign exchange contracts	Operating expenses	(59,314)	Operating expenses	(15,869)
Total		<u>\$ (79,069)</u>		<u>\$ (4,894)</u>

Note 10. Fair Value Measurements

ASC 820-10, *Fair Value Measurements and Disclosures*, defines fair value, establishes guidelines and enhances disclosure requirements for fair value measurements. The accounting guidance requires an entity to maximize the use of observable inputs and minimize the use of unobservable inputs when measuring fair value. The accounting guidance also establishes a fair value hierarchy based on the independence of the source and objective evidence of the inputs used. There are three fair value hierarchies based upon the level of inputs that are significant to fair value measurement:

Level 1—Observable inputs that reflect quoted prices (unadjusted) for identical instruments in active markets;

Level 2—Observable inputs other than quoted prices for identical instruments in active markets, quoted prices for similar instruments in active markets, quoted prices for identical or similar instruments in inactive markets, and model-driven valuations in which all significant inputs and significant value drivers are observable in active markets; and

Level 3—Unobservable inputs derived from fair valuation techniques in which one or more significant inputs or significant value drivers are unobservable.

On a recurring basis, we measure the fair value of certain assets and liabilities, which include cash equivalents, short-term investments, non-qualified deferred compensation plan assets, and foreign currency derivative contracts.

Our cash equivalents and short-term investments are classified within Level 1 or Level 2 because they are valued using quoted market prices in an active market or alternative independent pricing sources and models utilizing market observable inputs.

Our non-qualified deferred compensation plan assets consist of money market and mutual funds invested in domestic and international marketable securities that are directly observable in active markets and are therefore classified within Level 1.

Our foreign currency derivative contracts are classified within Level 2 because these contracts are not actively traded and the valuation inputs are based on quoted prices and market observable data of similar instruments.

Our borrowings under our Credit and Term Loan facilities are classified within Level 2 because these borrowings are not actively traded and have a variable interest rate structure based upon market rates currently available to us for debt with similar terms and maturities. See Note 11. *Bridge Commitment Letter, Term Loan and Revolving Credit Facilities* of the *Notes to Consolidated Financial Statements* in this Annual Report for more information on these borrowings.

Our contingent consideration receivable, which was recorded in connection with the Software Integrity Divestiture, was classified within Level 3 because it was estimated using significant inputs that were not observable in the market. See Note 3. *Discontinued Operation* of the *Notes to Consolidated Financial Statements* in this Annual Report for additional information.

Assets/Liabilities Measured at Fair Value on a Recurring Basis

Assets and liabilities measured at fair value on a recurring basis are summarized below as of October 31, 2024:

Description	Total	Fair Value Measurement Using		
		Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
		(in thousands)		
Assets				
Cash equivalents:				
Money market funds	\$ 869,972	\$ 869,972	\$ —	\$ —
U.S. Treasury, agency & T-bills	7,985	—	7,985	—
Short-term investments:				
U.S. Treasury, agency & T-bills	19,449	—	19,449	—
Corporate debt securities	105,256	—	105,256	—
Asset-backed securities	29,164	—	29,164	—
Prepaid and other current assets:				
Foreign currency derivative contracts	8,851	—	8,851	—
Contingent consideration receivable	22,202	—	—	22,202
Other long-term assets:				
Deferred compensation plan assets	386,757	386,757	—	—
Total assets	\$ 1,449,636	\$ 1,256,729	\$ 170,705	\$ 22,202
Liabilities				
Accounts payable and accrued liabilities:				
Foreign currency derivative contracts	\$ 7,032	\$ —	\$ 7,032	\$ —
Other long-term liabilities:				
Deferred compensation plan liabilities	386,757	386,757	—	—
Total liabilities	\$ 393,789	\$ 386,757	\$ 7,032	\$ —

Assets and liabilities measured at fair value on a recurring basis are summarized below as of October 31, 2023:

Description	Fair Value Measurement Using			
	Total	Quoted Prices in Active Markets for Identical Assets (Level 1)	Significant Other Observable Inputs (Level 2)	Significant Unobservable Inputs (Level 3)
		(in thousands)		
Assets				
Cash equivalents:				
Money market funds	\$ 10,129	\$ 10,129	\$ —	\$ —
U.S. Treasury, agency & T-bills	2,994	—	2,994	—
Short-term investments:				
U.S. Treasury, agency & T-bills	15,689	—	15,689	—
Municipal bonds	499	—	499	—
Corporate debt securities	102,375	—	102,375	—
Asset-backed securities	33,076	—	33,076	—
Prepaid and other current assets:				
Foreign currency derivative contracts	13,453	—	13,453	—
Other long-term assets:				
Deferred compensation plan assets	297,180	297,180	—	—
Total assets	\$ 475,395	\$ 307,309	\$ 168,086	\$ —
Liabilities				
Accounts payable and accrued liabilities:				
Foreign currency derivative contracts	\$ 15,761	\$ —	\$ 15,761	\$ —
Other long-term liabilities:				
Deferred compensation plan liabilities	297,180	297,180	—	—
Total liabilities	\$ 312,941	\$ 297,180	\$ 15,761	\$ —

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

Non-Marketable Equity Securities

Non-marketable equity securities are classified within Level 3 as they are valued using a combination of observable transaction price and unobservable inputs or data in an inactive market due to the absence of market price and inherent lack of liquidity.

Note 11. Bridge Commitment Letter, Term Loan and Revolving Credit Facilities

On January 15, 2024, we entered into the Bridge Commitment Letter with certain financial institutions that committed to provide, subject to the satisfaction of customary closing conditions, the Bridge Commitment. The Bridge Commitment currently provides for an aggregate principal amount of up to \$10.6 billion. The proceeds of any borrowing under the Bridge Commitment will be used for the purpose of financing a portion of the cash consideration to be paid in the Ansys Merger and paying related fees and expenses in connection with the Ansys Merger and the other transactions contemplated by the Merger Agreement.

The commitments to provide the Bridge Commitment may be terminated in whole or reduced in part, at our discretion. In addition, the Bridge Commitment Letter provides that net cash proceeds received from certain debt and equity issuances or the sale of certain businesses and assets, including the Software Integrity Divestiture, as well as term loan commitments under certain qualifying term loan facilities, will result in mandatory commitment reductions under the Bridge Commitment. On October 3, 2024, we reduced the Bridge Commitment by \$1.1 billion to \$10.6 billion following the closing of the Software Integrity Divestiture.

On February 13, 2024, we entered into the Term Loan Agreement in connection with the financing of the pending Ansys Merger. The Term Loan Agreement provides us with the ability to borrow up to \$4.3 billion at the closing of the Ansys Merger, subject to the satisfaction of customary closing conditions for similar facilities, for the purpose of financing a portion of the cash consideration to be paid in the Ansys Merger and paying related fees and expenses in connection with the Ansys Merger and the other transactions contemplated by the Merger Agreement.

The Term Loan Agreement provides for two tranches of senior unsecured term loans: a \$1.45 billion tranche (Tranche 1) that matures two years after funding and a \$2.85 billion tranche (Tranche 2) that matures three years after funding. There was no outstanding balance under the Term Loan Agreement as of October 31, 2024.

The Term Loan Agreement contains a financial covenant requiring that Synopsys maintain a maximum consolidated leverage ratio commencing the last day of the first fiscal quarter ending on or after the completion of the Ansys Merger, as well as other non-financial covenants. Under the Term Loan Agreement, borrowings will bear interest on the principal amount outstanding at a floating rate based on, at Synopsys' election, (i) the Adjusted Term SOFR Rate (as defined in the Term Loan Agreement) plus an applicable margin based on the credit ratings of Synopsys ranging from 0.875% to 1.375% (in the case of Tranche 1) or 1.000% to 1.500% (in the case of Tranche 2) or (ii) the ABR (as defined in the Term Loan Agreement) plus an applicable margin based on the credit ratings of Synopsys ranging from 0.000% to 0.375% (in the case of Tranche 1) or 0.000% to 0.500% (in the case of Tranche 2).

On May 14, 2024, a ticking fee began to accrue under the Term Loan Agreement in an amount equal to a rate per annum equal to 0.10% times the actual daily undrawn portion of the commitments in respect of the term loan facility. This ticking fee will accrue until the earlier of (i) termination or expiration of the commitments under the term loan facility or (ii) the funding of the commitments, at which point the accrued amount of the ticking fee will become payable.

On February 13, 2024, we entered into a Sixth Amendment Agreement (the Sixth Amendment), which amended and restated our previous revolving credit agreement, dated as of December 14, 2022 (as amended and restated, the Revolving Credit Agreement).

The Revolving Credit Agreement provides an unsecured \$850.0 million committed multicurrency revolving credit facility and an unsecured uncommitted incremental revolving loan facility of up to \$150.0 million. The maturity date of the revolving credit facility is December 14, 2027, which may be extended at our option.

Under the Sixth Amendment, certain amendments became effective on February 13, 2024 and certain additional amendments will become effective upon the completion of the Ansys Merger. Upon the effective date, the Sixth Amendment amended the financial covenant to allow netting of the cash proceeds of certain debt incurred to finance the Ansys Merger as well as certain other modifications set forth therein. Upon the completion of the Ansys Merger, the Sixth Amendment, among other things: (i) amends the applicable margin used to determine the interest that accrues on loans and the facility fee payable under the revolving credit facility to be based on our credit ratings, (ii) amends the financial covenant thresholds under the financial covenant in the Revolving Credit Agreement requiring us to maintain a maximum consolidated leverage ratio and (iii) amends certain conditions to borrowing, other non-financial covenants and events of default.

The Revolving Credit Agreement contains a financial covenant requiring us to maintain a maximum consolidated leverage ratio, as well as other non-financial covenants. As of October 31, 2024, we were in compliance with the financial covenant.

Interest accrues on dollar-denominated loans at a floating rate based on, at Synopsys' election, (i) the Adjusted Term SOFR Rate (as defined in the Revolving Credit Agreement) plus an applicable margin or (ii) the ABR (as defined in the Revolving Credit Agreement) plus an applicable margin. The applicable margin for Adjusted Term SOFR Rate based loans ranges from 0.785% to 0.975%, based upon Synopsys' consolidated leverage ratio. The applicable margin for ABR based loans is 0.000%. In addition to the interest on any outstanding loans, Synopsys is also required to pay a facility fee on the entire portion of the revolving credit facility ranging from 0.09% to 0.15% based on Synopsys' consolidated leverage ratio on the daily amount of the revolving commitment.

Subject to the completion of the Ansys Merger, interest under the Revolving Credit Agreement will accrue on dollar-denominated loans at a floating rate based on, at Synopsys' election, (i) the Adjusted Term SOFR Rate plus an applicable margin based on our credit ratings ranging from 0.795% to 1.200% or (ii) the ABR plus an applicable margin based on our credit ratings ranging from 0.000% to 0.200%. In addition to the interest on any outstanding

loans, Synopsys will also be required to pay a facility fee on the entire portion of the revolving credit facility ranging from 0.080% to 0.175% based on the credit ratings of Synopsys on the daily amount of the revolving commitment.

There was no outstanding balance under the Revolving Credit Agreement as of October 31, 2024 and October 31, 2023.

In July 2018, we entered into a 12-year 220.0 million Renminbi (approximately \$33.0 million) credit agreement with a lender in China to support our facilities expansion. Borrowings bear interest at a floating rate based on the 5-year Loan Prime Rate plus 0.74%. As of October 31, 2024, we had a \$15.6 million outstanding balance under the agreement. The carrying amount of the short-term and long-term debt approximates the estimated fair value.

Note 12. Leases

We have operating lease arrangements for office space, data center, equipment and other corporate assets. These leases have various expiration dates through December 31, 2042, some of which include options to extend the leases for up to 10 years. Because we are not reasonably certain to exercise these renewal options, the options are not considered in determining the lease term and associated potential option payments are excluded from lease payments.

The components of our lease expense during the period presented are as follows:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Operating lease expense ⁽¹⁾	\$ 92,222	\$ 90,680	\$ 85,631
Variable lease expense ⁽²⁾	23,835	20,395	11,379
Total lease expense	\$ 116,057	\$ 111,075	\$ 97,010

⁽¹⁾ Operating lease expense includes immaterial amounts of short-term leases, net of sublease income.

⁽²⁾ Variable lease expense includes payments to lessors that are not fixed or determinable at lease commencement date. These payments primarily consist of maintenance, property taxes, insurance and variable indexed based payments.

Supplemental cash flow information during the period presented is as follows:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Cash paid for amounts included in the measurement of operating lease liabilities ⁽¹⁾	\$ 99,905	\$ 88,983	\$ 83,858
ROU assets obtained in exchange for operating lease liabilities ⁽²⁾	\$ 100,480	\$ 101,390	\$ 168,095

⁽¹⁾ Cash paid for amounts included in the measurement of operating lease liabilities included cash from discontinued operations of \$5.2 million, \$5.7 million and \$6.3 million for the periods presented.

⁽²⁾ ROU assets obtained in exchange for operating lease liabilities included ROU assets from discontinued operations of \$2.2 million, \$1.2 million and \$1.6 million for the periods presented.

Lease term and discount rate information related to our operating leases as of the end of the period presented are as follows:

	As of October 31,	
	2024	2023
Weighted-average remaining lease term (in years)	7.59	8.44
Weighted-average discount rate	2.86 %	2.5 %

The following table represents the maturities of our future lease payments due under operating leases as of October 31, 2024:

[Table of Contents](#)

<u>Fiscal year</u>	<u>Lease Payments</u> <u>(in thousands)</u>
2025	\$ 111,332
2026	112,130
2027	109,380
2028	94,005
2029	86,579
2030 and thereafter	233,161
Total future minimum lease payments	746,587
Less: Imputed interest	77,731
Total lease liabilities	<u>\$ 668,856</u>

In addition, certain facilities owned by us were leased to third parties under non-cancellable operating lease agreements. These leases have annual escalating payments and have expiration dates through March 31, 2031 in accordance with the terms and conditions of the existing agreement. The lease receipts from owned facilities, including sublease income from other facilities leased by us, due to us as of October 31, 2024, are as follows:

<u>Fiscal year</u>	<u>Lease Receipts</u> <u>(in thousands)</u>
2025	\$ 24,479
2026	25,333
2027	26,452
2028	27,245
2029	28,063
2030 and thereafter	28,429
Total	<u>\$ 160,001</u>

Note 13. Contingencies

Legal Proceedings

We are subject to routine legal proceedings, as well as demands, claims and threatened litigation that arise in the normal course of our business. The ultimate outcome of any litigation is often uncertain and unfavorable outcomes could have a negative impact on our results of operations and financial condition. We regularly review the status of each significant matter and assess its potential financial exposure. If the potential loss from any claim or legal proceeding is considered probable and the amount is estimable, we accrue a liability for the estimated loss. Legal proceedings are inherently uncertain and as circumstances change, it is possible that the amount of any accrued liability may increase, decrease, or be eliminated.

We have determined that, except as set forth below, no disclosure of estimated loss is required for a claim against us because: (1) there is not a reasonable possibility that a loss exceeding amounts already recognized (if any) may be incurred with respect to such claim; (2) a reasonably possible loss or range of loss cannot be estimated; or (3) such estimate is immaterial.

Mentor Patent Litigation

Prior to the legal settlement as further described below, we were engaged in complex patent litigation with Mentor Graphics Corporation (Mentor) involving several actions in different forums. We succeeded to the litigation when we acquired Emulation & Verification Engineering S.A. on October 4, 2012.

Legal Settlement

In March 2017, Siemens PLM Software (now Siemens Industry Software Inc. or SISW)) acquired Mentor. On June 29, 2018, we, SISW and Mentor settled all outstanding patent litigation between us and Mentor for a \$65.0 million payment made from us to Mentor. As a result of the settlement, the litigation with Mentor was dismissed and the injunction entered in connection with that litigation was vacated. The settlement included mutual seven-year patent cross-licenses between us and SISW, and between us and Mentor. We and Mentor also amended an existing interoperability agreement to collaborate on a wide range of EDA products for the benefit of our mutual customers (the interoperability amendment). The interoperability amendment includes a one-time termination charge between \$0.0 and \$25.0 million, payable to SISW under certain conditions. Mentor no longer exists as an independent entity and is succeeded by SISW.

In June 2024, the parties extended the existing patent cross-license to December 31, 2031, and entered into a new cross-license of patents related to certain computer-aided engineering technology. The new cross-license is conditioned on the close of the Ansys Merger and expires on December 31, 2031. The interoperability amendment expires by its terms on June 29, 2025.

Tax Matters

We undergo examination from time to time by U.S. and foreign authorities for non-income based taxes, such as sales, use and value-added taxes, and are currently under examination by tax authorities in certain jurisdictions. If the potential loss from such examinations is considered probable and the amount or the range of loss could be estimated, we would accrue a liability for the estimated expense. In addition to the foregoing, we are, from time to time, party to various other claims and legal proceedings in the ordinary course of our business, including with tax and other governmental authorities. For a description of certain of these other matters, refer to *Note 18. Income Taxes* of the *Notes to Consolidated Financial Statements* in this Annual Report.

Note 14. Accumulated Other Comprehensive Income (Loss)

The components of accumulated other comprehensive income (loss), on an after-tax basis where applicable, are as follows:

	As of October 31,	
	2024	2023
	(in thousands)	
Cumulative currency translation adjustments	\$ (161,954)	\$ (170,104)
Unrealized gains (losses) on derivative instruments, net of taxes	(18,800)	(25,224)
Unrealized gains (losses) on available-for-sale securities, net of taxes	374	(1,086)
Total	<u>\$ (180,380)</u>	<u>\$ (196,414)</u>

The effect of amounts reclassified out of each component of accumulated other comprehensive income (loss) into net income is as follows:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Reclassifications:			
Gains (losses) on cash flow hedges, net of taxes			
Revenues	\$ 3,089	\$ (9,942)	\$ 10,975
Operating expenses	112	(15,334)	(15,869)
Total	<u>\$ 3,201</u>	<u>\$ (25,276)</u>	<u>\$ (4,894)</u>

Amounts reclassified in fiscal 2024, 2023, and 2022 primarily consisted of gains (losses) from our cash flow hedging activities. See *Note 9. Financial Assets and Liabilities* of the *Notes to Consolidated Financial Statements* in this Annual Report.

Note 15. Stock Repurchase Program

In fiscal 2022, our Board of Directors approved a stock repurchase program (the Program) with authorization to purchase up to \$1.5 billion of our common stock. As of October 31, 2024, \$194.3 million remained available for future repurchases under the Program. However, in connection with the pending Ansys Merger, we have suspended the Program until we reduce our expected debt levels.

Stock repurchase activities as well as the reissuance of treasury stock for employee stock-based compensation purposes are as follows:

	Year Ended October 31,		
	2024	2023 ⁽¹⁾	2022
	(in thousands, except per share price)		
Shares repurchased	74	2,992	3,609
Average purchase price per share	608.91 \$	387.92 \$	314.51
Aggregate purchase price	45,000 \$	1,160,724 \$	1,135,000
Reissuance of treasury stock	2,133	2,670	2,922

⁽¹⁾ Excludes 73,903 shares and \$45.0 million equity forward contract that was settled in November 2023.

Note 16. Employee Benefit Plans

Employee Stock Purchase Plan

Under our Employee Stock Purchase Plan (ESPP), participating employees are granted the right to purchase shares of common stock at a price per share that is 85% of the lesser of the fair market value of the shares at (1) the beginning of an offering period (generally, a rolling two year period) or (2) the purchase date (generally occurring at the end of each semi-annual purchase period), subject to the terms of ESPP, including a limit on the number of shares that may be purchased in a purchase period.

On April 12, 2022, our stockholders approved amendments to the ESPP to increase the number of shares of common stock authorized for issuance under the plan by 2.0 million shares. During fiscal 2024, 2023 and 2022, we issued 0.5 million, 0.6 million, and 0.7 million shares, respectively, under the ESPP at average per share prices of \$315.24, \$266.82 and \$195.48, respectively. As of October 31, 2024, 12.9 million shares of common stock were reserved for future issuance under the ESPP.

Equity Compensation Plans

2006 Employee Equity Incentive Plan. On April 25, 2006, our stockholders approved the 2006 Employee Equity Incentive Plan (2006 Employee Plan), which provides for the grant of incentive stock options, non-statutory stock options, restricted stock awards, restricted stock unit awards, stock appreciation rights and other forms of equity compensation, including performance stock awards and performance cash awards, as determined by the plan administrator. The terms and conditions of each type of award are set forth in the 2006 Employee Plan and in the award agreements governing particular awards.

Restricted stock units are granted under the 2006 Employee Plan as part of our incentive compensation program. In general, restricted stock units vest over three to four years and are subject to the employee's continuing service with us. Restricted stock units granted with specific performance criteria vest to the extent performance conditions are met. Restricted stock units granted with certain market conditions vest over two to three years to the extent these market conditions are met. For each restricted stock unit granted under the 2006 Employee Plan, a share reserve ratio of 1.70 is applied for the purpose of determining the remaining number of shares reserved for future grants under the plan. Options granted under this plan generally have a contractual term of seven years and generally vest over four years.

On April 10, 2024, our stockholders amended the 2006 Employee Plan to, among other things, increase the number of shares of common stock reserved for future issuance under the plan by 3.4 million shares. As of October 31, 2024, an aggregate of 1.3 million stock options and 3.9 million restricted stock units were outstanding, and 14.5 million shares were available for future issuance under the 2006 Employee Plan.

2017 Non-Employee Directors Equity Incentive Plans. On April 6, 2017, our stockholders approved the 2017 Non-Employee Directors Equity Incentive Plan (2017 Directors Plan). The 2017 Directors Plan provides for equity awards to non-employee directors in the form of stock options, restricted stock units, restricted stock or a combination thereof. On April 6, 2017, our stockholders approved an aggregate of 0.45 million shares of common stock reserved under the 2017 Directors Plan.

We grant restricted stock awards and options under the 2017 Directors Plan. Restricted stock awards generally vest on an annual basis and options vest over a period of three years. As of October 31, 2024, 3,751 shares of restricted stock awards were unvested and 12,792 stock options were outstanding, and a total of 365,203 shares of common stock were reserved for future issuance under the 2017 Directors Plan.

Other Assumed Stock Plans through Acquisitions. We have assumed certain outstanding stock awards of acquired companies, including restricted stock units and options. If these assumed equity awards are canceled, forfeited or expire unexercised, the underlying shares do not become available for future grant. As of October 31, 2024, 18 thousand shares of our common stock remained subject to such outstanding assumed equity awards.

Restricted Stock Units. The following table contains information concerning activities related to restricted stock units granted under the 2006 Employee Plan and assumed from acquisitions including those associated with our discontinued operations:

	Restricted Stock Units Outstanding ⁽¹⁾	Weighted Average Grant Date Fair Value	Weighted Average Remaining Contractual Life (In Years)	Aggregate Fair Value
	(in thousands, except per share amounts and years)			
Balance at October 31, 2021	4,187	\$ 193.58	1.39	
Granted ⁽²⁾	2,402	\$ 323.46		
Vested ⁽³⁾	(1,589)	\$ 170.36		\$ 529,766
Forfeited	(362)	\$ 228.70		
Balance at October 31, 2022	4,638	\$ 265.76	1.32	
Granted ⁽²⁾	2,083	\$ 394.34		
Vested ⁽³⁾	(1,839)	\$ 237.19		\$ 706,136
Forfeited	(365)	\$ 283.29		
Balance at October 31, 2023	4,517	\$ 335.26	1.41	
Granted ⁽²⁾	1,620	\$ 543.69		
Vested ⁽³⁾	(1,778)	\$ 303.23		\$ 962,127
Forfeited	(460)	\$ 395.74		
Balance at October 31, 2024	3,899	\$ 429.36	1.35	

⁽¹⁾ No restricted stock units were assumed in connection with acquisitions in the last three fiscal years.

⁽²⁾ The number of granted restricted stock units includes those granted to senior management with market-based and performance-based vesting criteria (in addition to service-based vesting criteria) (market-based RSUs) reported at the maximum possible number of shares that may ultimately be issuable if all applicable market-based and performance-based criteria are achieved at their maximum levels and all applicable service-based criteria are fully satisfied.

⁽³⁾ The number of vested restricted stock units includes shares that were withheld on behalf of employees to satisfy the minimum statutory tax withholding requirements.

Stock Options. The following table summarizes stock option activity and includes stock options granted under all equity plans including those associated with our discontinued operations:

	Options Outstanding			
	Shares Under Stock Option ⁽¹⁾	Weighted-Average Exercise Price per Share	Weighted-Average Remaining Contractual Life (In Years)	Aggregate Intrinsic Value
	(in thousands, except per share amounts and years)			
Balance at October 31, 2021	3,107	\$ 109.51	3.81	\$ 694,921
Granted	293	\$ 342.86		
Exercised	(1,126)	\$ 86.24		
Canceled/forfeited/expired	(114)	\$ 164.46		
Balance at October 31, 2022	2,160	\$ 150.37	3.57	\$ 328,120
Granted	294	\$ 361.64		
Exercised	(849)	\$ 109.83		
Canceled/forfeited/expired	(90)	\$ 245.86		
Balance at October 31, 2023	1,515	\$ 208.49	3.70	\$ 376,563
Granted	238	\$ 551.41		
Exercised	(429)	\$ 141.83		
Canceled/forfeited/expired	(42)	\$ 376.97		
Balance at October 31, 2024	1,282	\$ 288.91	3.63	\$ 301,781
Vested and expected to vest as of October 31, 2024	1,282	\$ 288.91	3.63	\$ 301,781
Exercisable at October 31, 2024	810	\$ 197.95	2.54	\$ 259,550

⁽¹⁾ No stock options were assumed in connection with acquisitions in the last three fiscal years, but the balance at fiscal year-end includes certain stock options that were previously assumed in connection with acquisitions.

The aggregate intrinsic value in the preceding table represents the pre-tax intrinsic value based on stock options with an exercise price less than our closing stock price of \$518.40 at the end of fiscal 2024. The pre-tax intrinsic value of options exercised and their average exercise prices including those associated with our discontinued operations are:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands, except per share price)		
Intrinsic value	\$ 185,663	\$ 241,385	\$ 273,524
Average exercise price per share	\$ 141.83	\$ 109.83	\$ 86.24

Restricted Stock Units and Stock Options. The following table contains additional information concerning activities related to stock options and restricted stock units that were granted under the 2006 Employee Plan and assumed from acquisitions including those associated with our discontinued operations:

	Available for Grant ⁽¹⁾⁽²⁾ (in thousands)
Balance at October 31, 2021	13,751
Options granted ⁽²⁾	(286)
Options canceled/forfeited/expired ⁽²⁾	114
Restricted stock units granted ⁽¹⁾⁽³⁾	(4,083)
Restricted stock units forfeited ⁽¹⁾	615
Additional shares reserved	3,000
Balance at October 31, 2022	13,111
Options granted ⁽²⁾	(294)
Options canceled/forfeited/expired ⁽²⁾	89
Restricted stock units granted ⁽¹⁾⁽³⁾	(3,540)
Restricted stock units forfeited ⁽¹⁾	620
Additional shares reserved	3,300
Balance at October 31, 2023	13,286
Options granted ⁽²⁾	(238)
Options canceled/forfeited/expired ⁽²⁾	40
Restricted stock units granted ⁽¹⁾⁽³⁾	(2,754)
Restricted stock units forfeited ⁽¹⁾	782
Additional shares reserved	3,400
Balance at October 31, 2024	14,516

⁽¹⁾ Restricted stock units includes awards granted under the 2006 Employee Plan and assumed through acquisitions. The number of RSUs reflects the application of the award multiplier of 1.70 as described above.

⁽²⁾ Options granted by us are not subject to the award multiplier ratio described above.

⁽³⁾ The number of granted restricted stock units includes market-based RSUs reported at the maximum possible number of shares that may ultimately be issuable if all applicable market-based and performance-based criteria are achieved at their maximum levels and all applicable service-based criteria are fully satisfied.

Restricted Stock Awards. The following table summarizes restricted stock award activities under the 2005 Directors Plan and 2017 Directors Plan:

	Restricted Shares	Weighted-Average Grant Date Fair Value
	(in thousands, except per share amounts)	
Unvested at October 31, 2021	5	\$ 261.01
Granted	5	\$ 310.02
Vested	(5)	\$ 261.01
Forfeited	—	\$ —
Unvested at October 31, 2022	5	\$ 310.02
Granted	5	\$ 387.79
Vested	(5)	\$ 310.02
Forfeited	—	\$ —
Unvested at October 31, 2023	5	\$ 387.79
Granted	3	\$ 561.23
Vested	(4)	\$ 382.88
Forfeited	—	\$ —
Unvested at October 31, 2024	4	\$ 541.51

Valuation and Expense of Stock-Based Compensation. We estimate the fair value of stock options and employee stock purchase rights under the ESPP on the grant date. The value of awards expected to vest is recognized as expense over the applicable service periods. We use the Black-Scholes option-pricing model to determine the fair value of stock options and employee stock purchase plan rights. The Black-Scholes option-pricing model incorporates various assumptions including expected volatility, expected term and interest rates. The expected volatility for both stock options and employee stock purchase rights is estimated by a combination of implied volatility for publicly traded options of our common stock with a term of six months or longer and the historical stock price volatility over the estimated expected term of such awards, which is based on historical experience.

Restricted stock units are valued based on the closing price of our common stock on the grant date. We use the straight-line attribution method to recognize stock-based compensation costs over the service period of the award except for performance-based RSUs and market-based RSUs.

We estimate the probability of achievement of applicable performance goals for performance-based RSUs in each reporting period and recognize related stock-based compensation expense using the graded-vesting method. The amount of stock-based compensation expense recognized in any period can vary based on the attainment or expected attainment of the various performance goals. If such performance goals are not ultimately met, no compensation expense is recognized and any previously recognized compensation expense is reversed.

We estimated the fair value of market-based RSUs on the grant date using a Monte Carlo simulation model. Under the award agreements, the vesting of the market-based RSUs is contingent on achieving total stockholder return (TSR) relative to a peer index as well as revenue growth metrics. The maximum potential awards that may be earned are 187.5% of the target number of the initial awards. For market-based RSUs granted in February, May, August and December 2022, the performance period during which the achievement goals was measured is fiscal 2022 and fiscal 2023. Following the achievement of the TSR target, revenue growth metrics, and service conditions, the first tranche of the awards vested in December 2023 and the second tranche of the awards will vest in December 2024. For market-based RSUs granted in February and August 2023, the performance period during which the achievement goals will be measured is fiscal 2023, fiscal 2024 and fiscal 2025. The awards will vest in December 2025 if the TSR target, revenue growth metrics, and service conditions are achieved. For market-based RSUs granted in December 2023, the performance period during which the achievement goals will be measured is fiscal 2024, fiscal 2025 and fiscal 2026. The awards will vest in December 2026 if the TSR target, revenue growth metrics, and service conditions are achieved.

[Table of Contents](#)

The assumptions presented in the following table are used to estimate the fair value of stock options and employee stock purchase rights granted under our stock plans:

	Year Ended October 31,		
	2024	2023	2022
Stock Options:			
Expected life (in years)	4.1	4.1	4.1
Risk-free interest rate	3.62% - 4.61%	3.8% - 4.80%	1.07% - 4.42%
Volatility	32.09% - 35.42%	32.74% - 36.16%	32.28% - 37.04%
Weighted average estimated fair value	\$178.67	\$120.33	\$98.07
ESPP:			
Expected life (in years)	0.5 - 2.0	0.5 - 2.0	0.5 - 2.0
Risk-free interest rate	3.88% - 5.27%	4.85% - 5.38%	0.67% - 3.44%
Volatility	31.40% - 34.39%	28.03% - 35.27%	34.51% - 38.69%
Weighted average estimated fair value	\$179.10	\$120.82	\$102.63

The grant date fair value of the market-based RSUs and the assumptions used in the Monte Carlo simulation model to determine the grant date fair value during the periods are as follows:

	Year Ended October 31,		
	2024	2023	2022
Expected life (in years)	2.89	0.90 - 2.70	1.16 - 1.69
Risk-free interest rate	4.41%	4.36% - 4.80%	1.33% - 3.46%
Volatility	34.03%	34.79% - 42.86%	33.01% - 37.80%
Grant date fair value	\$600.29	\$357.29 - \$465.79	\$280.52 - \$412.20

The compensation cost recognized in the consolidated statements of income for our stock compensation arrangements is as follows:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Cost of products	\$ 66,403	\$ 49,896	\$ 43,618
Cost of maintenance and service	32,189	29,572	24,146
Research and development expense	359,244	282,540	233,772
Sales and marketing expense	121,524	91,082	70,607
General and administrative expense	78,575	60,004	49,606
Stock-based compensation expense from continuing operations before taxes	657,935	513,094	421,749
Stock-based compensation expense from discontinued operations before taxes	34,381	50,198	37,280
Total stock-based compensation expense before taxes	692,316	563,292	459,029
Income tax benefit	(115,271)	(90,915)	(74,271)
Stock-based compensation expense after taxes	\$ 577,045	\$ 472,377	\$ 384,758

As of October 31, 2024, we had \$1.3 billion of total unrecognized stock-based compensation expense relating to options, RSUs and restricted stock awards, which is expected to be recognized over a weighted average period of 2.3 years. As of October 31, 2024, we had \$111.2 million of total unrecognized stock-based compensation expense relating to the ESPP, which is expected to be recognized over a period of 2.0 years.

Deferred Compensation Plan. We maintain the Synopsys Deferred Compensation Plan (Deferred Plan), which permits eligible employees to defer up to 50% of their annual cash base compensation and up to 100% of their eligible cash variable compensation. Amounts may be withdrawn from the Deferred Plan pursuant to elections made

by the employees in accordance with the terms of the plan. Since the inception of the Deferred Plan, we have not made any matching or discretionary contributions to the Deferred Plan. There are no Deferred Plan provisions that provide for any guarantees or minimum return on investments. Undistributed amounts under the Deferred Plan are subject to the claims of our creditors.

Deferred plan assets and liabilities are as follows:

	As of October 31,			
	2024		2023	
	(in thousands)			
Plan assets recorded in other long-term assets	\$	386,757	\$	297,180
Plan liabilities recorded in other long-term liabilities ⁽¹⁾	\$	386,757	\$	297,180

⁽¹⁾ Undistributed deferred compensation balances due to participants.

Income or loss from the change in fair value of the Deferred Plan assets is recorded in interest and other income (expense), net. The increase or decrease in the fair value of the undistributed Deferred Plan obligation is recorded in total cost of revenue and operating expense. The following table summarizes the impact of the Deferred Plan:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Increase (reduction) to cost of revenue and operating expense	\$ 85,446	\$ 20,196	\$ (67,516)
Interest and other income (expense), net	85,446	20,196	(67,516)
Net increase (decrease) to net income	\$ —	\$ —	\$ —

Other Retirement Plans. We sponsor various defined contribution retirement plans for our eligible U.S. and non-U.S. employees. Total contributions to these plans were \$51.3 million, \$50.8 million, and \$44.0 million in fiscal 2024, 2023, and 2022, respectively. For employees in the United States and Canada, we match pre-tax employee contributions up to a maximum of U.S. \$3,000 and Canadian \$4,000, respectively, per participant per year.

Certain of our international subsidiaries sponsor defined benefit retirement plans. The unfunded projected benefit obligation for these defined benefit retirement plans as of October 31, 2024 and 2023 was immaterial and recorded in other long-term liabilities in our consolidated balance sheets.

Note 17. Net Income Per Share

The table below reconciles the weighted average common shares used to calculate basic net income per share with the weighted average common shares used to calculate diluted net income per share:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands, except per share amounts)		
Numerator:			
Net income from continuing operations attributed to Synopsys	\$ 1,441,710	\$ 1,227,045	\$ 970,225
Net income from discontinued operations attributed to Synopsys	821,670	2,843	14,369
Net income attributed to Synopsys	<u>\$ 2,263,380</u>	<u>\$ 1,229,888</u>	<u>\$ 984,594</u>
Denominator:			
Weighted average common shares for basic net income per share	153,138	152,146	153,002
Dilutive effect of common share equivalents from equity-based compensation	2,806	3,049	3,483
Weighted average common shares for diluted net income per share	<u>155,944</u>	<u>155,195</u>	<u>156,485</u>
Net income per share attributed to Synopsys - basic:			
Continuing operations	\$ 9.41	\$ 8.06	\$ 6.34
Discontinued operations	5.37	0.02	0.10
Basic net income per share	<u>\$ 14.78</u>	<u>\$ 8.08</u>	<u>\$ 6.44</u>
Net income per share attributed to Synopsys - diluted:			
Continuing operations	\$ 9.25	\$ 7.91	\$ 6.20
Discontinued operations	5.26	0.01	0.09
Diluted net income per share	<u>\$ 14.51</u>	<u>\$ 7.92</u>	<u>\$ 6.29</u>
Anti-dilutive employee stock-based awards excluded	229	475	281

Note 18. Income Taxes

The domestic and foreign components of our total income before provision for income taxes are as follows:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
United States	\$ 1,333,132	\$ 1,144,410	\$ 1,028,829
Foreign	180,726	161,060	74,623
Total income before provision for income taxes	<u>\$ 1,513,858</u>	<u>\$ 1,305,470</u>	<u>\$ 1,103,452</u>

The components of the provision (benefit) for income taxes are as follows:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Current:			
Federal	\$ 345,859	\$ 252,186	\$ 109,030
State	19,808	23,042	23,593
Foreign	110,021	22,869	43,076
	<u>475,688</u>	<u>298,097</u>	<u>175,699</u>
Deferred:			
Federal	(312,677)	(191,249)	(38,901)
State	(39,164)	(219)	(1,067)
Foreign	(24,129)	(16,441)	3,654
	<u>(375,970)</u>	<u>(207,909)</u>	<u>(36,314)</u>
Provision (benefit) for income taxes	<u>\$ 99,718</u>	<u>\$ 90,188</u>	<u>\$ 139,385</u>

The provision (benefit) for income taxes differs from the taxes computed with the statutory federal income tax rate as follows:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Statutory federal tax	\$ 317,912	\$ 274,149	\$ 231,723
State tax (benefit), net of federal effect	48,393	438	(2,870)
Federal tax credits	(70,119)	(60,500)	(55,708)
Tax (benefit) on foreign earnings	3,316	(17,571)	23,709
Foreign-derived intangible income deduction	(104,835)	(80,034)	(38,816)
Tax settlements	—	(23,752)	—
Stock-based compensation	(43,419)	(39,995)	(50,469)
Changes in valuation allowance	(57,371)	29,631	19,794
Other	5,841	7,822	12,022
Provision (benefit) for income taxes	<u>\$ 99,718</u>	<u>\$ 90,188</u>	<u>\$ 139,385</u>

On December 22, 2017, the Tax Cuts and Jobs Act (Tax Act) was enacted, which significantly changed prior U.S. tax law and includes numerous provisions that affect our business. Effective in our fiscal 2023 year, the Tax Act requires that research and development expenditures are capitalized and amortized instead of being deducted when incurred. Domestic research is capitalized over five years and foreign research is capitalized over fifteen years. Capitalization of research and development expenditures also results in a corresponding deferred tax benefit and decreased our effective tax rate due to increasing the foreign-derived intangible income deduction.

We have provided for foreign withholding taxes on undistributed earnings of certain of our foreign subsidiaries to the extent such earnings are no longer considered to be indefinitely reinvested in the operations of those subsidiaries. Where foreign subsidiaries are considered indefinitely reinvested, and if the tax effect of undistributed earnings and other outside basis differences were recognized, the nature of taxes expected would primarily be withholding, taxes in non-conforming states, and taxes on intermediate holding companies outside of the U.S., net of foreign tax credits where available. As of October 31, 2024, the taxes due, after allowable foreign tax credits, are not expected to be material.

The significant components of deferred tax assets and liabilities are as follows:

	As of October 31,	
	2024	2023
	(in thousands)	
Net deferred tax assets:		
Deferred tax assets:		
Deferred revenue	\$ 37,849	\$ 37,641
Deferred compensation	73,869	69,824
Intangible and depreciable assets	65,489	94,299
Capitalized research and development costs	978,085	591,617
Stock-based compensation	74,934	64,326
Tax loss carryovers	37,787	36,804
Foreign tax credit carryovers	42,534	41,584
Research and other tax credit carryovers	107,643	178,416
Operating Lease Liabilities	108,235	118,679
Accruals and reserves	49,935	27,636
Gross deferred tax assets	1,576,360	1,260,826
Valuation allowance	(170,672)	(221,713)
Total deferred tax assets	1,405,688	1,039,113
Deferred tax liabilities:		
Intangible assets	80,034	98,305
Operating lease Right-of-Use-Assets	84,512	94,068
Accruals and reserves	—	602
Undistributed earnings of foreign subsidiaries	8,800	8,900
Other	21,641	19,169
Total deferred tax liabilities	194,987	221,044
Net deferred tax assets	\$ 1,210,701	\$ 818,069

It is more likely than not that the results of future operations will be able to generate sufficient taxable income to realize the net deferred tax assets. The valuation allowance provided against our deferred tax assets as of October 31, 2024 is mainly attributable to foreign tax credits available to non-U.S. subsidiaries and the California research credits. The valuation allowance decreased by a net of \$51.0 million in fiscal 2024, primarily related to anticipated utilization of California research credits.

We have the following tax loss and credit carryforwards available to offset future income tax liabilities:

<u>Carryforward</u>	Amount	Expiration Date
	(in thousands)	
Federal net operating loss carryforward	\$ 69,062	2025-2043
Federal research credit carryforward	6,214	2025-2035
Federal foreign tax credit carryforward	34,217	2034
International foreign tax credit carryforward	5,337	Indefinite
International net operating loss carryforward	51,326	2027-Indefinite
California research credit carryforward	151,380	Indefinite
Other state research credit carryforward	25,621	2027-2044
State net operating loss carryforward	138,482	2028-2045

The federal and state net operating loss carryforward is from acquired companies and the annual use of such loss is subject to significant limitations under Internal Revenue Code Section 382. Foreign tax credits may only be used to offset tax attributable to foreign source income.

The gross unrecognized tax benefits decreased by approximately \$3.0 million during fiscal 2024 resulting in gross unrecognized tax benefits of \$61.9 million as of October 31, 2024. A reconciliation of the beginning and ending balance of gross unrecognized tax benefits is summarized as follows:

	As of October 31,	
	2024	2023
	(in thousands)	
Beginning balance	\$ 64,880	\$ 71,898
Increases in unrecognized tax benefits related to prior year tax positions	1,106	211
Decreases in unrecognized tax benefits related to prior year tax positions	(8,639)	(25,678)
Increases in unrecognized tax benefits related to current year tax positions	8,036	8,029
Reductions in unrecognized tax benefits due to lapse of applicable statute of limitations	(4,380)	(249)
Increases in unrecognized tax benefits acquired	161	165
Changes in unrecognized tax benefits due to foreign currency translation	690	10,504
Ending balance	\$ 61,854	\$ 64,880

As of October 31, 2024 and 2023, approximately \$61.9 million and \$64.9 million, respectively, of the unrecognized tax benefits would affect our effective tax rate if recognized upon resolution of the uncertain tax positions.

Interest and penalties related to estimated obligations for tax positions taken in our tax returns are recognized as a component of income tax expense (benefit) in the consolidated statements of income and totaled approximately \$(1.0) million, \$(10.6) million and \$0.8 million for fiscal years 2024, 2023 and 2022, respectively. As of October 31, 2024 and 2023, the combined amount of accrued interest and penalties related to tax positions taken on our tax returns were approximately \$1.1 million and \$2.1 million, respectively.

The timing of the resolution of income tax examinations, and the amounts and timing of various tax payments that are part of the settlement process, are highly uncertain. Variations in such amounts and/or timing could cause large fluctuations in the balance sheet classification of current and non-current assets and liabilities. We believe that in the coming 12 months, it is reasonably possible that either certain audits and ongoing tax litigation will conclude or the statute of limitations on certain state and foreign income and withholding taxes will expire, or both. Given the uncertainty as to ultimate settlement terms, the timing of payment and the impact of such settlements on other uncertain tax positions, the range of the estimated potential decrease in underlying unrecognized tax benefits is between \$0.0 and \$12.0 million.

[Table of Contents](#)

We and/or our subsidiaries remain subject to tax examination in the following jurisdictions:

<u>Jurisdiction</u>	<u>Year(s) Subject to Examination</u>
United States	Fiscal years after 2020
California	Fiscal years after 2019
Ireland	Fiscal years after 2019
Japan	Fiscal years after 2019
Korea	Fiscal years after 2020
Taiwan	Fiscal years after 2022
China	Fiscal years after 2014
India	Fiscal years after 2019

In addition, we have made acquisitions with operations in several of our significant jurisdictions which may have years subject to examination different from the years indicated in the above table.

Non-U.S. Examinations

Hungarian Tax Authority

In 2017, the Hungarian Tax Authority (the HTA) assessed withholding taxes of approximately \$25.0 million and interest and penalties of \$11.0 million, against our Hungary subsidiary (Synopsys Hungary). Synopsys Hungary contested the assessment with the Hungarian Administrative Court (Administrative Court). In 2018, Synopsys Hungary paid the assessment. Following years of litigation, the Administrative Court issued its written decision in favor of Synopsys Hungary on May 17, 2023, and the HTA subsequently refunded Synopsys Hungary the tax, penalty and interest paid in fiscal 2018, as well as additional interest all totaling \$39.1 million (including foreign currency effects). During the third quarter of fiscal 2023, we released our unrecognized tax benefit and offsetting U.S. foreign tax credits, resulting in a net benefit of \$23.8 million.

We are also under examination by the tax authorities in certain other jurisdictions. No material assessments have been proposed in these examinations.

Legislative Developments

Effective our fiscal 2024, we are subject to the new 15% corporate alternative minimum tax (CAMT) enacted as part of the Inflation Reduction Act of 2022. We do not expect any impact of CAMT in fiscal 2024, due to our regular tax liability exceeding CAMT. The details of the computation will be subject to final regulations to be issued by the U.S. Department of the Treasury. We will monitor regulatory developments and will continue to evaluate the impact, if any, of the minimum tax.

The IR Act imposes a 1% excise tax on the fair market value of stock repurchases made by covered corporations after December 31, 2022. The total taxable value of shares repurchased is reduced by the fair market value of any newly issued shares during the taxable year. As of October 31, 2024, this does not have any impact on our consolidated financial statements.

On June 27, 2024, California enacted SB-167, which suspends the use of California net operating loss and limits the use of California research tax credits to \$5 million for our fiscal 2025-2027. On June 29, 2024, California enacted SB-175, which provides a refund mechanism effective beginning in our fiscal 2025 for the incremental tax that was paid as a result of SB-167.

The Organization for Economic Co-operation and Development (OECD) has a two-pillar solution to address tax challenges arising from digitalization of the economy. Included in this two-pillar solution is the Pillar Two Model Rules (Pillar Two) which defines a global minimum tax rules and includes a 15% minimum tax rate. Various countries have started to enact new laws related to Pillar Two, including certain new laws effective beginning in fiscal 2025. Based on our preliminary analysis, we are not expecting the impact of Pillar 2 to be material.

Note 19. Interest and Other Income (Expense), Net

The following table presents the components of interest and other income (expense), net:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Interest income	\$ 67,017	\$ 36,674	\$ 8,545
Interest expense	(35,161)	(1,178)	(1,698)
Gains (losses) on assets related to deferred compensation plan	85,446	20,196	(67,516)
Gain on sale of strategic investments	55,077	—	—
Foreign currency exchange gains (losses)	6,294	(1,529)	4,694
Other, net	(20,526)	(21,932)	10,713
Total	<u>\$ 158,147</u>	<u>\$ 32,231</u>	<u>\$ (45,262)</u>

Note 20. Segment Disclosure

Segment reporting is based upon the “management approach,” i.e., how management organizes our operating segments for which separate financial information is (1) available and (2) evaluated regularly by the CODM in deciding how to allocate resources and in assessing performance. Our CODM is our CEO.

We have two reportable segments: (1) Design Automation, which includes our advanced silicon design, verification products and services, system integration products and services, digital, custom and FPGA IC design software, verification software and hardware products, manufacturing software products and other; and (2) Design IP, which includes our interface, foundation, security, and embedded processor IP, IP subsystems, and IP implementation services.

The financial information provided to and used by the CODM to assist in making operational decisions, allocating resources, and assessing performance includes consolidated financial information as well as revenue, adjusted operating income, and adjusted operating margin information for the Design Automation, and Design IP segments, accompanied by disaggregated information relating to revenue by geographic region.

The Software Integrity business constituted its own reportable segment under Topic 280. In accordance with applicable accounting guidance, the results of the Software Integrity business are presented as discontinued operations in the consolidated statements of income and, as such, have been excluded from both continuing operations and segment results for all periods presented. See Note 3. *Discontinued Operations* of the *Notes to Consolidated Financial Statements* in this Annual Report.

Information by reportable segment is as follows:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Total Segments:			
Revenue	\$ 6,127,436	\$ 5,318,014	\$ 4,615,714
Adjusted operating income	2,362,059	1,928,027	1,579,899
Adjusted operating margin	39 %	36 %	34 %
Design Automation:			
Revenue	\$ 4,221,122	\$ 3,775,288	\$ 3,300,173
Adjusted operating income	1,631,885	1,413,926	1,176,101
Adjusted operating margin	39 %	37 %	36 %
Design IP:			
Revenue	\$ 1,906,314	\$ 1,542,726	\$ 1,315,541
Adjusted operating income	730,174	514,101	403,798
Adjusted operating margin	38 %	33 %	31 %

Certain operating expenses are not allocated to the segments and are managed at a consolidated level. The unallocated expenses managed at a consolidated level, including amortization of acquired intangible assets, stock-based compensation, changes in the fair value of deferred compensation plan, restructuring charges, and acquisition/divestiture related items, are presented in the table below to provide a reconciliation of the total adjusted operating income from segments to our consolidated operating income from continuing operations:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Total segment adjusted operating income	\$ 2,362,059	\$ 1,928,027	\$ 1,579,899
Reconciling items:			
Amortization of acquired intangible assets	(124,234)	(54,576)	(56,311)
Stock-based compensation expense	(657,935)	(513,094)	(421,749)
Deferred compensation plan	(85,446)	(20,196)	67,516
Restructuring charges	—	(53,091)	(11,221)
Acquisition/divestiture related items	(138,733)	(13,831)	(9,420)
Total operating income	\$ 1,355,711	\$ 1,273,239	\$ 1,148,714

The CODM does not use total assets by segment to evaluate segment performance or allocate resources. As a result, total assets by segment are not disclosed.

In allocating revenue to particular geographic areas, the CODM considers where individual “seats” or licenses to our products are located. Revenue is defined as revenue from external customers. Revenue and property and equipment, net, related to operations in the United States and other geographic areas are:

	Year Ended October 31,		
	2024	2023	2022
	(in thousands)		
Revenue:			
United States	\$ 2,739,756	\$ 2,462,009	\$ 2,094,470
Europe	614,584	514,780	430,369
China	989,524	855,023	774,265
Korea	773,018	625,502	523,501
Other	1,010,554	860,700	793,109
Consolidated	<u>\$ 6,127,436</u>	<u>\$ 5,318,014</u>	<u>\$ 4,615,714</u>

	As of October 31,	
	2024	2023
	(in thousands)	
Property and Equipment, net:		
United States	\$ 335,306	\$ 334,272
Other	227,700	215,565
Total	<u>\$ 563,006</u>	<u>\$ 549,837</u>

Geographic revenue data for multi-regional, multi-product transactions reflect internal allocations and are therefore subject to certain assumptions and to our allocation methodology.

One customer, including its subsidiaries, accounted for 12.6%, 13.5%, and 12.8% of our consolidated revenue in fiscal 2024, 2023, and 2022, respectively. No customer accounted for over 10% of our accounts receivable as of October 31, 2024. One customer accounted for 12.1% of our accounts receivable as of October 31, 2023.

Note 21. Restructuring Charges

In the first quarter of fiscal 2023, we initiated a restructuring plan for involuntary employee terminations as part of a business reorganization (the 2023 Plan). The 2023 Plan was substantially completed in the third quarter of fiscal 2023 and total charges under the 2023 Plan consisting primarily of severance costs and facility exit costs were \$77.0 million, of which \$23.9 million were related to discontinued operations.

During fiscal 2024, we made payments of \$3.6 million related to continuing operations and \$0.5 million related to discontinued operations under the 2023 Plan. As of October 31, 2024, the payroll and related benefits liabilities of \$0.8 million were recorded in accounts payable and accrued liabilities, and the remaining outstanding restructuring related liabilities of \$3.8 million were recorded in other long-term liabilities in the consolidated balance sheets.

During fiscal 2023, we recorded restructuring charges related to continuing operations of \$53.1 million and made payments of \$44.9 million under the 2023 Plan. We recorded restructuring charges related to discontinued operations of \$23.9 million and made payments of \$23.4 million under the 2023 Plan. As of October 31, 2023, the payroll and related benefits liabilities related to continuing operations of \$3.7 million were recorded in accounts payable and accrued liabilities, and the remaining outstanding restructuring related liabilities of \$4.5 million were recorded in other long-term liabilities in the consolidated balance sheets. The payroll and related benefits liabilities related to discontinued operations were \$0.5 million.

During fiscal 2022, we recorded restructuring charges related to continuing operations of \$11.2 million and made payments of \$24.1 million under the 2021 restructuring plan (the 2021 Plan) initiated in the third quarter of fiscal 2021. We recorded restructuring charges related to discontinued operations of \$0.9 million and made payments of \$2.2 million under the 2021 Plan. There was no outstanding balance under the 2021 Plan as of October 31, 2022.

Supplementary Data - Selected Unaudited Quarterly Financial Data

The table below includes certain unaudited financial information for the last eight fiscal quarters.

	Quarter Ended			
	January 31,	April 30,	July 31,	October 31,
	in thousands, except per share amounts			
2024				
Revenue	\$ 1,510,989	\$ 1,454,712	\$ 1,525,749	\$ 1,635,986
Gross margin	1,231,796	1,154,315	1,235,073	1,314,491
Income before provision for income taxes	457,454	341,530	391,995	322,879
Net income from continuing operations	434,545	296,093	422,707	260,795
Income (loss) from discontinued operations, net of income taxes	11,662	(7,004)	(17,813)	834,825
Net income	446,207	289,089	404,894	1,095,620
Net income attributed to Synopsys	449,112	292,107	408,055	1,114,106
Net income (loss) per share attributed to Synopsys - basic:				
Continuing operations	\$ 2.87	\$ 1.96	\$ 2.78	\$ 1.81
Discontinued operations	0.08	(0.05)	(0.12)	5.43
Basic net income per shares ⁽¹⁾	\$ 2.95	\$ 1.91	\$ 2.66	\$ 7.24
Net income (loss) per share attributed to Synopsys - diluted:				
Continuing operations	\$ 2.82	\$ 1.92	\$ 2.73	\$ 1.79
Discontinued operations	0.07	(0.04)	(0.12)	5.35
Diluted net income per shares ⁽¹⁾	\$ 2.89	\$ 1.88	\$ 2.61	\$ 7.14
2023				
Revenue	\$ 1,233,497	\$ 1,262,744	\$ 1,354,390	\$ 1,467,383
Gross margin	997,508	1,014,503	1,093,958	1,181,202
Income before provision for income taxes	279,558	296,587	325,560	403,765
Net income from continuing operations	266,775	272,640	332,511	343,356
Income (loss) from discontinued operations, net of income taxes	1,852	(2,692)	544	3,139
Net income	268,627	269,948	333,055	346,495
Net income attributed to Synopsys	271,536	272,910	336,252	349,190
Net income (loss) per share attributed to Synopsys - basic:				
Continuing operations	\$ 1.77	\$ 1.81	\$ 2.21	\$ 2.28
Discontinued operations	0.01	(0.02)	—	0.02
Basic net income per shares ⁽¹⁾	\$ 1.78	\$ 1.79	\$ 2.21	\$ 2.30
Net income (loss) per share attributed to Synopsys - diluted:				
Continuing operations	\$ 1.74	\$ 1.78	\$ 2.17	\$ 2.23
Discontinued operations	0.01	(0.02)	—	0.03
Diluted net income per shares ⁽¹⁾	\$ 1.75	\$ 1.76	\$ 2.17	\$ 2.26

(1) Net income per share is computed independently. Therefore, the sum of the quarterly net income per share may not equal to the total computed for the year or any cumulative interim period.

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

Not applicable.

Item 9A. Controls and Procedures

- (a) *Evaluation of Disclosure Controls and Procedures.* As of November 2, 2024, Synopsys carried out an evaluation under the supervision and with the participation of Synopsys' management, including the Chief Executive Officer and Chief Financial Officer, of the effectiveness of the design and operation of Synopsys' disclosure controls and procedures (as such term is defined in Rules 13a-15(e) and 15d-15(e) under the Exchange Act). Regardless of how well designed and operated, there are inherent limitations to the effectiveness of any system of disclosure controls and procedures. Accordingly, even effective disclosure controls and procedures can only provide reasonable, not absolute, assurance of achieving their control objectives. Our compliance programs and compliance training for employees may not prevent our employees or contractors from breaching or circumventing our policies or violating applicable laws and regulations. Our Chief Executive Officer and Chief Financial Officer have concluded that, as of November 2, 2024, Synopsys' disclosure controls and procedures were effective to provide reasonable assurance that information required to be disclosed in the reports Synopsys files and submits under the Exchange Act is recorded, processed, summarized and reported as and when required, and that such information is accumulated and communicated to Synopsys' management, including the Chief Executive Officer and Chief Financial Officer, to allow timely decisions regarding its required disclosure.
- (b) *Management's Report on Internal Control Over Financial Reporting.* Our management is responsible for establishing and maintaining adequate internal control over financial reporting (as defined in Rules 13a-15(f) and 15d-15(f) under the Exchange Act) for Synopsys.
- Under the supervision and with the participation of our management, including our Chief Executive Officer and Chief Financial Officer, we conducted an evaluation of the effectiveness of our internal control over financial reporting as of November 2, 2024. In assessing the effectiveness of our internal control over financial reporting, our management used the framework established in *Internal Control Integrated Framework (2013)* issued by The Committee of Sponsoring Organizations of the Treadway Commission (COSO).
- Our management has concluded that, as of November 2, 2024, our internal control over financial reporting was effective based on these criteria. Our independent registered public accounting firm, KPMG LLP, has issued an auditors' report on the effectiveness of our internal control over financial reporting, which is included herein.
- (c) *Changes in Internal Control Over Financial Reporting.* There were no changes in Synopsys' internal control over financial reporting during the fiscal quarter ended November 2, 2024 that have materially affected, or are reasonably likely to materially affect, Synopsys' internal control over financial reporting.

Item 9B. Other Information

Insider Adoption or Termination of Trading Arrangements

None of our directors or officers informed us of the adoption, modification or termination of a "Rule 10b5-1 trading arrangement" or "non-Rule 10b5-1 trading arrangement" (as those terms are defined in Item 408(c) of Regulation S-K) during the quarterly period covered by this report, except as described in the table below:

Name and Title	Action	Date Adopted	Character of Trading Arrangement ⁽¹⁾	Aggregate Number of Common Stock to be Purchased or Sold Pursuant to Trading Arrangement	Expiration Date ⁽²⁾
Sassine Ghazi <i>President, Chief Executive Officer and Director</i>	Adoption	9/30/2024	Rule 10b5-1 Trading Arrangement	Up to 34,098 shares to be sold	12/12/2025
Rick Mahoney <i>Chief Revenue Officer</i>	Adoption	9/13/2024	Rule 10b5-1 Trading Arrangement	(3)	1/16/2026

- (1) Except as indicated by footnote, each trading arrangement marked as a "Rule 10b5-1 Trading Arrangement" is intended to satisfy the affirmative defense of Rule 10b5-1(c), as amended (the Rule).
- (2) Except as indicated by footnote, each trading arrangement permitted or permits transactions through and including the earlier to occur of (a) the completion of all purchases or sales or (b) the date listed in the table. Each trading arrangement marked as a "Rule 10b5-1 Trading Arrangement" only permitted or only permits transactions upon expiration of the applicable mandatory cooling-off period under the Rule.
- (3) The aggregate number of common stock to be sold pursuant to Mr. Mahoney's Rule 10b5-1 Trading Arrangement includes:
- 30,222 shares of common stock held by Mr. Mahoney;
 - All of net after-tax shares of common stock received upon the payout of 7,344 performance-based restricted stock units (PRSUs), which were earned on December 12, 2023, and thereafter subject to only time-based vesting; and
 - All of net after-tax shares of common stock received upon the payout of 6,348 PRSUs, which were granted in fiscal 2023. The number of shares that will be earned will depend on our performance. See the Compensation Discussion and Analysis in our most recent proxy statement, which was filed on February 16, 2024 for more information (the Proxy Statement). In addition, the actual number of shares that will be released to Mr. Mahoney in connection with the 2023 Annual PRSUs (as defined in the proxy statement) and sold under the Rule 10b5-1 Trading Arrangement will be net of the number of shares withheld to satisfy tax withholding obligations arising from the vesting of such shares and is not yet determinable.

Item 9C. Disclosure Regarding Foreign Jurisdictions that Prevent Inspections

None.

PART III

Item 10. Directors, Executive Officers and Corporate Governance

For information required by this Item relating to our executive officers, see *Information about our Executive Officers* in Part I, Item 1 of this Annual Report.

The information required by this Item relating to our directors and nominees is included under the heading “Proposal 1 — Election of Directors,” in our definitive Proxy Statement to be filed within 120 days after November 2, 2024 for the 2025 Annual Meeting of Stockholders (our Proxy Statement) and is incorporated herein by reference. The information required by this Item regarding our Audit Committee is included under the headings “Audit Committee Report” and “Corporate Governance” in our Proxy Statement and is incorporated herein by reference. We will provide disclosure of delinquent Section 16(a) reports, if any, in our Proxy Statement, and such disclosure, if any, is incorporated herein by reference.

The information required by this Item relating to our code of ethics and its applicability to our Principal Executive Officer, Principal Financial Officer and Principal Accounting Officer is included under the heading “Ethics and Business Conduct” in our Proxy Statement and is incorporated herein by reference.

Item 11. Executive Compensation

The information required by this Item relating to director and executive compensation is included under the headings “Compensation Discussion and Analysis,” “Executive Compensation Tables,” “Director Compensation,” “Compensation Committee Interlocks and Insider Participation,” and “Compensation Committee Report” in our Proxy Statement and is incorporated herein by reference.

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

The information required by this Item relating to security ownership of certain beneficial owners and management is included under the heading “Security Ownership of Certain Beneficial Owners and Management” in our Proxy Statement, and the information required by this Item relating to securities authorized for issuance under equity compensation plans is included under the heading “Equity Compensation Plan Information” in our Proxy Statement, and, in each case, is incorporated herein by reference.

Item 13. Certain Relationships and Related Transactions and Director Independence

The information required by this Item relating to the review, approval or ratification of transactions with related persons is included under the heading “Transactions with Related Persons” in our Proxy Statement, and the information required by this Item relating to director independence is included under the heading “Director Independence,” and, in each case, is incorporated herein by reference.

Item 14. Principal Accountant Fees and Services

The information required by this Item is included under the headings “Fees and Service of Independent Registered Public Accounting Firm” and “Audit Committee Pre-Approval Policies and Procedures” in our Proxy Statement and is incorporated herein by reference.

PART IV

Item 15. Exhibits and Financial Statement Schedules

(a) The following documents are filed as part of this Form 10-K:

(1) Financial Statements

The following documents are included as Part II, Item 8 of this Form 10-K:

	Page
Report of Independent Registered Public Accounting Firm (KPMG LLP, Santa Clara, CA, PCAOB ID: 185)	54
Consolidated Balance Sheets	56
Consolidated Statements of Income	57
Consolidated Statements of Comprehensive Income	58
Consolidated Statements of Stockholders' Equity	59
Consolidated Statements of Cash Flows	60
Notes to Consolidated Financial Statements	62

(2) Financial Statement Schedules

Schedules not listed above have been omitted because the information required to be set forth therein is not applicable or is shown in the financial statements or notes herein.

(3) Exhibits

See Item 15(b) below.

(b) Exhibits

EXHIBIT INDEX

Exhibit Number	Exhibit Description	Incorporated By Reference				Filed or Furnished Herewith
		Form	File No.	Exhibit	Filing Date	
2.1	Agreement and Plan of Merger, dated as of January 15, 2024, by and among Synopsys, Inc., ANSYS, Inc. and ALTA Acquisition Corp.	8-K	000-19807	2.1	1/16/2024	
3.1	Amended and Restated Certificate of Incorporation	10-Q	000-19807	3.1	9/15/2003	
3.2	Amended and Restated Bylaws	8-K	000-19807	3.1	3/25/2024	
4.1	Description of Synopsys' Capital Stock	10-K	000-19807	4.2	12/15/2020	
10.1	Sixth Amendment Agreement, dated February 13, 2024, by and among Synopsys, as borrower, the lenders party thereto and JPMorgan Chase Bank, N.A., as administrative agent for the lenders.	8-K	000-19807	2.1	2/14/2024	

[Table of Contents](#)

Exhibit Number	Exhibit Description	Incorporated By Reference				Filed or Furnished Herewith
		Form	File No.	Exhibit	Filing Date	
10.2	Term Loan Facility Credit Agreement, dated February 13, 2024, by and among Synopsys, as borrower, the lenders party thereto, HSBC Securities (USA) Inc., and Bank of America, N.A., as co-syndication agents, Mizuho Bank, LTD., The Bank of Nova Scotia, TD Bank, N.A., Truist Bank, and Wells Fargo Bank, National Association, as co-documentation agents, and JPMorgan Chase Bank, N.A., as administrative agent for the lenders.	8-K	000-19807	2.2	2/14/2024	
10.3*	2006 Employee Equity Incentive Plan, as amended	8-K	000-19807	10.1	4/12/2024	
10.4*	Form of Restricted Stock Unit Grant Notice and Award Agreement under 2006 Employee Equity Incentive Plan	8-K	000-19807	10.3	4/14/2023	
10.5*	Form of Stock Option Grant Notice and Award Agreement under 2006 Employee Equity Incentive Plan	8-K	000-19807	10.4	4/14/2023	
10.6*	Employee Stock Purchase Plan, as amended	8-K	000-19807	10.6	4/15/2022	
10.7*	2017 Non-Employee Directors Equity Incentive Plan	8-K	000-19807	10.8	4/10/2017	
10.8*	Form of Restricted Stock Grant Notice and Award Agreement under 2017 Non-Employee Directors Equity Incentive Plan	10-K	000-19807	10.9	12/14/2017	
10.9*	Form of Stock Options Grant Notice and Option Agreement under 2017 Non-Employee Directors Equity Incentive Plan	10-K	000-19807	10.10	12/14/2017	
10.10*	Synopsys Amended and Restated Deferred Compensation Plan II	10-Q	000-19807	10.23	3/9/2009	
10.11	Form of Indemnification Agreement for directors and executive officers	8-K	000-19807	99.2	7/14/2011	
10.12*	Director's and Officer's Insurance and Company Reimbursement Policy	S-1	33-45138	10.2	2/24/1992 (effective date)	
10.13*	Executive Incentive Plan, as amended	10-Q	000-19807	10.1	2/17/2023	
10.14*	Amended and Restated Executive Change of Control Severance Benefit Plan	8-K	000-19807	10.19	12/21/2016	
10.15*	Executive Severance Benefit and Transition Plan	8-K	000-19807	10.1	2/9/2021	

Table of Contents

Exhibit Number	Exhibit Description	Incorporated By Reference				Filed or Furnished Herewith
		Form	File No.	Exhibit	Filing Date	
10.16*	Offer Letter, dated November 23, 2022, by and between Synopsys, Inc. and Shelagh Glaser	8-K	000-19807	10.1	11/29/2022	
10.17*	Employment Agreement, dated December 20, 2023 between Synopsys, Inc. and Mr. Sassine Ghazi	8-K/A	000-19807	10.1	12/21/2023	
10.18*	Executive Chairperson Agreement, dated December 20, 2023 between Synopsys, Inc. and Dr. Aart J. de Geus	8-K/A	000-19807	10.2	12/21/2023	
19.1	Insider Trading Policy					X
21.1	Subsidiaries of Synopsys, Inc.					X
23.1	Consent of KPMG LLP, Independent Registered Public Accounting Firm					X
31.1	Certification of Chief Executive Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Exchange Act					X
31.2	Certification of Chief Financial Officer pursuant to Rule 13a-14(a) or Rule 15d-14(a) of the Exchange Act					X
32.1+	Certification of Chief Executive Officer and Chief Financial Officer furnished pursuant to Rule 13a-14(b) or Rule 15d-14(b) of the Exchange Act and Section 1350 of Chapter 63 of Title 18 of the United States Code					X
97.1	Executive Officer Compensation Recovery Policy	10-K	000-19807	97.1	12/12/2023	

[Table of Contents](#)

Exhibit Number	Exhibit Description	Incorporated By Reference				Filed or Furnished Herewith
		Form	File No.	Exhibit	Filing Date	
101	The following financial statements from the Company's Annual Report on Form 10-K for the year ended November 2, 2024, formatted in Inline XBRL: (i) Consolidated Balance Sheets as of November 2, 2024 and October 28, 2023, (ii) Consolidated Statements of Income for the Years Ended November 2, 2024, October 28, 2023 and October 29, 2022 (iii) Consolidated Statements of Comprehensive Income for the Years Ended November 2, 2024, October 28, 2023, and October 29, 2022 (iv) Consolidated Statements of Stockholders' Equity for the Years Ended November 2, 2024, October 28, 2023 and October 29, 2022, (v) Consolidated Statements of Cash Flows for the Years Ended November 2, 2024, October 28, 2023 and October 29, 2022 (vi) Notes to Consolidated Financial Statements, tagged as blocks of text and including detailed tags					X
104	Cover Page Interactive Data File (formatted as Inline XBRL and contained in Exhibit 101)					

* Indicates a management contract, compensatory plan or arrangement.

+ This exhibit is furnished with this Annual Report on Form 10-K and is not deemed filed with the Securities and Exchange Commission and is not incorporated by reference in any filing of Synopsys, Inc. under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended, whether made before or after the date hereof and irrespective of any general incorporation language contained in such filing.

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.

Date: December 18, 2024

SYNOPSYS, INC.

By: /s/ SHELAGH GLASER

Shelagh Glaser
Chief Financial Officer
(Principal Financial Officer)

[Table of Contents](#)

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:

<u>Name</u>	<u>Title</u>	<u>Date</u>
<u>/s/ SASSINE GHAZI</u> Sassine Ghazi	President, Chief Executive Officer (Principal Executive Officer) and Director	December 18, 2024
<u>/s/ SHELAGH GLASER</u> Shelagh Glaser	Chief Financial Officer (Principal Financial Officer)	December 18, 2024
<u>/s/ SUDHINDRA KANKANWADI</u> Sudhindra Kankanwadi	Chief Accounting Officer (Principal Accounting Officer)	December 18, 2024
<u>/s/ AART J. DE GEUS</u> Aart J. de Geus	Executive Chair of the Board of Directors	December 18, 2024
<u>/s/ LUIS BORGEN</u> Luis Borgen	Director	December 18, 2024
<u>/s/ MARC CASPER</u> Marc Casper	Director	December 18, 2024
<u>/s/ JANICE D. CHAFFIN</u> Janice D. Chaffin	Director	December 18, 2024
<u>/s/ BRUCE R. CHIZEN</u> Bruce R. Chizen	Director	December 18, 2024
<u>/s/ MERCEDES JOHNSON</u> Mercedes Johnson	Director	December 18, 2024
<u>/s/ ROBERT PAINTER</u> Robert Painter	Director	December 18, 2024
<u>/s/ JEANNINE SARGENT</u> Jeannine Sargent	Director	December 18, 2024
<u>/s/ JOHN G. SCHWARZ</u> John G. Schwarz	Director	December 18, 2024
<u>/s/ ROY VALLEE</u> Roy Vallee	Director	December 18, 2024

*Certain information contained in this document has been redacted pursuant to Item 601(a)(6) of Regulation S-K. Redacted information is indicated with the notation "[***]"*

INSIDER TRADING POLICY

1. PURPOSE

This Insider Trading Policy (the “**Policy**”) establishes rules and procedures designed to prevent Covered Persons (as defined below) from trading, or causing the trading of, or engaging in any other Transactions (as defined below) in, Synopsys stock or any other securities that Synopsys may issue, including, but not limited to, preferred stock, notes, bonds or convertible securities (collectively, “**Synopsys Securities**”) or securities of other publicly traded companies while in possession of material non-public information, or **MNPI** (as defined below), and engaging in other related activities, such as tipping others to make such trades or other Transactions. These illegal activities are commonly referred to as “insider trading.” These prohibitions on insider trading, and the others set forth in this Policy, continue to apply to Transactions involving securities even after termination of your service to Synopsys.

Failure to comply with this Policy could be a serious violation of U.S. securities laws by you and/or Synopsys and could result in disciplinary actions, including the termination of your employment, or substantial civil and criminal penalties for you and Synopsys. The Securities and Exchange Commission (“**SEC**”) can also seek substantial civil penalties from any person who, at the time of an insider trading violation, “directly or indirectly controlled the person who committed such violation,” which could apply to Synopsys and/or management and supervisory personnel. Even for violations that result in a small or no profit, the SEC can seek penalties from a company and/or its management and supervisory personnel as control persons.

2. PERSONS COVERED BY THIS POLICY

This Policy applies to Synopsys and its subsidiaries, and all of their directors, officers and employees, as well as consultants, independent contractors or designated agents, and their respective Family Members and Controlled Entities (each as defined below) (collectively, “**Covered Persons**” or “**you**”).

2.1 Transactions by Family Members and Others

This Policy also applies to your family members who reside with you. This includes (A) anyone else who lives in your household (regardless of whether their Transactions were directed or known by you) such as a spouse, a child, a child away at college, stepchildren, grandchildren, parents, stepparents, grandparents, siblings and in-laws and (B) any other persons who do not live in your household, but whose Transactions in securities are directed by you or are subject to your influence or control, such as individuals who consult with you before they trade in securities (collectively referred to as “**Family Members**”).

You are responsible for the Transactions of these other persons and therefore should make them aware of the need to confer with you before they trade in securities, and you should treat all such Transactions for the purposes of this Policy and applicable securities laws as if the Transactions were for your own account.

2.2 Transactions by Entities that you Influence or Control

This Policy applies to any entities that you influence or control, including any corporations, partnerships or trusts (collectively referred to as “**Controlled Entities**”), whether through having substantial beneficial ownership, serving as a trustee, or in any other manner. Transactions by these Controlled Entities should be treated for the purposes of this Policy and applicable securities laws as if they were for your own account.

3. POLICY

3.1 Prohibition on Transacting While in Possession of MNPI

Covered Persons, Family Members, and Controlled Entities may not Transact (as defined below) in Synopsys Securities while in possession of MNPI about Synopsys. Covered Persons may not Transact in any other company's stock or its other securities while you possess MNPI about that company as a result of your work with Synopsys.

MNPI is information that is both (a) material and (b) non-public.

Material. In general, information should be regarded as "material" if it has "market significance," that is, there is a substantial likelihood that it would be considered important by a reasonable investor in making a decision regarding the purchase or sale of stock, or if the disclosure of the information would be expected to significantly alter the total mix of information in the marketplace about a stock.

While it is not possible to define all categories of material information, there are various categories of information that would often be regarded as material, such as:

- a. Quarterly and year-end results;
- b. Developments causing financial results to be substantially different from then-current guidance;
- c. Forecasts of financial results;
- d. Proposed major acquisitions or divestitures;
- e. Significant write-downs in assets or increases in reserves;
- f. Significant new product and service offering announcements;
- g. Significant changes in executive management;
- h. Significant communications to or from regulatory or government agencies;
- i. Entry into a new, or cancellation of, a major strategic relationship or other contract(s);
- j. Planned stock splits or issuances of dividends;
- k. New public or private equity or debt offerings;
- l. Actual or threatened major litigation, or the resolution of such litigation; and
- m. Significant cybersecurity incidents, such as a data breach.

Material information is not limited to historical facts but may also include projections and forecasts. With respect to a future event, such as a merger, acquisition or introduction of an important new product, the point at which negotiations or product development are determined to be material is determined by balancing the probability that the event will occur against the magnitude of the effect the event would have on a company's operations or stock price should it occur. When in doubt about whether non-public information is material, you should presume it is material. If you are unsure whether information is material, you should either consult the General Counsel's office before making any decision to disclose such information (other than to persons who need to know it) or to Transact in or recommend securities to which that information relates or assume that the information is material.

Non-public. The fact that information has been disclosed to a few members of the public does not make it public for insider trading purposes. To be "public" the information must have been disseminated in a manner designed to reach investors generally, and the investors must have been given the opportunity to absorb the information. Material information is "non-public" if it has not been broadly disseminated to the

public for a sufficient period to be reflected in the price of the stock; as a general rule, information should be considered non-public until at least one full trading day has elapsed after the information is broadly disseminated to the public, for example, through an SEC filing, major newswire services, national news services, web casts or financial news services.

Transact or Transaction. For purposes of this Policy, a “**Transaction**” (or the act of engaging in a Transaction, to “**Transact**”) includes purchases, sales, or other transactions in publicly traded securities, including common stock, options to purchase common stock, or any other type of securities, including but not limited to preferred stock, convertible debentures, and warrants, as well as exchange-traded put or call options or swaps relating to these securities, or any such actions on any other organized market. Transactions also include all gifts and donations of Synopsys Securities. Transactions do not include the exceptions listed in Section 3.7 below.

3.2 Prohibition on Tipping

Covered Persons, Family Members, and Controlled Entities may not disclose MNPI about Synopsys, or about any other company that was obtained as the result of work for Synopsys, to any others outside of Synopsys, unless required as part of your regular job duties or authorized by the General Counsel's office. In no circumstance may such person disclose MNPI about Synopsys, or about any other company obtained as the result of work for Synopsys, that you know or should know will be used to Transact in that company's stocks. Covered Persons may not advise other people, including Family Members, to buy or sell Synopsys Securities, or any other company's securities, if you possess any MNPI about that company.

3.3. Restrictions on Particular Transactions (Options, Hedging, Pledging and Others)

Certain Transactions present a heightened legal risk and/or the appearance of improper or inappropriate conduct. Covered Persons, Family Members, and Controlled Entities therefore may not engage in any of these Transactions, whether or not they are in possession of MNPI.

Short Sales. Such persons may not engage in any short sales of Synopsys Securities. A short sale is the sale of securities not owned by the seller or, if owned, not delivered.

Publicly-Traded Options. Such persons may not Transact in put options, call options or other derivative securities, on an exchange or in any other organized market, regarding Synopsys Securities.

Hedging Transactions. Such persons may not engage in hedging Transactions. Hedging Transactions can be accomplished through a number of possible mechanisms, including through the use of financial instruments such as prepaid variable forwards, equity swaps, collars or exchange funds.

Margin Accounts and Pledged Securities. Such persons may not hold Synopsys Securities in a margin account or otherwise pledge Synopsys Securities as collateral for a loan.

Standing and Limit Orders. Such persons may not enter a standing or limit order with respect to Synopsys Securities at any time while otherwise prohibited by this Policy from Transacting in Synopsys Securities. Covered Persons may also not enter into a standing or limit order with respect to Synopsys Securities covering any period of time in which the Covered Person expects to be in possession of MNPI or be in a Closed Trading Window (as defined below).

3.4 Additional Restrictions for Designated Insiders: Closed Trading Windows

Designated Insiders (as defined below), as well as their Family Members and Controlled Entities, are prohibited from Transacting in Synopsys Securities during Closed Trading Windows (as defined below).

Designated Insiders are members of Synopsys' Board of Directors (“**Board**”), all persons who have been designated by the Board as members of the “Corporate Staff,” all vice presidents, and all other persons who, because of their regular access to MNPI about Synopsys, have been designated by any

vice president (or above) as a person who should be subject to the window period restrictions of this Policy. The General Counsel's office maintains a list of all Designated Insiders. Each quarter the General Counsel's office will ask various vice presidents and above to determine which individuals should be considered Designated Insiders. The General Counsel shall notify each person who has been designated as a Designated Insider under this Policy. Even if you have not been notified, if you believe you should be a Designated Insider, you should not Transact in Synopsys Securities during Closed Trading Windows.

Closed Trading Windows include Scheduled Closed Trading Windows and Special Closed Trading Windows.

"Scheduled Closed Trading Windows" are periods of time during each fiscal quarter, typically corresponding with times when Designated Insiders may be aware of MNPI about Synopsys financial results. Synopsys' Scheduled Closed Trading Windows are posted on Synopsys' legal intranet site at [***]. While these dates are subject to change, Scheduled Closed Trading Windows typically start at the close of market on the third-to-last Friday before the end of each fiscal quarter and conclude at the close of market on the first trading day following the date Synopsys publicly discloses its financial results for the applicable fiscal quarter. If there is any ambiguity about the length of a Scheduled Closed Trading Window, the more restrictive interpretation applies.

In addition to Scheduled Closed Trading Windows for Designated Insiders, Synopsys may implement a **"Special Closed Trading Window"** at any time in connection with certain company events that could give rise to MNPI. Covered Persons subject to a Special Closed Trading Window may not Transact in Synopsys Securities until they have been informed by the General Counsel's office that the Special Closed Trading Window has ended.

Accounts at E*Trade may be "blocked" for Designated Insiders during Closed Trading Windows in order to prevent Transactions, but you should not rely on whether or not such accounts are blocked to determine whether Synopsys is within a Closed Trading Window or whether you are permitted to Transact under this Policy. Further, for the avoidance of doubt, this Policy applies to the accounts of all Covered Persons, whether or not maintained at E*Trade or another provider.

3.5 Preclearance Requirement for the Preclearance Group

In addition to the restrictions set forth above, all members of the Board, officers of Synopsys specifically designated as "Executive Officers" by the Board (**"Section 16 Officers"**) in accordance with Section 16(a) of the Securities Exchange Act of 1934, as amended (the **"Exchange Act"**), and any other individuals that are identified by the General Counsel from time to time (collectively, the **"Preclearance Group"**), must seek preclearance before trading in Synopsys Securities outside of Transactions pursuant to an approved 10b5-1 Plan.

No member of the Preclearance Group, or any Family Member or Controlled Entity of such a person, may Transact in Synopsys Securities without first obtaining written preclearance of the Transaction from the General Counsel's office.

Requests for preclearance should be submitted to the General Counsel's office via email at least three (3) business days in advance of the proposed Transaction.

The General Counsel's office is under no obligation to approve a Transaction submitted for preclearance and may determine not to permit the Transaction for any reason, even if the Transaction would not violate the law or this Policy. The General Counsel's office may request additional information in determining whether to approve the Transaction.

If a person seeks preclearance and permission to engage in the Transaction is denied, then they should refrain from initiating any Transaction in Synopsys Securities until approval is granted by the General Counsel's office and should not inform any other person of the restriction. Preclearance for any

Transaction is effective for only the two (2) trading days following the written communication of the decision.

When a request for preclearance is made, the requestor should carefully consider whether they may be aware of any MNPI about Synopsys and should fully describe those circumstances to the General Counsel's office. Along with the request, you must certify that, among other things, you are not in possession of MNPI.

In all cases, the obligation not to Transact while in possession of MNPI belongs to the individual, and preclearance does not eliminate that obligation. For clarity, if the Covered Person becomes aware of MNPI after preclearance is granted, but before the Transaction is made, the Covered Person must not Transact.

3.6 Additional Restrictions for the Board and Section 16 Officers

In addition to the requirements above, members of the Board and Section 16 Officers must also comply with any additional restrictions in Synopsys' Section 16 Officer and Director Trading Procedures Policy.

3.7 Exceptions

The requirements of this Policy do not apply to the following Transactions, except as specifically noted:

Purchases of Synopsys Securities under Synopsys' Employee Stock Purchase Plan. The purchase of Synopsys Securities under the Employee Stock Purchase Plan is not considered a Transaction under this Policy. However, any subsequent Transactions in any such Synopsys Securities are Transactions under this Policy.

Stock Option Exercises and Stock Award Vesting and Withholding. Not considered Transactions under this Policy are: (1) the exercise of stock options by cash payment under a Synopsys or Synopsys-assumed equity plan; (2) the exercise of stock options in a stock-for-stock exercise with Synopsys; (3) an election to have Synopsys withhold securities to cover tax obligations in connection with an option exercise or vesting of a restricted stock unit. However, the sale of any Synopsys Securities issued upon the exercise of a stock option, a cashless exercise of a stock option through a broker (as this involves selling a portion of the underlying shares to cover the costs of exercise) and any other market sale of shares are considered Transactions.

Mutual Funds and ETFs. Transactions in mutual funds and/or exchange-traded funds ("**ETFs**") that are invested in Synopsys Securities are not Transactions subject to this Policy.

Transactions Pursuant to an Approved 10b5-1 Plan. Good-faith Transactions pursuant to a written trading plan under Rule 10b5-1 of the Exchange Act that are compliant with the requirements in this section, are not Transactions under this Policy.

Requirements for all 10b5-1 Plans:

- Must not be adopted or modified while the Covered Person is subject to a Scheduled Closed Trading Window or Special Closed Trading Window, or in possession of MNPI.
- Must be entered into and operated (including with respect to modifications and terminations) in good faith for the duration of the 10b5-1 Plan and not as part of a plan or scheme to evade the law.
- All adoptions, modifications, and terminations of a 10b5-1 Plan must be approved by the General Counsel's Office.

The Covered Person should submit a request for approval to the General Counsel's office via at least ten (10) business days before entering into the 10b5-1 Plan. When such a request is made,

the requestor should carefully consider whether they may be aware of any MNPI about Synopsys and should describe fully those circumstances to the General Counsel's office.

The General Counsel's office is under no obligation to approve a request for adopting, modifying, or terminating a 10b5-1 Plan and may determine not to approve a request for any reason, even if the request would not violate the law or this Policy.

In all cases, the obligation not to enter into a 10b5-1 Plan while in possession of MNPI belongs to the individual, and approval by the General Counsel's Office does not eliminate that obligation. For clarity, if the Covered Person becomes aware of MNPI after preclearance is granted, but before the plan is entered into, the Covered Person must not enter into the plan.

- The 10b5-1 Plan should contain a representation certifying that (i) the Covered Person is entering into the 10b5-1 Plan in good faith, and not as a part of a plan or scheme to evade the prohibitions of Rule 10b5-1; (ii) will act in good faith with respect to such plan throughout the duration of the plan; and (iii) is not in possession of MNPI at the time of entering into the plan.
- The first Transaction under an approved 10b5-1 Plan may not occur:
 - For members of the Board and officers of Synopsys, until the later of:
 - ninety (90) days following the plan adoption or modification; or
 - two business days following the disclosure of Synopsys' quarterly financial results on Forms 10-Q or 10-K, as applicable, for the fiscal quarter in which the plan was adopted, but in no event later than 120 days.
 - For all other Covered Persons, until the later of:
 - thirty (30) days following the plan adoption or modification; or
 - the close of market on the first trading day following the disclosure of Synopsys' quarterly financial results for the fiscal quarter in which the plan was adopted.
 - If you have terminated a previous 10b5-1 Plan after adopting a new plan, the periods above for the new plan begin on the date of the termination of the previous plan.
- You may not have more than one 10b5-1 Plan in effect that includes trades that occur during the same time period, except as otherwise permitted by Rule 10b5-1.
- You may not have more than one single-trade 10b5-1 Plan in effect in any twelve (12) month period.

Notwithstanding the foregoing, Synopsys may Transact pursuant to an approved Rule 10b5-1 Plan as provided in Synopsys' Share Repurchase Program Policy.

4. POST-TERMINATION TRANSACTIONS

The prohibitions on trading set forth in this Policy continue to apply to Transactions involving securities even after termination of your service to Synopsys. If you are in possession of MNPI about Synopsys or another company that you learned through your work for Synopsys when your service terminates, you should not trade in that company's securities until that information has become public or is no longer material, whichever occurs first. In addition, if it is a Scheduled Closed Trading Window or Special Closed Trading Window or you are otherwise restricted from trading Synopsys Securities under this Policy at the time you cease to be affiliated with Synopsys, you are expected to abide by the applicable trading restrictions until at least the end of each applicable trading restriction.

5. ENFORCEMENT

Individuals who violate this Policy shall be subject to disciplinary action by Synopsys, which may include ineligibility for future participation in Synopsys' equity plans or termination of employment for cause, or in the case of Board members, being asked to resign or not being renominated. In determining consequences resulting from a violation of this Policy, the General Counsel will consider a number of factors including, but not limited to, the individual's culpability, cooperation with the investigation, the individual's past violations, if any, consistency with consequences for other violations, extent of the harm to Synopsys, including, the impact on Synopsys' culture, the availability of restitution, penalties assessed by regulators and the need for deterrence.

6. QUESTIONS

Any questions regarding the Policy should be directed to the General Counsel's Office via email at [***].

SUBSIDIARIES OF SYNOPSYS, INC.*

Name	Jurisdiction of Incorporation
Nihon Synopsys G.K.	Japan
PikeTec GmbH	Germany
SNPS Ireland New Limited	Ireland
Synopsys (India) Private Limited	India
Synopsys Emulation and Verification SAS	France
Synopsys International Limited	Ireland
Synopsys International Services, Inc.	Delaware
Synopsys Korea, Inc.	Korea
Synopsys Software Science and Technology (Shanghai) Co., Ltd.	China
Synopsys Taiwan Co., Ltd.	Taiwan
Synopsys USIE Holdings LLC	Delaware

*Pursuant to Item 601(b)(21)(ii) of Regulation S-K, the names of other subsidiaries of Synopsys, Inc. are omitted because, considered in the aggregate, they would not constitute a significant subsidiary as of the end of the year covered by this report.

Consent of Independent Registered Public Accounting Firm

We consent to the incorporation by reference in the registration statements (Nos. 333-84517 and 333-68011) on Form S-3, and in the registration statements (Nos. 333-279729, 333-272097, 333-265121, 333-256387, 333-238629, 333-231761, 333-225237, 333-221990, 333-217177, 333-215526, 333-213246, 333-206458, 333-196428, 333-195167, 333-189019, 333-185600, 333-181875, 333-179940, 333-174587, 333-169275, 333-166274, 333-157791, 333-151070, 333-151067, 333-134899, 333-125225, 333-125224, 333-116222, 333-108507, 333-106149, 333-103636, 333-103635, 333-103418, 333-100155, 333-99651, 333-97319, 333-97317, 333-75638, 333-77000, 333-71056, 333-63216, 333-56170, 333-45056, 333-38810, 333-32130, 333-90643, 333-84279, 333-77597, 333-77127, 333-68883, 333-60783, 333-50947, 333-45181, 333-42069, and 333-22663) on Form S-8, of our report dated December 18, 2024, with respect to the consolidated financial statements of Synopsys, Inc. and the effectiveness of internal control over financial reporting.

/s/ KPMG LLP

Santa Clara, California
December 18, 2024

**CERTIFICATION OF PRINCIPAL EXECUTIVE OFFICER
PURSUANT TO EXCHANGE ACT RULE 13a-14(a) AND 15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, Sassine Ghazi, certify that:

1. I have reviewed this Annual Report on Form 10-K of Synopsys, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: December 18, 2024

/s/ Sassine Ghazi

Sassine Ghazi

President and Chief Executive Officer (Principal Executive Officer)

**CERTIFICATION OF PRINCIPAL FINANCIAL OFFICER
PURSUANT TO EXCHANGE ACT RULE 13a-14(a)/15d-14(a)
AS ADOPTED PURSUANT TO SECTION 302
OF THE SARBANES-OXLEY ACT OF 2002**

I, Shelagh Glaser, certify that:

1. I have reviewed this Annual Report on Form 10-K of Synopsys, Inc.;
2. Based on my knowledge, this report does not contain any untrue statement of a material fact or omit to state a material fact necessary to make the statements made, in light of the circumstances under which such statements were made, not misleading with respect to the period covered by this report;
3. Based on my knowledge, the financial statements, and other financial information included in this report, fairly present in all material respects the financial condition, results of operations and cash flows of the registrant as of, and for, the periods presented in this report;
4. The registrant's other certifying officer(s) and I are responsible for establishing and maintaining disclosure controls and procedures (as defined in Exchange Act Rules 13a-15(e) and 15d-15(e)) and internal control over financial reporting (as defined in Exchange Act Rules 13a-15(f) and 15d-15(f)) for the registrant and have:
 - (a) Designed such disclosure controls and procedures, or caused such disclosure controls and procedures to be designed under our supervision, to ensure that material information relating to the registrant, including its consolidated subsidiaries, is made known to us by others within those entities, particularly during the period in which this report is being prepared;
 - (b) Designed such internal control over financial reporting, or caused such internal control over financial reporting to be designed under our supervision, to provide reasonable assurance regarding the reliability of financial reporting and the preparation of financial statements for external purposes in accordance with generally accepted accounting principles;
 - (c) Evaluated the effectiveness of the registrant's disclosure controls and procedures and presented in this report our conclusions about the effectiveness of the disclosure controls and procedures, as of the end of the period covered by this report based on such evaluation; and
 - (d) Disclosed in this report any change in the registrant's internal control over financial reporting that occurred during the registrant's most recent fiscal quarter (the registrant's fourth fiscal quarter in the case of an annual report) that has materially affected, or is reasonably likely to materially affect, the registrant's internal control over financial reporting; and
5. The registrant's other certifying officer(s) and I have disclosed, based on our most recent evaluation of internal control over financial reporting, to the registrant's auditors and the audit committee of the registrant's board of directors (or persons performing the equivalent functions):
 - (a) All significant deficiencies and material weaknesses in the design or operation of internal control over financial reporting which are reasonably likely to adversely affect the registrant's ability to record, process, summarize and report financial information; and
 - (b) Any fraud, whether or not material, that involves management or other employees who have a significant role in the registrant's internal control over financial reporting.

Date: December 18, 2024

/s/ Shelagh Glaser

Shelagh Glaser
Chief Financial Officer
(Principal Financial Officer)

**Certification of Principal Executive Officer and Principal Financial Officer Pursuant to Section 906 of the Sarbanes-Oxley Act of 2002
(Subsections (a) and
(b) of Section 1350, Chapter 63 of Title 18, United States Code)**

Pursuant to the requirement set forth in Rule 13a-14(b) of the Securities Exchange Act of 1934, as amended (the "Exchange Act") and Section 1350, Chapter 63 of Title 18 of the United States Code (18 U.S.C-§1350), each of Sassine Ghazi, President and Chief Executive Officer of Synopsys, Inc., a Delaware corporation (the "Company"), and Shelagh Glaser, Chief Financial Officer of the Company, does hereby certify, to such officer's knowledge that:

The Annual Report on Form 10-K for the fiscal year ended October 31, 2024 (the "Form 10-K") to which this Certification is attached as Exhibit 32.1 fully complies with the requirements of Section 13(a) or 15(d) of the Exchange Act. The information contained in the Form 10-K fairly presents, in all material respects, the financial condition and results of operations of the Company.

IN WITNESS WHEREOF, the undersigned have set their hands hereto as of December 18, 2024.

/s/ Sassine Ghazi

Sassine Ghazi
President and Chief Executive Officer (Principal Executive Officer)

/s/ Shelagh Glaser

Shelagh Glaser
Chief Financial Officer
(Principal Financial Officer)

The foregoing certification is being furnished solely pursuant to Section 906 of the Sarbanes-Oxley Act of 2002 (subsections (a) and (b) of Section 1350, Chapter 63 of Title 18, United States Code) and is not deemed filed with the Securities and Exchange Commission as part of the Form 10-K or as a separate disclosure document and is not to be incorporated by reference into any filing of the Company under the Securities Act of 1933, as amended, or the Securities Exchange Act of 1934, as amended (whether made before or after the date of the Form 10-K), irrespective of any general incorporation language contained in such filing.