

KEYVALUE
GLOBAL RESEARCH

Equity Research

ANALYSIS OF SYNOPSIS, INC.

06/12/2024

[Keyvalue.com](https://www.keyvalue.com)

Strong Buy: \$618,74(22,45%)

Equity Research Division
11/12/2024

Summary

UNITS

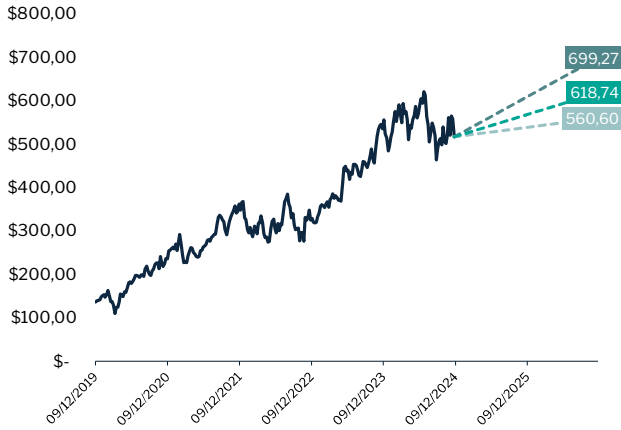
| | |
|----------------|---------------|
| Country | United States |
| Sector | Software |
| Current Price | 505 \$ |
| Target Price | 619 \$ |
| Upside | 22% % |
| Ticker | SNPS |
| Stock Exchange | NASDAQ |

| | |
|-----------------------|----------|
| Shares Outstanding | 156 m |
| Market Capitalization | 78.800 m |
| EPS (2024) | 14,5 \$ |

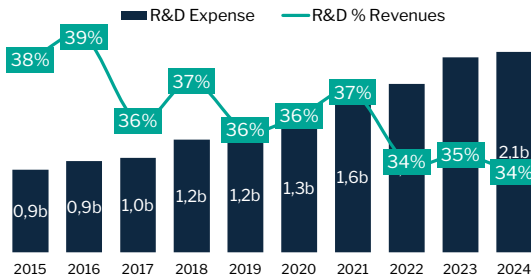


Analyst My-Tam Hoang Team Leader Alessandro Bindi Head of Equity Research Marco Tempestini

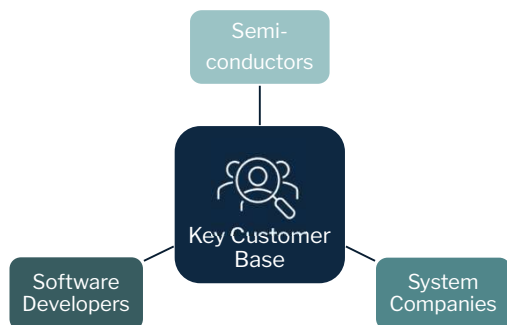
--- Optimistic - - - Pessimistic - - - base



Source: Team Analysis



Source: Company data, Team Analysis



Source: Company data, Team Analysis

INVESTMENT SUMMARY

We recommend a BUY for Synopsys Inc. (SNPS), with a target price of \$618.74, presenting a 22.45% upside potential from the current price of \$505.32 on December 10th, 2024. The target price is derived using a Discounted Cash Flow (DCF) approach, supported by Relative Valuation. Our recommendation is based on the following catalysts: (1) Synopsys' strategic positioning in high-growth industries, (2) its leadership in key markets and strong financial performance, (3) continued investment in innovation and acquisition, and (4) a diversified customer base.

Strategic Positioning in the "Smart Everything" Era

Synopsys' unique positioning in the rapidly evolving "Smart Everything" landscape sets it apart from competitors by capitalizing on the booming demand for integrated chips in industries like AI, automotive, IoT, and 5G. As more products become interconnected, there is an increasing need for highly specialized and efficient semiconductor designs to support smart devices across consumer electronics, autonomous vehicles, smart cities, and industrial applications. Synopsys has effectively positioned itself at the intersection of semiconductor design and software integrity, enabling its customers to develop complex system-on-chip (SoC) designs that integrate both hardware and software seamlessly.

By offering EDA tools, IP solutions, and software quality and security tools under a unified platform, Synopsys is able to address the full lifecycle of semiconductor design, from concept to deployment. This approach aligns with the industry trend towards integrated solutions in which design tools, hardware, and software must work together in real-time to meet the demands of increasingly sophisticated and connected devices. Moreover, Synopsys has successfully tapped into the AI-driven design and cloud computing revolution, two critical forces reshaping the semiconductor industry. As AI and machine learning play a larger role in chip design, Synopsys' innovation in AI-assisted EDA tools ensures that its clients are well-equipped to meet the growing complexity of semiconductor designs, thereby enhancing the overall performance of the "Smart

Leadership in Key Markets and Strong Financial Performance

Synopsys is a market leader in the Electronic Design Automation (EDA) and semiconductor intellectual property (IP) markets, and Synopsys' financial strength is one of the primary reasons investors should consider it as a long-term investment.

The business has a strong balance sheet, characterized by low levels of debt and ample cash reserves. The company's net cash position allows it to invest strategically in research and development (R&D), acquisitions, and return capital to shareholders through buybacks or dividends. The company's financial flexibility provides a significant buffer in the face of market downturns or economic volatility.

The firm generates substantial free cash flow, a key indicator of financial health, which allows the company to reinvest in growth opportunities, pay down debt, and return capital to shareholders. This cash flow strength is supported by the company's subscription-based business model, which provides a steady stream of recurring revenues. Moreover, Synopsys has achieved a high level of operational efficiency, maintaining healthy margins despite fluctuations in demand across its markets.

Synopsys has posted strong profitability and has consistently exceeded analysts' earnings expectations. Its earnings growth, combined with its strong financial position, offers a compelling case for long-term investment, with the potential for further upside as it captures greater market share and accelerates adoption of its technologies in emerging industries.

Continued Investment in Innovation and Acquisition

Synopsys consistently invests a significant portion of its revenue into research and development (R&D) to stay at the forefront of innovation in semiconductor design. The company is focusing heavily on AI-driven tools, machine learning, and cloud-based solutions to enhance its EDA and IP offerings. By integrating AI, Synopsys accelerates chip design processes, optimizes layouts, and simulates complex systems, positioning itself to capture growth in emerging sectors like AI, automotive, and 5G. This continued commitment to R&D ensures Synopsys can meet the increasing complexity of semiconductor design and maintain a competitive edge in a fast-evolving industry.

M&A Strategy: Synopsys also leverages strategic mergers and acquisitions (M&A) as a key component of its innovation and growth strategy. Through acquisitions like Ansys in 2024, Synopsys expands its capabilities in simulation and verification, creating synergies between EDA and advanced simulation tools. Synopsys' M&A approach helps it acquire cutting-edge technologies, accelerate product development, and tap into new growth markets, ensuring it remains a leader in the semiconductor industry.

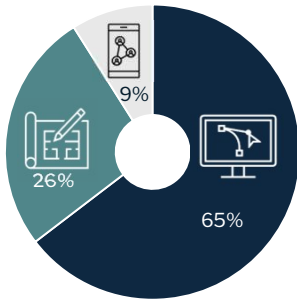
Global Presence and Diversified Customer Base

Synopsys' global presence and diversified customer base are critical factors that set it apart from competitors. With offices and customers spanning across North America, Europe, and Asia, Synopsys has a worldwide footprint that enables it to serve industries ranging from electronics to automotive to healthcare. Its products are integral to the development of cutting-edge technologies used by major global companies, from semiconductor manufacturers to OEMs (Original Equipment Manufacturers), and system designers.

This broad geographic reach and customer diversification help Synopsys reduce its dependency on any single market or customer. It is well-positioned to weather economic downturns or sector-specific slowdowns because its revenue base spans across multiple industries and regions. Additionally, Synopsys benefits from a robust network of partners and customers in emerging markets, particularly in Asia, where demand for semiconductors is growing rapidly. This global diversification strengthens Synopsys' resilience to regional market fluctuations and positions it for continued success.

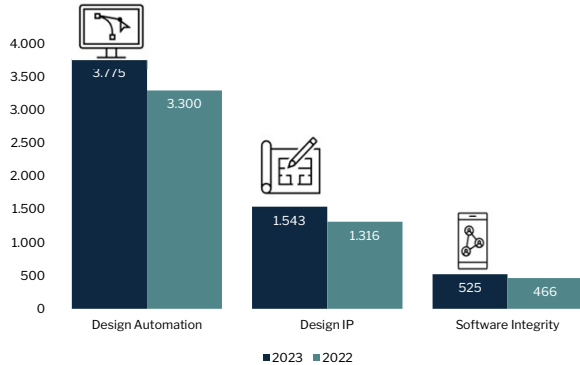
Business Model

OVERVIEW

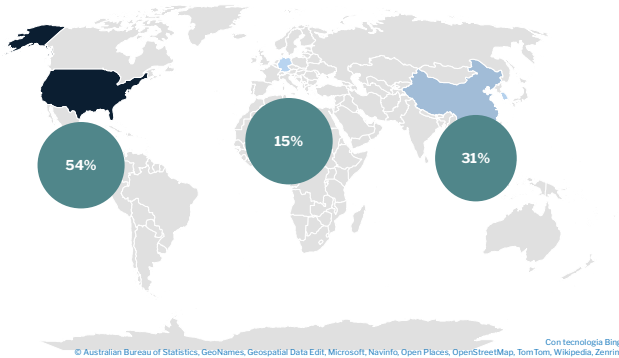


■ Design Automation ■ Design IP ■ Software Integrity

Source: Team Analysis, Company Data



Source: Team Analysis, Company Data



Source: Team Analysis, Company Data



Synopsys, Inc., founded in 1986 and headquartered in Sunnyvale, California, is an American leading provider of electronic design automation (EDA) software and semiconductor intellectual property (IP). Its EDA software is used by engineers to design, verify, and prototype integrated circuits (ICs) and systems-on-chip (SoCs), which are essential components of modern electronics. Semiconductor IP includes pre-designed blocks that accelerate the development of complex chips. Synopsys' tools and solutions are critical in creating advanced technologies in a wide range of industries like aerospace, automotive, financial services, and medical devices.

BUSINESS SEGMENTS & GEOGRAPHIC REACH

Design Automation: Synopsys leads the automation-design industry by offering a comprehensive range of electronic design automation (EDA) software. These tools help engineers design and test integrated circuits, validate electronic systems, and support the development of advanced chips and electronic solutions. This segment, the largest contributor to Synopsys' revenue, accounted for 65% of total revenue in 2023, with a 14% year-over-year increase. Growth was driven by robust end markets such as AI, automotive, and 5G, combined with cutting-edge design and verification tools offering unmatched support globally.

Design IP: Synopsys provides a vast portfolio of pre-designed semiconductor intellectual property (IP) products that engineers use as key components in larger chip designs. Representing 26% of the company's revenue, Design IP achieved a 17% growth in 2023, making it the fastest-growing segment. This growth reflects the demand in high-impact industries such as IoT, cloud computing, automotive, and security, with advanced processes and protocols enabling seamless integration into diverse systems.

Software Integrity: This segment offers tools and services that improve the quality, security, and compliance of software across various industries. Although comparatively smaller, Software Integrity grew 13% in 2023, showcasing its increasing importance in securing modern applications as cybersecurity needs expand globally.

Synopsys operates across key regions including the United States, Western Europe, China and South Korea. The U.S. remains its largest revenue contributor, with a growing share driven by leadership in semiconductor design technologies. Synopsys continues to grow internationally by forging partnerships with key regional players, tailoring solutions to local markets, and enhancing its go-to-market strategies through collaborations with large-scale industry leaders.

COMPANY STRATEGY

Synopsys' "Smart Everything" strategy focuses on enabling transformative innovations like autonomous vehicles, AI, cloud computing, and 5G by integrating advanced silicon chip technology with secure, high-quality software. This approach emphasizes efficiency, capability expansion, and built-in security to drive the era of smarter, connected, and secure devices.

The strategy includes three pillars:

- 1. Build the Best Chips, Faster:** Synopsys delivers industry-leading solutions for chip design and verification, optimizing performance, power, and cost while reducing development timelines and ensuring system-level reliability
- 2. Integrate More Capabilities, Faster:** A broad silicon IP portfolio, including CPUs, memory, and security features, enables customers to enhance device functionality, reduce risks, and streamline development processes for cutting-edge applications
- 3. Build Secure Software, Faster:** Advanced software tools embed security and quality throughout the development lifecycle, mitigating risks like vulnerabilities and ensuring robust, reliable, and compliant software for connected devices

Strategic Acquisitions

The company actively expands its portfolio and market position through acquisitions. Recent examples include the purchase of Intrinsic ID, a leader in security IP, and Dafca, known for design-for-verification technologies, both of which strengthen Synopsys' position in high-growth markets like IoT, automotive, and cloud computing. Additionally, its planned acquisition of Ansys will integrate leading simulation and analysis tools with its EDA capabilities, offering comprehensive solutions for silicon-to-system innovation. These acquisitions align with Synopsys' commitment to addressing evolving customer needs and expanding into adjacent markets.

Partnerships

Synopsys collaborates with key industry players to extend its market reach and enhance product integration. For instance, partnerships with semiconductor manufacturers and system design firms help streamline adoption of its IP solutions and tools in diverse industries such as automotive, cloud computing, and consumer electronics. Collaborations with academic and research institutions further ensure its solutions remain cutting-edge.

Global Expansion

With a presence in North America, EMEA, and APAC, Synopsys continues to grow internationally by tailoring its offerings to regional markets and forging alliances with local players. It has increased investments in sales and marketing in high-growth regions while leveraging its partnerships to deepen customer relationships globally.

Market Trends and R&D Investment

Synopsys remains at the forefront by addressing emerging trends like AI, machine learning, and cybersecurity. Significant R&D investments (more than \$1 billion annually) focus on innovation in areas such as cloud-based EDA tools, hardware security, and green computing solutions. This ensures that its product portfolio evolves with the rapidly advancing needs of the semiconductor industry.

Synopsys ESG Strategy

Synopsys' ESG strategy aligns its technological leadership with sustainability and social responsibility, under the "Smart Future" framework. This strategy integrates Synopsys' innovations in semiconductor design and

Design Automation Segment

This segment offers tools for designing, simulating, and verifying semiconductor chips, addressing all design lifecycle stages from concept to production.

1. Digital & Custom IC Design: it covers stages from synthesis to sign-off, optimizing performance, power efficiency, and manufacturability. Tools:

- Fusion Compiler: integrates synthesis, place-and-route, and sign-off
- IC Compiler 2: focuses on advanced physical design
- PrimeTime: ensures timing and power compliance
- StarRC: verifies electrical characteristics
- SpyGlass: addresses linting and test requirements

2. Custom and Analog Design Tools: these tools are used to design and simulate analog, mixed-signal, and RF circuits, which are critical for integrating digital and analog functionality in modern chips:

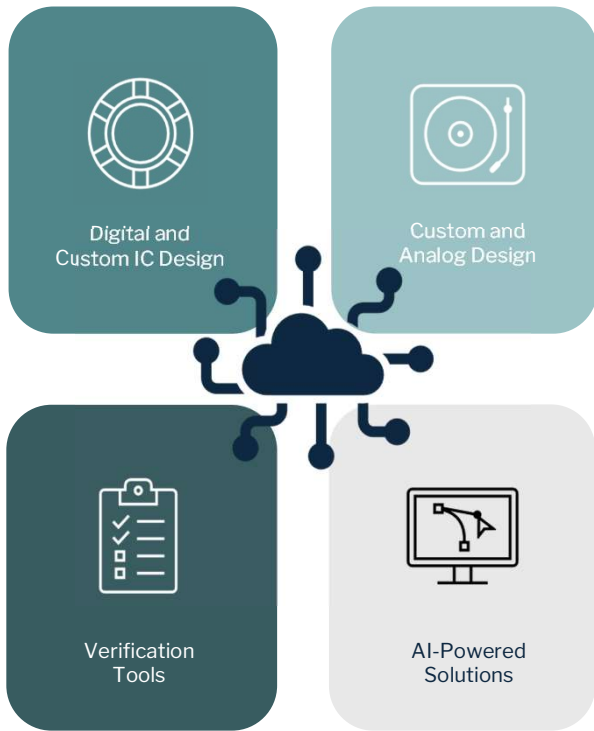
- Custom Compiler: custom IC design tool that automates circuit creation, layout, and optimization, improving productivity for analog and mixed-signal designs
- HSPICE: gold-standard simulator for highly accurate analog, mixed-signal, and RF circuit analysis
- CustomSim: offers fast and accurate mixed-signal simulation for designs with complex analog and digital interactions
- FineSim: High-performance simulation tool optimized for large analog and mixed-signal systems

3. Verification Tools: verification tools ensure that chips function as intended by simulating and testing their behavior across different scenarios, from system to hardware levels.

- VCS: a comprehensive RTL simulation solution for verifying chip designs at a functional level
- ZeBu: a hardware-assisted emulation platform that accelerates the validation of SoCs and early software bring-up
- HAPS: prototyping system to validate performance, power, and functionality
- Verdi: debugging platform that allows engineers to identify and resolve design issues efficiently
- SiliconSmart: automates library characterization for fast and accurate cell modeling
- TestMAX: ensures testability of designs to identify manufacturing defects

4. AI-Powered Solutions: these are machine learning-based tools that optimize various stages of the chip design process, improving productivity and shortening design cycles.

- DSO.ai: design Space Optimization AI automates and accelerates design exploration, delivering better chip designs faster
- VSO.ai: verification Space Optimization for improved functional verification coverage & faster turnaround time
- TSO.ai: test Space Optimization for reduced pattern count, turnaround time and higher coverage
- ASO.ai: analog Space Optimization for analog layout optimization & 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
- Fab.da: manufacturing data analytics for improved process control, time-to-market, and user productivity



Design IP Segment

The Design IP segment includes our Design IP products, which serve companies primarily in the semiconductor and electronics industry.

Synopsys' IP portfolio includes:

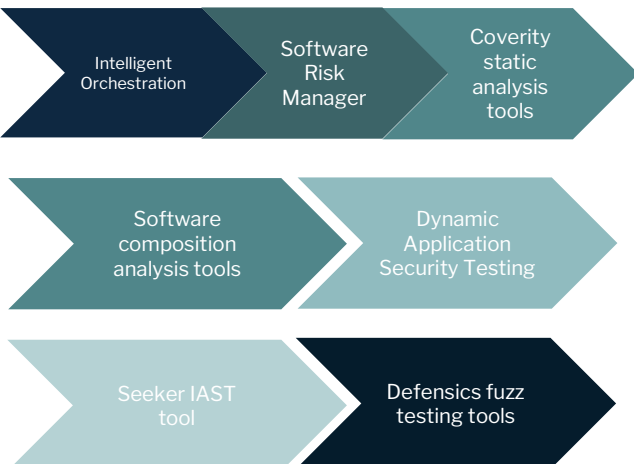
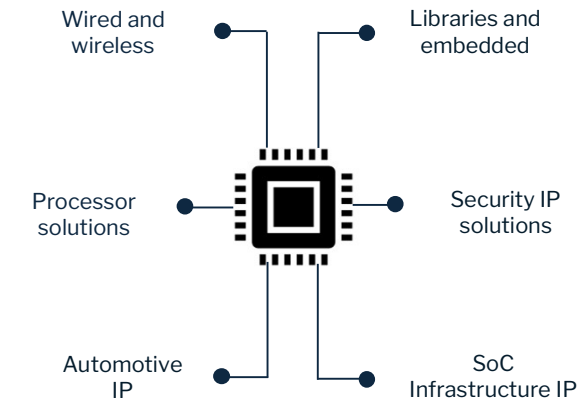
- High-quality solutions for widely used wired and wireless interfaces such as USB, PCI Express, DDR, Ethernet, MIPI, HDMI, and Bluetooth Low Energy;
- Logic libraries and embedded memories, including memory compilers, non-volatile memory, and standard cells with integrated test and repair;
- Processor 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 and reliability standards such as ISO 26262;
- SoC infrastructure IP, datapath and building block IP, mathematical and floating-point components, Arm AMBA interconnect fabric and peripherals, and verification IP.

Software Integrity Segment

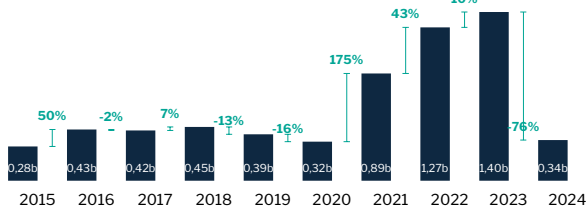
This segment focuses on ensuring software security and quality by addressing vulnerabilities at every stage of the software development lifecycle. Synopsys provides solutions for secure coding, compliance management, and open-source risk mitigation.

Key offerings in this space include:

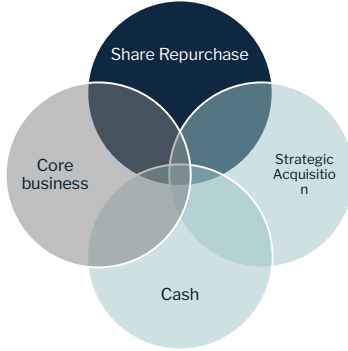
- Intelligent Orchestration solution, which enables DevOps to build a testing pipeline that allows a company to define—within its particular policy guidelines—the rules to determine which tests to run, including the Synopsys portfolio tests, third party products, or open source tests;
- Software Risk Manager, which correlates and prioritizes findings from the Synopsys portfolio, third party products, and open source tools, providing a comprehensive view of software security risk;
- Coverity static analysis tools, which analyze software code to find crash-causing bugs, incorrect program behavior, the latest security vulnerabilities, memory leaks and other performance-degrading flaws;
- Black Duck software composition analysis tools, which scan binary and source code for license and compliance issues and other known security vulnerabilities stemming from incorporated third-party and open source code;
- WhiteHat Dynamic, our latest dynamic application security testing solution, which rapidly and accurately finds vulnerabilities in websites and applications;
- Seeker IAST tool, which identifies exploitable security vulnerabilities while web applications are running, thereby verifying results and eliminating false positives; and
- Defensics fuzz testing tools, which examine security vulnerabilities in software binaries and libraries, particularly network protocols and file formats, by systematically sending invalid or unexpected inputs to the system under test.



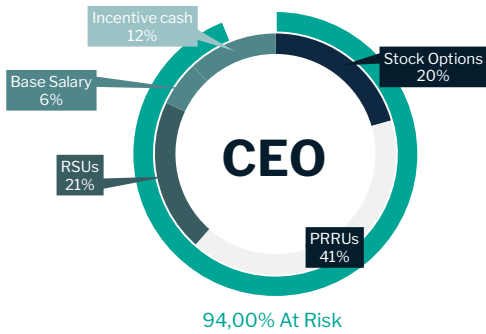
Repurchase of Common Stock



Source: Team Analysis, Company Data

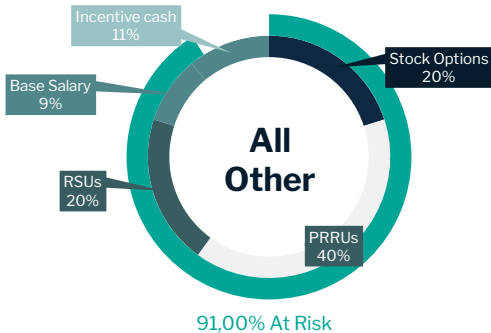


Chief Executive Officer - Dr. de Geus



Source: Team Analysis, Company Data

Other NEOs



Source: Team Analysis, Company Data

Strategic Leadership Development



Capital Allocation: Strategic Focus on Shareholders and Growth

Synopsys adopts a balanced and disciplined approach to capital allocation that reflects its commitment to both shareholder value and long-term growth. In fiscal 2023, the company returned approximately \$1.4 billion to stockholders through share repurchases. This repurchase strategy not only enhances shareholder returns but also reflects confidence in Synopsys' financial strength and long-term prospects.

In addition to returning capital to shareholders, Synopsys prioritizes investments in its core businesses, electronic design automation (EDA) and intellectual property (IP), which are central to its "Silicon to Systems" strategy. These investments drive innovation in critical areas such as AI-powered chip design, advanced process nodes for automotive and high-performance applications, and multi-die system development. By focusing on its high-growth markets, Synopsys ensures its leadership in cutting-edge technologies that underpin global advancements in semiconductors and systems.

Synopsys has a history of executing strategic acquisitions to complement its organic growth. Over its history, Synopsys has completed over 100 M&A transactions, which have allowed the company to expand its portfolio and respond to emerging market demands. This acquisition strategy has enabled Synopsys to integrate new technologies and strengthen its competitive position. A notable example of this is the pending acquisition of ANSYS, Inc., which is expected to further strengthen Synopsys' position in high-performance computing and advanced simulation tools. Such acquisitions allow Synopsys to enhance its product offerings, expand into new markets, and meet the growing demands of its customers across various industries.

Synopsys' strong operating cash flow of \$1.4 billion in fiscal 2024 underscores its robust financial position. This financial discipline enables the company to simultaneously fund R&D initiatives, pursue strategic acquisitions, and deliver value to shareholders. The company's balanced capital allocation framework demonstrates its ability to drive sustainable growth while aligning with shareholder interests.

CEO Background and Executive Compensation Philosophy

Synopsys' CEO, Sassine Ghazi, embodies the company's philosophy of internal leadership development and strategic continuity. Ghazi joined Synopsys in 1998 as an applications engineer and steadily advanced through the organization, taking on roles of increasing responsibility. His leadership journey includes serving as the General Manager of the company's largest business unit, Chief Operating Officer, and President before his promotion to CEO in 2024. This trajectory reflects Synopsys' emphasis on promoting leaders who understand its culture and strategic objectives deeply.

Ghazi's career is marked by significant contributions to Synopsys' technological advancements and operational efficiency. As COO, he played a key role in enhancing the company's Fusion Design Platform, driving its innovative portfolio, and building strong relationships with customers and stakeholders. His expertise spans chip design, applications engineering, and sales, making him uniquely equipped to steer Synopsys through the evolving technological landscape.

On the executive compensation front, Synopsys adopts a "pay-for-performance" philosophy that ties a significant portion of executive remuneration to long-term company performance. For example, Restricted Stock Units (RSUs) and Performance Shares are key elements of the compensation package. RSUs vest based on tenure or the achievement of performance milestones, while Performance Shares are granted only if specific financial goals are met. These structures align executive interests with those of shareholders by emphasizing sustainable growth and innovation.

This incentive-driven approach also minimizes the risks of short-term decision-making, encouraging leaders to focus on long-term strategic goals. By aligning compensation with company performance, Synopsys ensures its executives remain committed to driving innovation, operational excellence, and shareholder value.

Strategic Leadership Development

Synopsys places a high priority on systematic and long-term leadership development, ensuring that its leaders are well-prepared to drive the company's strategic goals. This focus is exemplified in its multi-year succession planning, which paved the way for the smooth leadership transition to Sassine Ghazi as CEO in 2024. The Board of Directors regularly evaluates and prepares for such transitions, ensuring stability and alignment with Synopsys' vision during periods of change.

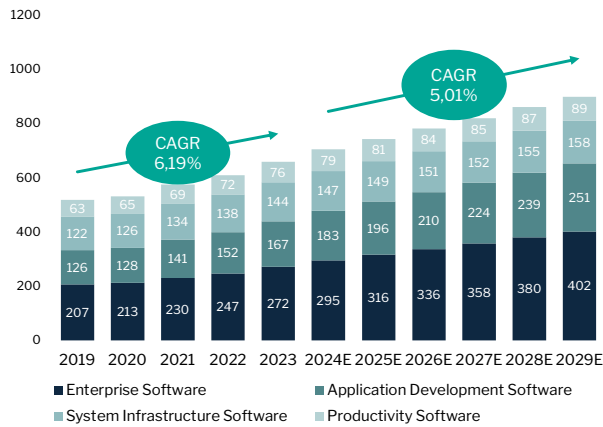
Internal promotion is a cornerstone of Synopsys' leadership strategy. Leaders like Ghazi have been systematically groomed through roles of increasing responsibility, allowing them to gain a comprehensive understanding of the company's operations and culture. This strategy not only ensures continuity but also instills trust and familiarity across the organization, reinforcing Synopsys' commitment to its values and long-term objectives.

The Board also emphasizes leadership succession as a continuous process. For example, Ghazi's career progression included critical milestones such as his promotions from COO to President and eventually to CEO, demonstrating the effectiveness of Synopsys' structured approach to leadership cultivation. These efforts ensure the company has a deep bench of qualified leaders ready to step into key roles as needed.

Moreover, Synopsys' leadership development extends beyond internal roles, focusing on fostering a collaborative environment among management, employees, and stakeholders. By aligning leadership development with its broader strategic goals, Synopsys builds a resilient management framework capable of driving sustained growth and innovation in a highly competitive industry.

SOFTWARE MARKET GROWTH

Revenue in the Software market Worldwide (in billion U.S. dollars)



Source: Statista market insights, Team Analysis

The global software market has seen significant growth in several segments in 2023. As shown in the software product growth chart, the fastest growing segment in 2023 was Artificial Intelligence (AI), with a 39% increase, much higher than other industries such as Design (17%), Marketing, HR, and Security, each with 14% growth.

This highlights the growing importance of AI as a driving force in the global technology sector, with applications increasingly integrated into the creative software segment, where AI-based tools are being used to improve and automate creative processes such as design, video editing, and digital content production.

EDA SOFTWARE INDUSTRY

The Electronic Design Automation (EDA) software market, essential for semiconductor design and manufacturing, has been growing steadily and is forecasted to expand further with a compound annual growth rate (CAGR) of approximately 7% from 2024 to 2029. This growth is fueled by increasing demand for integrated circuits, the proliferation of advanced technologies like 5G, IoT, and artificial intelligence, and the rising complexity of chip designs. EDA tools are crucial for reducing design cycles and ensuring precision in developing cutting-edge technologies such as autonomous vehicles and advanced communication systems.

Key drivers of the sector include the growing adoption of System-on-Chip (SoC) technology, which combines multiple functionalities into a single chip, and advancements in FinFET (Fin Field-Effect Transistor) and 3D chip designs. Moreover, the shift to cloud-based EDA solutions enhances collaboration and accessibility, further boosting market penetration. However, challenges such as the high cost of advanced EDA tools and market saturation in certain regions could moderate growth.

The market's continued innovation and strategic investments by major players, like Synopsys and Cadence, ensure it remains pivotal to technological advancements in the semiconductor and electronics industries. As demand for faster, more efficient chips grows, EDA software providers that prioritize AI-driven features and scalability will likely gain a competitive edge.

Semiconductor IP market

The global semiconductor Intellectual Property (IP) market is projected to experience substantial growth, driven by increasing demand across various industries. The market is forecasted to expand from approximately \$6 billion in 2022 to \$11.3 billion by 2032, growing at a compound annual growth rate (CAGR) of 6.54% during this period. This growth is supported by the rising adoption of technologies such as artificial intelligence (AI), Internet of Things (IoT), and advanced driver-assistance systems (ADAS), all of which rely heavily on specialized semiconductor IP for their design and functionality.

The expansion in AI and machine learning applications is a key driver, as these technologies require advanced chip architectures to optimize processing capabilities. Furthermore, semiconductor IP plays a critical role in enabling cost-efficient, scalable, and high-performance chip designs, making it indispensable for manufacturers.

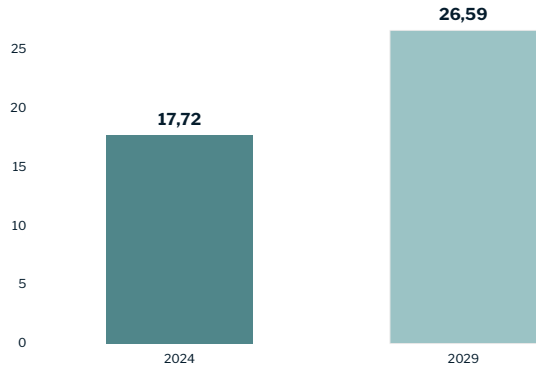
Leading players in the semiconductor IP market continue to dominate by licensing architectures and tools to support cutting-edge developments in sectors like automotive, telecommunications, and consumer electronics. The integration of custom semiconductor IP is expected to further drive innovation, particularly in high-demand markets like 5G technology and data centers.

This positive trajectory indicates that semiconductor IP will remain a cornerstone of technological progress as industries seek to enhance their product efficiency and capabilities.

Cloud Integration Software Market

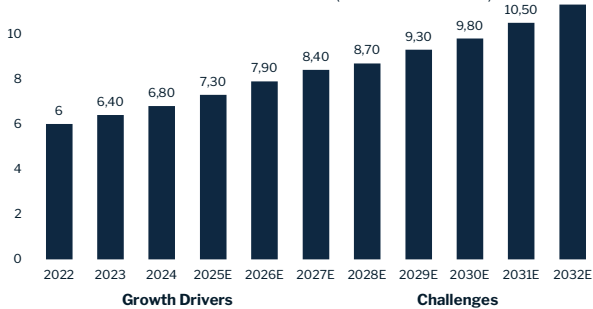
The global Cloud Integration Software market is growing rapidly, driven by increasing cloud adoption across industries. Key growth factors include the demand for seamless integration of cloud applications, the rise of SaaS, IaaS, and PaaS, and the need for efficient data management and real-time analytics. Industries like retail, healthcare, and BFSI are leading the charge, with cloud tools enhancing customer experience and operational efficiency. However, challenges such as data security and the complexity of integrating legacy systems remain. Despite these obstacles, cloud integration's scalability and cost-effectiveness ensure continued growth.

Global Electronic Design Automation Tools Market Size (\$Billion)



Source: Mordor Intelligence

Semiconductor intellectual property (IP) market revenue worldwide from 2022 to 2032 (in billion U.S. dollars)



Growth Drivers

Challenges

Cloud adoption

Data security

SaaS/IaaS/PaaS

Legacy system integration

Real-time analytics

External Analysis

SWOT ANALYSIS

S

Strengths

- Leadership in EDA and semiconductor intellectual property (IP)
- Comprehensive product range and Technological innovation with patents, AI solutions, and cloud technology
- Robust financial growth, global presence, and deep client relationships

W

Weaknesses

- Highly competitive and rapidly evolving industry landscape
- Dependence on significant R&D investments
- Reliance on a limited number of key customers
- Leadership transition may affect operational stability

O

Opportunities

- Increasing demand of semiconductor design solutions
- Growth in software integrity and AI-driven innovations
- Increasing adoption of digitalization and cloud computing
- Potential benefits from mergers, acquisitions, and strategic partnerships

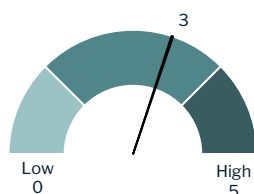
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Threats

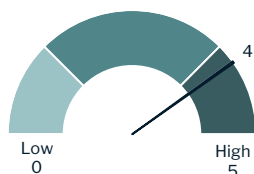
- Increase in competition, including new entrants and competitors in emerging markets
- Regulatory changes, especially export control & compliance in the global market
- Legal risks related to intellectual property and global geopolitical tensions

Porter's Five Forces

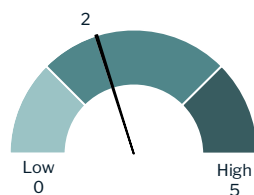
BARGAINING POWER OF SUPPLIERS



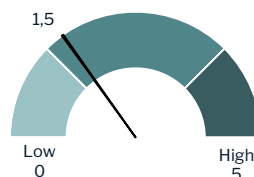
BARGAINING POWER OF BUYERS



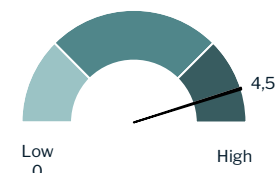
THREAT OF NEW ENTRANTS



THREAT OF SUBSTITUTE PRODUCTS



COMPETITIVE RIVALRY



Contractual Distributor

The bargaining power of suppliers is moderate, as Synopsys depends on specialized inputs like advanced computing infrastructure and skilled labor. Cloud service providers and technology suppliers play a critical role in its operations, giving them leverage in negotiations. Although Synopsys mitigates this risk through long-term partnerships and scale advantages, supply chain disruptions or cost increases could still impact operations. The limited pool of highly specialized talent in the semiconductor industry further amplifies supplier power.

Bargaining power of customers

On the other hand, the bargaining power of buyers is high because Synopsys' customers are sophisticated and typically large corporations, such as semiconductor manufacturers and system designers. These buyers often have specific requirements and can demand tailored solutions, increasing their influence. While switching costs are high due to the complexity and integration of EDA tools, the presence of competitors like Cadence and Mentor Graphics forces Synopsys to continuously innovate and offer competitive pricing to retain its market share.

Threat of new entrants

The threat of new entrants in the EDA and semiconductor IP industry is relatively low due to the high barriers to entry. Synopsys operates in a market that requires significant investment in R&D, advanced technological capabilities, and deep expertise, which can deter new players. Additionally, Synopsys' established brand and extensive portfolio give it a competitive edge, making it difficult for new entrants to gain a foothold. However, advancements in AI and open-source design tools could reduce these barriers over time, allowing smaller or regional players to target niche segments of the market.

Threat of substitute products

The threat of substitutes is relatively low. Synopsys' solutions are highly specialized and deeply integrated into the semiconductor design process, making direct substitution challenging. However, the emergence of open-source tools or simplified AI-driven design automation could pose a threat, especially for smaller companies or cost-sensitive segments. Despite this, Synopsys' advanced technology and comprehensive offerings ensure that it remains a preferred choice for most large-scale clients.

Competition

Industry rivalry is intense, driven by a small number of highly competitive players such as Cadence and Mentor Graphics. The fast pace of technological change and the increasing demand for innovative solutions heighten the competitive environment. Synopsys' leadership in EDA and IP, combined with its strong financial performance, positions it well in this competitive landscape. However, the need to consistently innovate and deliver value remains critical as competitors aim to capture market share and as new technologies emerge.

Financial Analysis

INCOME STATEMENT

Performance Review

From 2015 to 2024, Synopsys demonstrated resilient and sustained revenue growth, driven by its leadership in the electronic design automation (EDA) and semiconductor IP sectors, achieving a CAGR of 11.82%. Revenues rose from \$2.242 billion in 2015 to \$6.127 billion in 2024, showcasing solid and continuous growth. From 2020 to 2024, Synopsys demonstrated robust revenue growth with a CAGR of 13.55%, driven by its leadership in AI-powered EDA tools, addressing rising chip complexities, and expanding its semiconductor IP portfolio.

Future Growth Scenarios (2025-2029)

For the period from 2025 to 2029, Synopsys's revenue growth is projected across three possible scenarios: base, pessimistic, and optimistic. Each scenario reflects varying levels of adoption of Synopsys' new features and innovations, as well as the influence of competition and customer preferences.

Base Scenario

In the base scenario, Synopsys is projected to maintain steady revenue growth with a CAGR of 15.36% from 2025 to 2029. Revenues are projected to reach \$12.045 billion by 2029. In this scenario, Synopsys maintains steady growth, driven by strong demand for EDA tools and semiconductor IP across diversified industries such as automotive, AI, and cloud computing. Continued adoption of AI-driven design solutions and multi-die systems would contribute to consistent performance, supported by existing customer loyalty and its leading market position. Revenues are projected to grow steadily without a significant surge, reflecting historical patterns and market trends.

Pessimistic Scenario

In the pessimistic scenario, Synopsys' growth is slower due to heightened competition from emerging players and cost pressures in R&D, potentially slowing Synopsys' ability to capture market share at its current pace. Regulatory hurdles, geopolitical risks, or delays in the adoption of advanced technologies like AI-enabled chip design could temper growth. However, Synopsys' extensive IP portfolio and recurring subscription revenues would still help sustain modest progress despite these challenges. This scenario assumes a CAGR of approximately 12%, with revenues potentially reaching \$10.557 billion by 2029.

Optimistic Scenario

In the optimistic scenario, Synopsys achieves accelerated growth with a CAGR of 18.84%, with revenues potentially reaching \$13.686 billion by 2029. In this outlook, Synopsys benefits significantly from successful acquisition of firms such as Ansys, accelerated adoption of its AI-driven design tools, particularly in emerging high-growth areas like generative AI, automotive, and 5G chip designs. The transition to cloud-based EDA, coupled with strategic acquisitions and partnerships, strengthens its competitive advantage and expands its customer base. This scenario envisions Synopsys leveraging its leadership position to penetrate new markets aggressively while achieving record renewal rates among existing customers.

Margins

Gross Profit Margin: Synopsys has demonstrated strong gross profit margins at around 80% over time, which are a direct result of its high-value, recurring revenue model. A significant portion of the company's revenue comes from its subscription-based services, including software tools and IP licensing, providing consistent income with high margins. This business model allows Synopsys to scale efficiently while maintaining profitability. Additionally, its strong market position in EDA tools and semiconductor IP, including high-demand products like AI-driven design solutions and multi-die systems, further supports healthy margins.

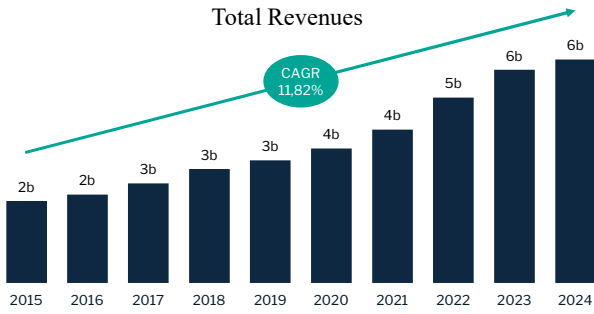
EBIT Margins: Synopsys' operating margins have improved over the years from 17.8% in 2020 to 22.1% in 2024. This rise reflects excellent management of operating costs and improved operating profitability, supported by the growth of recurring revenues. The company has maintained a disciplined approach to R&D investment, ensuring that funds are efficiently allocated to drive future growth while preserving operational profitability. This balance has allowed Synopsys to maintain strong margins despite significant investments in expanding its portfolio of AI-powered solutions, semiconductor IP, and software integrity tools.

Free Cash Flow Margins: In 2024, Synopsys achieved a Quality Profit Ratio of 94%, indicating that its Free Cash Flow (FCF) conversion exceeded net income. This strong cash flow generation highlights Synopsys' financial flexibility, allowing it to fund growth initiatives in the capital-intensive semiconductor industry.

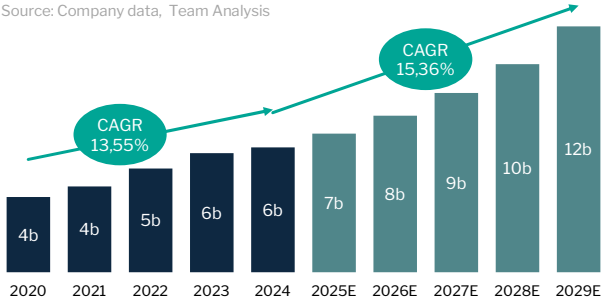
Synopsys has seen impressive growth in its **EPS**, increasing from \$4.3 in 2020 to \$14.5 in 2024, reflecting a Compound Annual Growth Rate (CAGR) of 35.81%. This robust growth showcases the company's ability to enhance profitability and deliver substantial returns to shareholders, even amid economic challenges. Looking ahead, EPS is projected to decrease in 2026 due to a decline in the company's earnings, but they should resume growth, starting the following year lining up on the \$17 level by 2029. This suggests an almost continued positive earnings expansion, albeit at a more moderate pace, likely driven by market maturation and stable cost and revenue management.

The **ROA** has steadily increased from 5% in 2016 to 19% in 2024, indicating improved efficiency in utilizing its assets. This upward trend is expected to stabilize, with projections showing ROA returning to 16% - 17% range by 2029. This indicates a strong ability to generate returns from assets, reflecting enhanced operational efficiency and ongoing value creation for shareholders.

Total Revenues



Source: Company data, Team Analysis

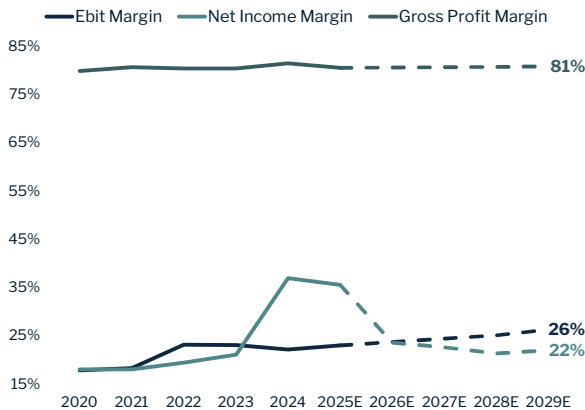
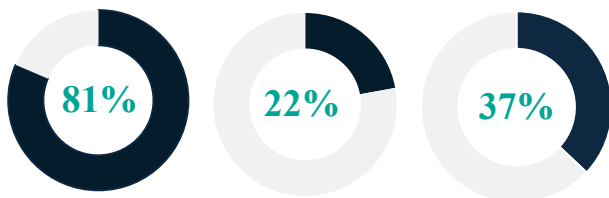


Source: Company data, Team Analysis

Gross Profit Margin

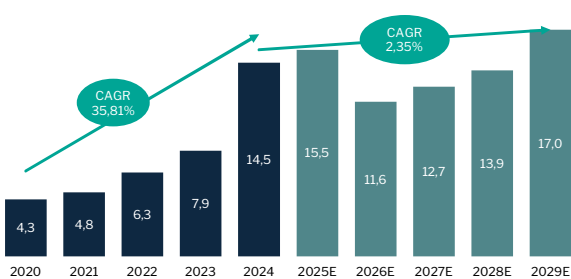
Ebit Margin

Net Income Margin



Source: Company data, Team Analysis

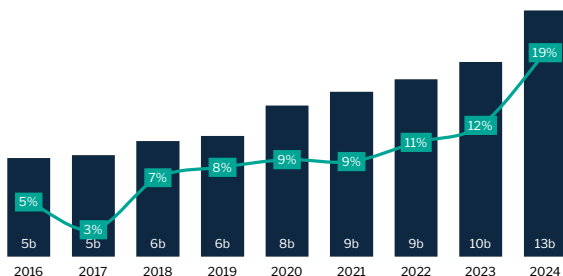
EPS



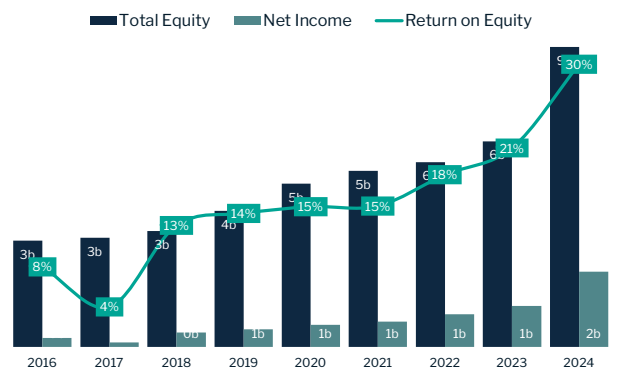
Source: Company data, Team Analysis

Total Assets

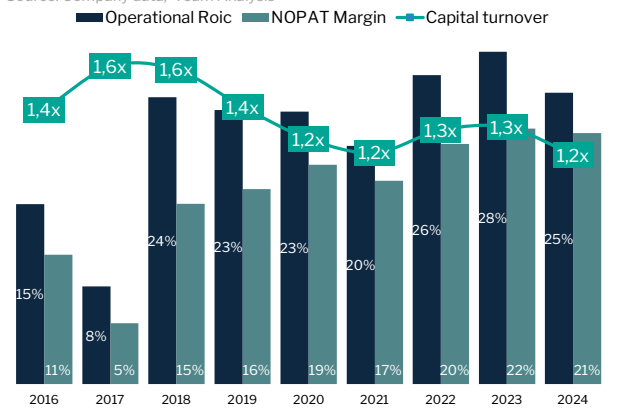
Return on Assets



Key Performance Indicators (KPIs)

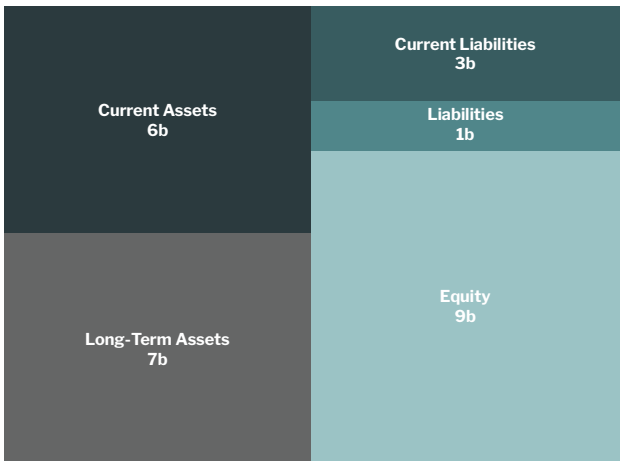


Source: Company data, Team Analysis

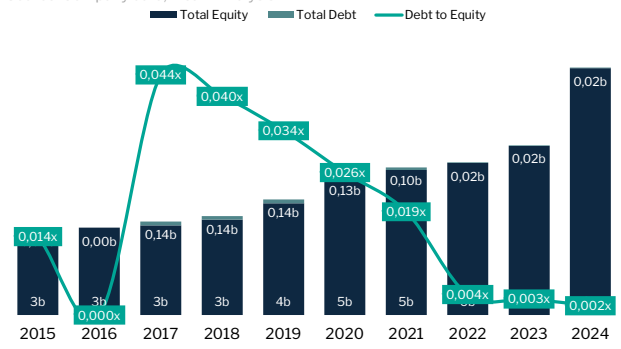


Source: Company data, Team Analysis

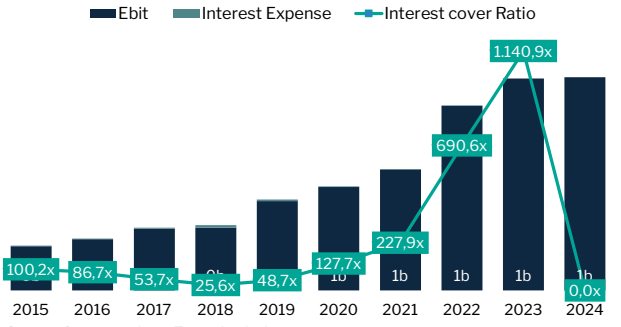
Balance Sheet



Source: Company data, Team Analysis



Source: Company data, Team Analysis



Source: Company data, Team Analysis

Operational Performance

Synopsys' **ROE** has demonstrated a remarkable upward trend from 2016 to 2024, reflecting robust equity management and consistent profitability improvements. Starting at 8% in 2016, ROE steadily increased to reach an impressive 30% by 2024. This growth aligns with stable increases in total equity and net income over the years, signaling effective strategic execution. Notably, the consistent rise in ROE, coupled with a stable net income, underscores Synopsys' ability to optimize shareholder returns while expanding its equity base.

When evaluating Operating ROIC, the upward trajectory is equally striking. ROIC, a combination of NOPAT Margin and Capital Turnover, highlights Synopsys' operational efficiency and capital productivity. From 2016 to 2024, ROIC improved significantly, increasing from 15% to 25%, driven by both margin expansion and improved asset utilization. The NOPAT Margin, representing profitability per unit of revenue, grew from 11% in 2016 to 21% in 2024, reflecting enhanced cost management and operational effectiveness. Meanwhile, Capital Turnover has remained strong, stabilizing around 1.2x in recent years, illustrating the company's efficiency in leveraging invested capital to drive revenue growth.

The data reflects Synopsys' ability to sustain high performance across key metrics despite evolving market conditions. The robust ROIC suggests that for each percentage increase in growth, the company requires a proportionally lower capital investment, enhancing scalability.

BALANCE SHEET

Synopsys exhibits a robust and conservatively structured capital foundation, reflecting effective resource allocation and financial prudence. In 2024, the company's Equity reached \$6 billion, which comfortably supports the Long-Term Assets of \$7 billion. This indicates that Synopsys predominantly relies on equity to finance durable investments, minimizing its dependence on external debt and reducing long-term financial risks. This strategy aligns with the practices of financially stable companies, maintaining a low level of leverage and ensuring resilience against default risks.

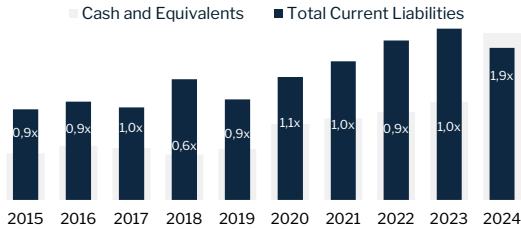
Current Assets of \$6 billion exceed Current Liabilities of \$3 billion, demonstrating Synopsys' ability to meet its short-term obligations through readily available resources. This strong liquidity position underscores efficient treasury management and assures operational stability without the need for external financing.

A clear downward trend in the Debt-to-Equity Ratio is evident from the chart. This reduction reflects Synopsys' focus on maintaining minimal financial leverage while steadily growing its equity base. Over the years, this approach has significantly strengthened the company's financial stability and mitigated risks associated with debt exposure.

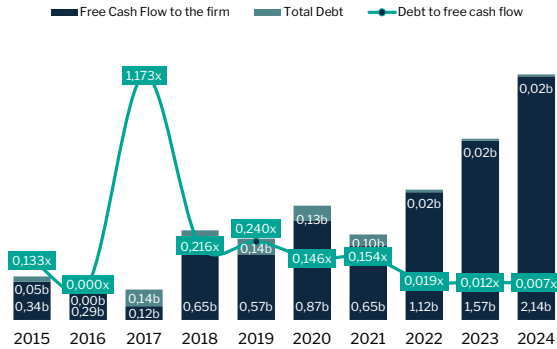
In terms of interest obligations, Synopsys has consistently showcased excellent debt management, with the Interest Cover Ratio reaching extraordinary levels. In 2024, the company reported no interest expenses and that's the reason behind a 0.0x interest cover ratio for this year. This metric further solidifies Synopsys' position as a financially secure organization with negligible exposure to interest-related risks.

Overall, Synopsys stands out as a conservatively financed, well-capitalized enterprise. Its strong equity base, prudent debt management, and exceptional liquidity ensure it remains well-prepared to sustain growth and capitalize on new opportunities while maintaining a low-risk financial profile.

Quick Ratio

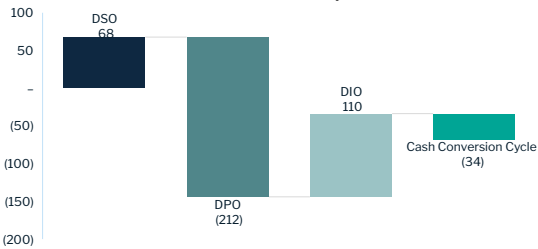


Source: Company data, Team Analysis

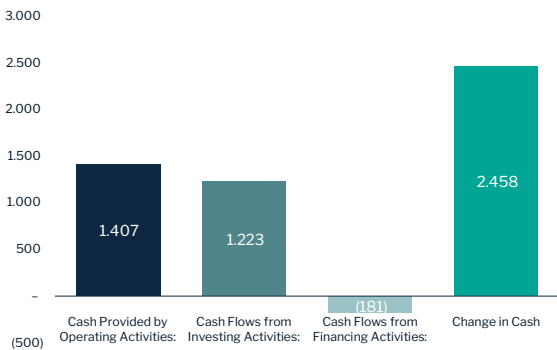


Source: Company data, Team Analysis

Cash Conversion Cycle

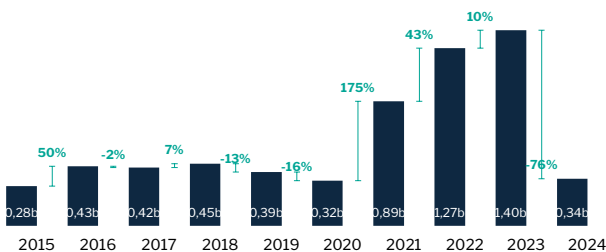


Source: Company data, Team Analysis



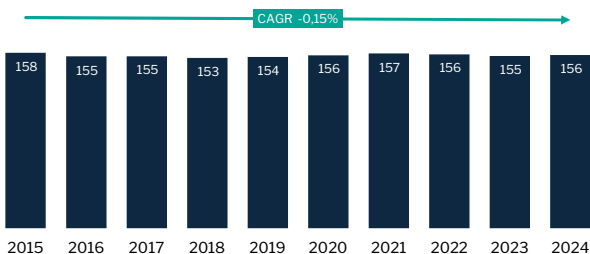
Source: Company data, Team Analysis

Repurchase of Common Stock



Source: Company data, Team Analysis

Diluted Shares Outstanding



Source: Company data, Team Analysis

Synopsys' Quick Ratio from 2015 to 2024 highlights effective liquidity management, demonstrating the company's ability to balance short-term obligations with available cash and liquid assets. From 2015 to 2017, the Quick Ratio remained stable at 1.0x, signaling sufficient liquidity to fully cover current liabilities. However, in 2018, the ratio dipped to 0.6x, which can be attributed to multiple factors, including expanding its product portfolio and acquisitions, such as the purchase of Black Duck Software in late 2017, which carried over into 2018 financials.

From 2020 onwards, Synopsys achieved consistent improvement in its liquidity position. This suggests Synopsys' focus on maintaining an optimal balance between growth investments and liquidity reserves. The management's ability to achieve this balance indicates a disciplined approach to working capital and treasury management, ensuring operational stability without holding excessive idle liquidity.

When analyzing the Free Cash Flow to Debt Ratio, Synopsys shows a consistently strong financial position, supported by robust free cash flow generation and prudent debt levels. From 2015 to 2024, the ratio exhibits a significant improvement, with Free Cash Flow consistently outpacing total debt. By 2024, the ratio was 0.007x, highlighting that Synopsys' free cash flow can easily cover its entire debt, ensuring financial resilience. This financial strength provides Synopsys with the flexibility to allocate cash toward strategic priorities, such as R&D investments, AI-driven innovation, or potential acquisitions, while retaining the capacity to weather unforeseen financial challenges.

For Synopsys, the CCC trend over time (47 days in earlier periods, peaking at 163 days in 2020, and standing at -34 days in the most recent year) suggests a gradual increase in the cycle length, which can be attributed to a combination of factors including its operating model, extended payment terms, and industry-specific dynamics.

In 2024, Synopsys significantly improved its Cash Conversion Cycle (CCC), bringing it to -34 days, marking a notable shift in its working capital strategy. The key driver of this change was a sharp rise in Days Payable Outstanding (DPO) to 212 days, indicating extended payment terms with suppliers. This allowed the company to delay cash outflows, improving liquidity without affecting operations.

Additionally, Days Sales Outstanding (DSO) fell to 68 days, reflecting more efficient customer payment collections, likely due to tighter credit policies and improved receivables management. Meanwhile, Days Inventory Outstanding (DIO) increased slightly to 110 days but remained aligned with Synopsys' operational needs in its R&D-heavy business.

CASHFLOW STATEMENT

Synopsys demonstrates a robust cash flow profile, as highlighted in the provided visual and corroborated by its financial strategy.

Operating Cash Flow: Net cash provided by operating activities decreased to \$1,407 million in 2024, compared to \$1,703 million in 2023. This decline is notable despite a significant increase in net income to \$2,236 million (from \$1,218 million). The company reduced cash outflows from accounts receivable to \$103 million, reflecting better collections or a shift in payment terms. There was a significant cash outflow of \$410 million, up from \$106 million in 2023, likely indicating increased upfront payments or costs tied to large contracts or operations. The sale of a business unit brought a net gain of \$869 million, showing strategic restructuring.

Investing Cash Flow: Net cash from investing activities improved dramatically to \$1,223 million in 2024, from a negative \$482 million in 2023. This increase stems primarily from business divestiture, generating a substantial \$1.447 billion from selling a business unit.

Financing Cash Flow: Cash used in financing activities significantly declined to \$181 million in 2024. Unlike 2023, when Synopsys repurchased \$1.161 billion of its stock, no such activity occurred in 2024, suggesting a Synopsys has consistently emphasized share repurchases as a core component of its capital allocation strategy, deploying \$1 billion annually in recent years. This approach serves two key purposes:

- **Enhancing Shareholder Value:** By reducing the number of shares outstanding, Synopsys directly boosts metrics like Earnings Per Share (EPS), enhancing returns for investors. Share buybacks reflect confidence in the company's long-term growth potential and signal financial stability
- **Offsetting Dilution from Stock-Based Compensation:** As a technology company, Synopsys relies heavily on equity-based incentives to attract and retain top talent. Repurchases counteract the dilution caused by issuing new shares, ensuring minimal impact on shareholder equity

Over the past decade, Synopsys has successfully managed to stabilize its diluted shares outstanding, with the number decreasing from 158 million in 2014 to 155 million in 2023, reflecting a Compound Annual Growth Rate (CAGR) of -0.16%. This small but steady decline indicates that the company's share repurchase program has effectively neutralized the impact of stock-based compensation.

In 2024, however, there was a significant shift in Synopsys' approach. The company refrained from repurchasing stock, which marked a departure from its usual practice of consistently buying back shares. This strategic change could be due to various factors, such as prioritizing acquisitions, investments in R&D, or an overall shift in capital allocation following its major divestitures and improved cash reserves.

Valuation

DCF VALUATION

Weighted Average Cost of Capital

| | |
|--|----------------------|
| Risk free rate (R_f) | 4,03% ⁽¹⁾ |
| Country risk premium | 0,53% ⁽²⁾ |
| Equity risk premium ($R_m - R_f$) | 4,09% ⁽³⁾ |
| Equity Beta | 1,11 ⁽⁴⁾ |
| Cost of Equity (K_e) | 9,10% |
| Cost of debt | 4,62% ⁽⁵⁾ |
| Tax rate | 4,56% |
| After-tax Cost of Debt (K_d) | 4,41% |

Capital Structure

| | |
|---|--------------|
| Equity | 99% |
| Debt | 1% |
| Weighted Average Cost of Capital | 9,06% |

We estimate a WACC of 9,06% for SYNOPSISYS. To determine the cost of debt, we add SYNOPSISYS' debt rating-implied corporate spread to the risk-free rate. To reflect SYNOPSISYS' global operations, we use a revenue-weighted spread plus the risk-free rate (US5y), adjusted based on regional revenue distribution. The cost of equity is calculated using the CAPM formula, incorporating a revenue-weighted equity risk premium. The Beta is derived from a direct correlation with the MSCI WORLD, as we believe this benchmark aligns more closely with SYNOPSISYS' global reach and its potential market movements.

We expect the terminal growth rate to stabilize at 6% after 2029 based on projected growth of the industry in core markets of operation. We see potential upside for the terminal growth rate based on the possible favorable market position and economic conditions. This will result in further appreciation of the share price far beyond our target price. Our terminal value also implies an exit EV/EBITDA multiple of 40x.

SCENARIOS

BEAR CASE

BASE

BULL CASE



Global competitive situation in the sector

Systems and emerging EDA providers innovate faster or offer lower-cost alternatives, causing Synopsys to lose market share

Synopsys maintains leadership due to its comprehensive toolset, long-term customer relationships, and dominance in high-value IP solutions

Synopsys extends its market dominance through cutting-edge innovations in AI-powered chip design and tighter integration with semiconductor manufacturing workflows

Market share

+2%

+5-6%

+9%



Expansion through strategic acquisitions

Synopsys invests in acquisitions that fail to integrate seamlessly or deliver expected synergies, leading to inefficiencies

The company continues its strategic acquisitions to enhance its IP portfolio and strengthen its position in critical areas like AI and cybersecurity

Synopsys acquires a transformative player (e.g., in AI-driven automation or photonics design), accelerating growth and ecosystem dominance

Customer Base

+5-10%

+15%

+20%



Innovation for semiconductor design

Competitors match or outpace Synopsys' AI-driven design tools, making differentiation harder. Customers perceive limited added value, slowing adoption

Synopsys steadily integrates advanced AI features into its design tools, enhancing user productivity and maintaining strong demand

Synopsys revolutionizes semiconductor design with AI breakthroughs that enable significant reductions in time-to-market and cost, setting new industry standards

Revenue growth

+10% YoY

13% YoY

+15% YoY

Price target SNPS

560,60

618,74

699,27

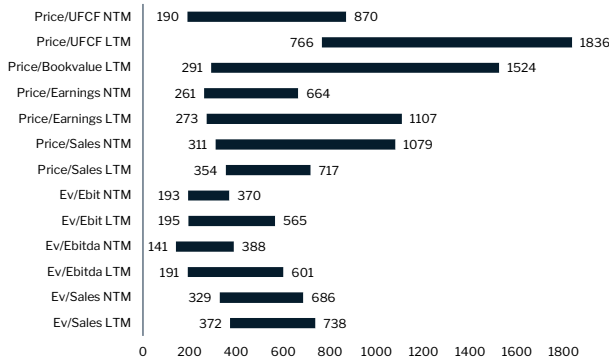
% Change from current price

11%

22%

38%

RELATIVE VALUATION



We identify EV/EBITDA as the most appropriate multiple for valuing Synopsys due to the strong margins and scalability within the design software and semiconductor industries. This metric effectively captures operating profitability while accounting for the high R&D investments and capital expenditures characteristic of the sector. Synopsys' scalable EDA tools, robust recurring revenues, and expanding margins further justify this choice. Currently, Synopsys trades at a trailing twelve-month (LTM) EV/EBITDA multiple of 52.7x, well above the peer group average of 37.2x. This premium is a reflection of Synopsys' competitive advantages, such as its leadership in electronic design automation (EDA), its advanced semiconductor IP portfolio, and its innovations in AI-driven solutions for chip design.

The Price/Earnings (P/E) ratio provides an additional lens for understanding valuation. Synopsys has a P/E ratio of 63.6x (LTM), compared to the sector average of 37.6x. This indicates that while the market has high expectations for Synopsys' sustained earnings growth, the valuation also suggests a moderate premium due to its strong competitive position and growth prospects.

Based on our analysis, Synopsys aligns strongly with both qualitative and quantitative investment criteria, establishing itself as a high-quality business within the semiconductor and electronic design automation (EDA) industries.

Qualitatively, Synopsys benefits from a unique business model built around recurring revenue streams via its SaaS and licensing offerings. It operates on a global scale with a diversified customer base that includes semiconductor leaders and system manufacturers, the company is well-positioned for sustainable growth. Quantitatively, Synopsys meets most of the rigorous financial metrics used to assess quality investments. The company maintains a strong balance sheet with a low Debt-to-Equity ratio (<0.8) and an EBIT-to-interest expense ratio well above 5, reflecting robust financial health and conservative leverage. Over the past five years, it has achieved impressive revenue and EBITDA CAGRs of over 5% and 7%, respectively, affirming its capability to generate sustainable growth. However, the company's average return on invested capital (ROIC) over the last five years falls slightly below the benchmark of 15%, reflecting its high reinvestment requirements in R&D, which is typical for its industry.

We reiterate our BUY recommendation for Synopsys with robust upside potential based on intrinsic valuation methods, supported by scenario and sensitivity analyses. Synopsys remains well-suited for investors seeking exposure to technology and semiconductor innovation, backed by strong financial and operational

Qualitative Factors

| | |
|---------------------------|-------------------------------------|
| Unique business model | <input checked="" type="checkbox"/> |
| Operates globally | <input checked="" type="checkbox"/> |
| Diversified customer base | <input checked="" type="checkbox"/> |
| Capable of Growing | <input checked="" type="checkbox"/> |
| Competitive advantages | <input checked="" type="checkbox"/> |
| Pricing Power | <input checked="" type="checkbox"/> |
| Leading Market position | <input checked="" type="checkbox"/> |
| Capable Management | <input checked="" type="checkbox"/> |
| Recession resistant | <input checked="" type="checkbox"/> |
| Immune to disruption | <input checked="" type="checkbox"/> |

Quantitative Factors

| | |
|----------------------|-----|
| Debt/Equity <0.8 | Yes |
| Ebit/interst exp. >5 | Yes |
| Revenue 5y CAGR > 5% | Yes |
| ROIC 5y Avg > 15% | NO |
| FCF/Net income > 80% | Yes |
| Ebitda 5y CAGR > 7% | Yes |

Rapid Technological Innovation

Fierce Competition

Acquisition Reliance

Cybersecurity Threats

Supply Chain Disruptions

Acquisition Integration

Macroeconomic Instability

Customer Concentration

Regulatory Risks

Semiconductor Industry Cycles

Geopolitical Factors

Technological Disruption



Strategic Risks



Operational Risks



Financial Risks



External Risks

1) Strategic Risks Impacting Market Position and Growth

Synopsys faces multiple strategic risks that could impact its long-term growth trajectory. First, technological innovation is crucial in the competitive semiconductor and EDA industries. Synopsys must continue to innovate, particularly with emerging technologies like AI-driven chip design and quantum computing, to maintain its market leadership. If the company fails to keep pace with these advancements, it risks losing its competitive edge to more agile or innovative competitors.

Additionally, competition remains a significant risk. Synopsys competes with other large EDA and semiconductor companies, and failure to adapt to evolving market needs or pricing pressures could result in lost market share. This is especially critical in the fast-evolving sectors like automotive, AI, and cloud computing, where customer requirements change rapidly.

Synopsys also heavily relies on acquisitions for growth, integrating new technologies or expanding into new markets. However, if these acquisitions fail to integrate seamlessly or realize the expected synergies, Synopsys could face operational inefficiencies and unanticipated costs, which might undermine its long-term growth plans. Successful acquisitions are key to maintaining market leadership, but the risk of integration challenges remains.

2) Operational Risks Affecting Business Stability

Synopsys faces several operational risks that could disrupt its business. Cybersecurity threats are among the most significant. Given the sensitive nature of the data and intellectual property that Synopsys handles, a breach or attack could compromise customer information, proprietary technology, and disrupt operations. Such events could damage customer trust, lead to costly litigation, and disrupt service delivery.

In addition, supply chain disruptions pose operational risks. Synopsys relies on a global network of suppliers to produce the necessary hardware and software components for its products. Issues such as geopolitical instability, trade restrictions, or logistical bottlenecks could delay production, affecting the timely delivery of products and services to customers. Any such disruptions could result in revenue loss and affect the company's ability to meet client expectations.

Finally, integration challenges with acquired companies present operational risks. As Synopsys continues to expand its product offerings through acquisitions, difficulties in merging these companies—whether in terms of technology, culture, or operations—could result in inefficiencies, missed opportunities, or a failure to realize the anticipated benefits.

3) Financial Risks Impacting Profitability

Several financial risks could impact Synopsys' profitability. Macroeconomic downturns or global economic instability could lead to reduced customer spending on R&D and technology upgrades, which would directly impact demand for Synopsys' products and services. In times of economic uncertainty, companies may tighten budgets, leading to slower growth or a decline in the sales of Synopsys' solutions.

Customer concentration also poses a financial risk. While Synopsys serves a broad range of industries, a significant portion of its revenue comes from a limited number of large customers. If any of these key clients face financial distress, reduce their spending, or shift to competitors, Synopsys could experience a sudden and significant drop in revenue. Diversification away from large, concentrated accounts is a risk mitigation strategy, but too much reliance on a small customer base remains a vulnerability.

Additionally, regulatory risks could impose unforeseen costs or operational restrictions. Synopsys operates in multiple jurisdictions and must comply with various regulations, including export controls and data protection laws like GDPR. Changes in these laws or failure to comply could lead to fines, legal penalties, or barriers to doing business in certain regions, potentially damaging Synopsys' financial standing.

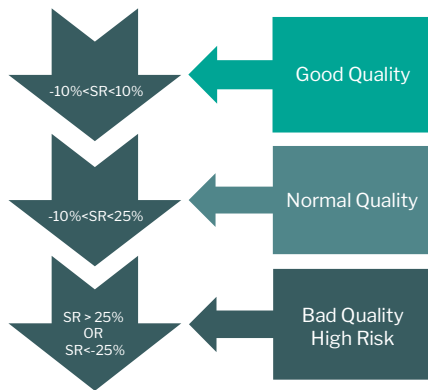
4) External Risks from Global Factors

External risks include global factors like the cyclical nature of the semiconductor industry. Synopsys is heavily reliant on the semiconductor market, which is subject to economic cycles. During downturns, demand for semiconductor chips and related design tools can drop, affecting Synopsys' revenue. If the global economy slows or semiconductor R&D spending decreases, Synopsys could see reduced demand for its products and services.

Geopolitical risks also play a significant role. Synopsys operates globally and is subject to political instability, trade restrictions, and tariffs, especially in key markets like China and Europe. These geopolitical factors could disrupt operations, increase costs, or limit market access, particularly for its semiconductor solutions, which rely on global supply chains and markets.

Finally, disruptive technological innovations outside of Synopsys' control could challenge its position in the market. For example, breakthroughs in alternative chip design methodologies or new design automation tools could reduce demand for traditional EDA solutions. As technology evolves rapidly, Synopsys must stay ahead of such trends to avoid being displaced by newer, more efficient technologies.

APPENDIX



| SLOAN RATIO | | | | | | |
|---------------------------|--------------|---------------|---------------|--------------|---------------|---------------|
| | FY2020A | FY2021A | FY2022A | FY2023A | FY2024A | LTM |
| Net Income | 664 | 758 | 985 | 1,230 | 2,263 | 2,263 |
| Cash Flow from Operations | 991 | 1,493 | 1,739 | 1,703 | 1,407 | 1,407 |
| Cash Flow from Investing | (360) | (549) | (573) | (482) | 1,223 | 1,223 |
| Total Assets | 8,030 | 8,752 | 9,418 | 10,333 | 13,074 | 13,074 |
| Sloan Ratio | 0,42% | -2,13% | -1,93% | 0,08% | -2,80% | -2,80% |
| Interpretation | Good Quality | Good Quality | Good Quality | Good Quality | Good Quality | Good Quality |

The profits reported in the income statement, along with revenue, are among the key financial metrics closely monitored by investors, as they directly influence the short-term performance of the stock price. However, this focus can place pressure on management, pushing them to adopt accounting practices aimed at meeting market expectations, potentially resulting in profits that may not be sustainable in the long run. Provisions, being subject to discretionary estimates, are one of the areas where more aggressive management can intervene.

Sloan highlighted that companies with a high level of accruals, meaning a high proportion of provisions, tend to generate lower stock returns compared to those with a lower provision ratio. The Sloan ratio, which represents the percentage of provisions relative to total assets, is thus a useful indicator for assessing the quality of a company's earnings.

Our analysis indicates that the company's Sloan Ratio falls within the optimal range of -10% to 10%. This figure reflects a high quality of earnings, suggesting that the company's profitability is solid and sustainable in the long term. In this context, we believe the risk for investors is limited, with an optimal balance between provisions and operating earnings. This positioning indicates prudent management and a healthy financial foundation.

PIOTROSKI F-SCORE

The Piotroski F-Score is a fundamental analysis tool developed by accounting professor Joseph D. Piotroski to assess a company's financial health. This score comprises nine financial criteria, divided into three main categories: profitability, operational efficiency, and capital structure. Each metric within these categories is assigned one point if it meets certain favorable conditions, resulting in a cumulative score that ranges from 0 to 9.

Over the past 20 years, a stock selection strategy within the S&P 500 that used a Piotroski F-Score greater than 6 and included annual rebalancing would have outperformed the S&P 500, achieving a compound annual growth rate (CAGR) of 14.8%. This superior performance highlights how the Piotroski F-Score can enhance returns within a value investing strategy, demonstrating its effectiveness in selecting financially strong companies relative to the broader market.

Our analysis indicates that the company's Piotroski F-Score in 2024 is within the optimal range of 7 to 9, reflecting a strong financial position and robust fundamentals. This high score suggests the company excels across profitability, operational efficiency, and capital structure management. In this context, we consider the investment risk to be limited, as the financial indicators demonstrate effective management and resilience. With this strong foundation, the company is well-positioned for sustainable growth, making it an attractive option for value-focused investors.

ALTMAN Z-SCORE

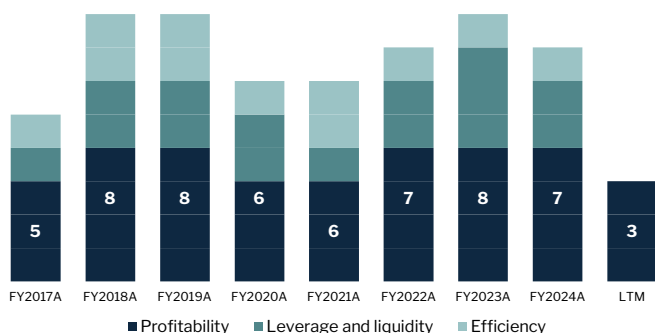
| | Historical | | | | Projected | | |
|-----------------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| | FY2022A | FY2023A | FY2024A | LTM | FY2025A | FY2026A | FY2027A |
| 1. | 0,3 | 0,3 | 0,5 | 0,5 | 0,5 | 0,6 | 0,6 |
| 2. | 0,1 | 0,1 | 0,2 | 0,2 | 0,2 | 0,1 | 0,1 |
| 3. | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 | 0,1 |
| 4. | 20 | 19 | 19 | 19 | 20 | 17 | 17 |
| 5. | 0,54 | 0,57 | 0,47 | 0,47 | 0,47 | 0,50 | 0,58 |
| Z-score | 13,7 | 13,0 | 13,3 | 13,3 | 13,6 | 11,8 | 11,9 |
| Interpretation | Safe zone | Safe zone | Safe zone | Safe zone | Safe zone | Safe zone | Safe zone |

The Altman Z-score is a predictive financial metric designed to assess the likelihood of a company's insolvency within the next two years. Developed to anticipate bankruptcy risk, Altman's model has demonstrated an accuracy rate of 95% one year before bankruptcy, decreasing to 72% two years before and 52% three years before.

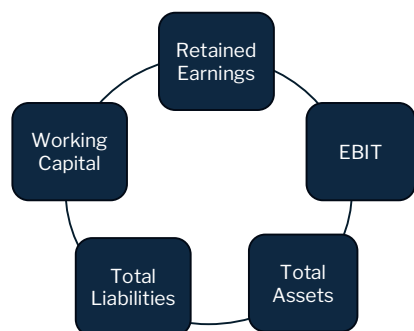
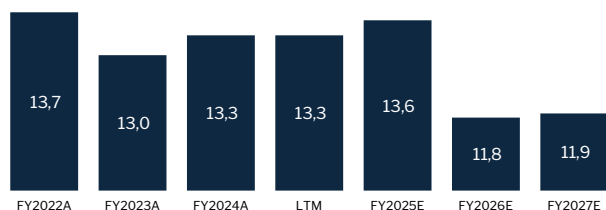
This formula measures the "distance" between a company's financial ratios and those typical of distressed companies. A high Z-score indicates a lower risk of failure, while a low score signals higher risk, providing investors and analysts with a key parameter to evaluate a company's creditworthiness and financial stability.

Based on our analysis, the company is in a safe zone, with a low risk of default in the short to medium term. This high score indicates a solid financial structure and a stable capacity to generate operating cash flows. Assets are efficiently utilized, and leverage is maintained at manageable levels, making this company an attractive option for investors seeking stability and resilience to market shocks. This positioning inspires confidence in the company's management reliability and long-term sustainability.

Piotroski F-Score



Z-score



| | INDICATORS | | | | | | | | | | | | | |
|----------------------------|------------|---------|---------|---------|---------|---------|----------|---------|-------|----------|----------|----------|----------|-----------|
| | FY2017A | FY2018A | FY2019A | FY2020A | FY2021A | FY2022A | FY2023A | FY2024A | LTM | FY2025E | FY2026E | FY2027E | FY2028E | FY2029E |
| Margins | | | | | | | | | | | | | | |
| Gross Profit Margin | 79% | 79% | 79% | 80% | 81% | 80% | 80% | 81% | 81% | 81% | 81% | 81% | 81% | 81% |
| EBITDA Margin | 19% | 17% | 21% | 22% | 22% | 26% | 26% | 27% | 27% | 25% | 26% | 27% | 27% | 28% |
| EBIT Margin | 14% | 13% | 17% | 18% | 18% | 23% | 23% | 22% | 22% | 23% | 24% | 24% | 25% | 26% |
| Net Income Margin | 5% | 14% | 16% | 18% | 18% | 19% | 21% | 37% | 37% | 36% | 24% | 23% | 21% | 22% |
| Free Cash Flow Margin | 5% | 21% | 17% | 24% | 15% | 22% | 27% | 35% | 35% | 15% | 18% | 27% | 13% | 21% |
| Profitability | | | | | | | | | | | | | | |
| Return on Assets | 3% | 7% | 8% | 9% | 9% | 11% | 12% | 19% | 17% | 17% | 12% | 13% | 14% | 16% |
| Return on Equity | 4% | 13% | 14% | 15% | 15% | 18% | 21% | 30% | 25% | 25% | 17% | 19% | 21% | 25% |
| Return on invested capital | 3% | 8% | 9% | 9% | 9% | 11% | 13% | 11% | 10% | 11% | 11% | 12% | 13% | 15% |
| Growth | | | | | | | | | | | | | | |
| Operational Roic | 8% | 24% | 23% | 23% | 20% | 26% | 28% | 25% | 23% | 27% | 30% | 31% | 32% | 36% |
| NOPAT Margin | 5% | 15% | 16% | 19% | 17% | 20% | 22% | 21% | 21% | 22% | 21% | 21% | 20% | 21% |
| Capital turnover | 1.6x | 1.6x | 1.4x | 1.2x | 1.2x | 1.3x | 1.3x | 1.2x | 1.1x | 1.2x | 1.4x | 1.5x | 1.6x | 1.8x |
| Reinvestment rate (5%) | 61% | 21% | 22% | 22% | 25% | 19% | 18% | 20% | 22% | 19% | 17% | 16% | 16% | 14% |
| Reinvestment rate (10%) | 121% | 41% | 43% | 43% | 50% | 38% | 36% | 41% | 44% | 37% | 33% | 32% | 32% | 27% |
| Liquidity | | | | | | | | | | | | | | |
| Current Ratio | 1.0x | 0.7x | 1.0x | 1.2x | 1.2x | 1.1x | 1.1x | 2.4x | 2.4x | 3.1x | 2.7x | 2.6x | 2.3x | 2.1x |
| Quick Ratio (Acid Test) | 1.0x | 0.6x | 0.9x | 1.1x | 1.0x | 0.9x | 1.0x | 1.9x | 1.9x | 2.8x | 2.4x | 2.3x | 2.0x | 1.8x |
| Activity | | | | | | | | | | | | | | |
| Asset Turnover | 0.5x | 0.5x | 0.5x | 0.5x | 0.5x | 0.5x | 0.6x | 0.5x | 0.5x | 0.5x | 0.5x | 0.6x | 0.6x | 0.7x |
| DSO | 67 | 66 | 77 | 90 | 82 | 69 | 75 | 68 | 56 | 58 | 66 | 74 | 73 | 66 |
| DPO | 11 | 29 | 28 | 12 | 13 | 12 | 31 | 212 | 373 | 187 | 52 | 42 | 34 | 28 |
| DIO | 20 | 52 | 69 | 82 | 95 | 81 | 86 | 110 | 116 | 108 | 114 | 116 | 117 | 120 |
| Cash Conversion Cycle | 75 | 88 | 119 | 160 | 163 | 137 | 129 | (34) | (202) | (21) | 128 | 148 | 156 | 157 |
| Leverage | | | | | | | | | | | | | | |
| Debt to Equity | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x |
| Debt to Capital | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x |
| Debt to free cash flow | 1.2x | 0.2x | 0.2x | 0.1x | 0.2x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x |
| Debt / EBITDA | 0.3x | 0.3x | 0.2x | 0.2x | 0.1x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x | 0.0x |
| Coverage | | | | | | | | | | | | | | |
| Interest cover Ratio | 53.7x | 25.6x | 48.7x | 127.7x | 227.9x | 690.6x | 1.140.9x | - | - | 4.006.5x | 4.850.3x | 5.967.6x | 7.460.2x | 10.141.0x |

VALUATION

| Weighted Average Cost of Capital | |
|---|----------------------|
| Risk free rate (Rf) | 4.03% ⁽¹⁾ |
| Country risk premium | 0.53% ⁽²⁾ |
| Equity risk premium (Rm - Rf) | 4.09% ⁽³⁾ |
| Equity Beta | 1.11 ⁽⁴⁾ |
| Cost of Equity (Ke) | 9.10% |
| Cost of debt | 4.62% ⁽⁵⁾ |
| Tax rate | 4.56% |
| After-tax Cost of Debt (Kdt) | 4.41% |
| Capital Structure | 0 |
| Equity | 99% |
| Debt | 1% |
| Weighted Average Cost of Capital | 9.06% |

- (1) Based on the current US5y
- (2) W.average of CRPs according to the revenue divided by geographical area
- (3) W.average of ERPs according to the revenue divided by geographical area
- (4) Based on a 5 year weekly correlation with the S&P 500
- (5) Based on weighted average historical cost of debt

| Discounted Cash Flow | | Projected | | | | | |
|---|-----------|-----------|--------------|--------------|--------------|--------------|--------------|
| <i>Amounts in millions, except per share amount</i> | | Units | FY2025E | FY2026E | FY2027E | FY2028E | FY2029E |
| EBIT | \$ | | 1,563 | 1,816 | 2,141 | 2,560 | 3,164 |
| % YoY Growth | % | | 15% | 16% | 18% | 20% | 24% |
| Taxes | \$ | | (154) | (201) | (350) | (578) | (705) |
| Tax Rate/Ebit | % | | 10% | 11% | 16% | 23% | 22% |
| NOPAT | \$ | | 1,408 | 1,615 | 1,791 | 1,983 | 2,459 |
| + Depreciation and Amortization | \$ | | 170 | 184 | 202 | 225 | 241 |
| D&A % of Revenues | % | | 2.5% | 2.4% | 2.3% | 2.2% | 2.0% |
| ± Changes in working capital | \$ | | (428) | (285) | 562 | (656) | 143 |
| % YoY Growth current Assets | % | | 24% | 9% | -1% | 13% | 2% |
| % YoY Growth current Liabilities | % | | -3% | 28% | 1% | 28% | 8% |
| - Capital expenditures | \$ | | (136) | (169) | (211) | (265) | (361) |
| Capex % of Revenue | % | | 2% | 2% | 2% | 3% | 3% |
| Unlevered Free Cash Flows | \$ | | 1,014 | 1,346 | 2,344 | 1,286 | 2,482 |
| Discount rate | % | | 9.06% | 9.06% | 9.06% | 9.06% | 9.06% |
| Discount period | | | 0.1 | 1.1 | 2.1 | 3.1 | 4.1 |
| Discount factor | | | 1.00 | 0.91 | 0.84 | 0.77 | 0.70 |
| Present Value of Unlevered Free Cash Flow | \$ | | 1,010 | 1,228 | 1,962 | 986 | 1,746 |

| DCF Value - Perpetuity Growth | |
|------------------------------------|---------------|
| NPV of UFCF 2025 - 2029 | 6.932 |
| PV of Terminal Value | 88.738 |
| Implied Enterprise Value | 95.670 |
| Less: Debt | 684 |
| Add: Cash | 3.897 |
| Add: short-term investments | 154 |
| Implied Equity Value | 99.036 |
| Diluted shares | 156 |
| Implied Value Per Share | 635.09 |

| Method | Weight |
|------------------------|--------|
| Exit Multiple | 80% |
| Perpetuity growth rate | 20% |

| Wacc | Perpetuity growth Rate | | | | | |
|------|------------------------|--------|--------|--------|--------|-------|
| | 454 | 5,50% | 5,75% | 6,00% | 6,25% | 6,50% |
| 8,6% | 459,54 | 495,49 | 538,47 | 590,74 | 655,69 | |
| 8,8% | 426,26 | 456,58 | 492,29 | 534,96 | 586,87 | |
| 9,1% | 397,67 | 423,54 | 453,65 | 489,11 | 531,48 | |
| 9,3% | 372,83 | 395,15 | 420,85 | 450,75 | 485,96 | |
| 9,6% | 351,05 | 370,49 | 392,66 | 418,18 | 447,87 | |

| Wacc | Exit Multiple | | | | | |
|------|---------------|--------|--------|--------|--------|-------|
| | 680 | 39,5x | 39,8x | 40,0x | 40,3x | 40,5x |
| 8,6% | 684,62 | 688,54 | 692,45 | 696,36 | 700,27 | |
| 8,8% | 678,65 | 682,53 | 686,41 | 690,28 | 694,16 | |
| 9,1% | 672,75 | 676,59 | 680,43 | 684,27 | 688,11 | |
| 9,3% | 666,92 | 670,72 | 674,53 | 678,33 | 682,14 | |
| 9,6% | 661,15 | 664,92 | 668,69 | 672,46 | 676,23 | |

RELATIVE VALUATION

Enterprise Value Multiples

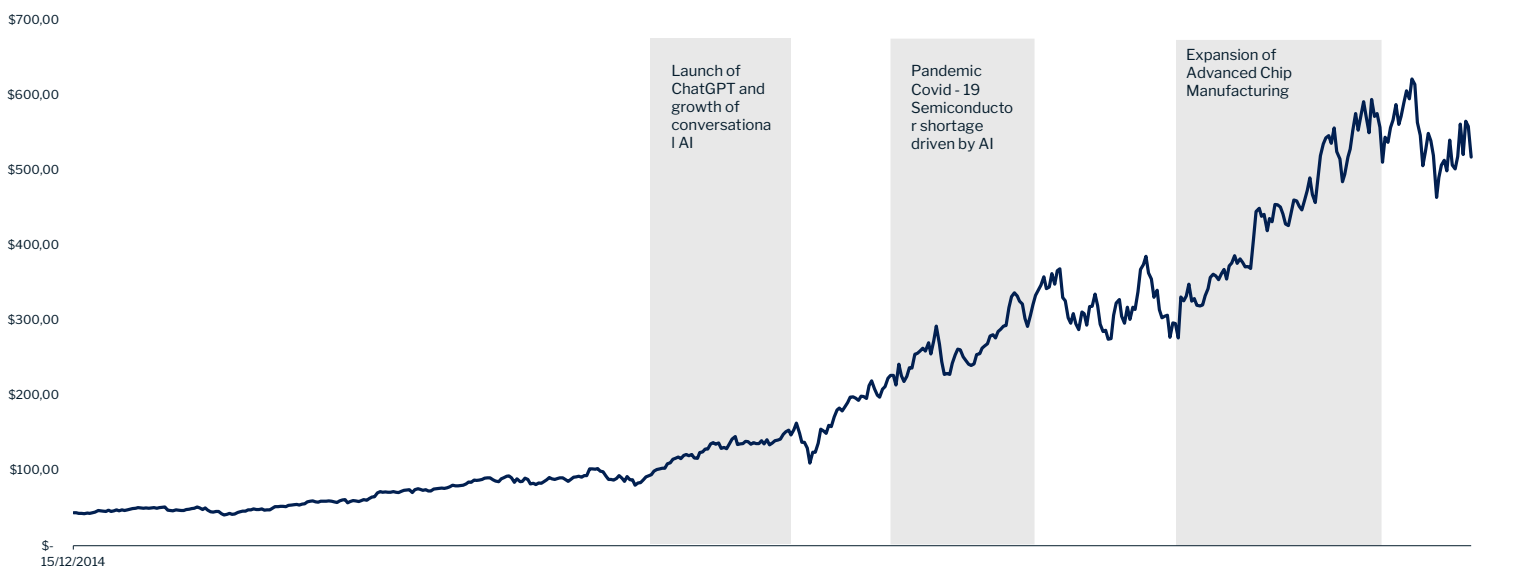
| | LTM | FY2025E | FY2026E | FY2027E | FY2028E | FY2029E |
|--------------|-------|---------|---------|---------|---------|---------|
| EV / Revenue | 12,3x | 11,1x | 9,8x | 8,6x | 7,4x | 6,3x |
| EV / Ebitda | 45,7x | 43,5x | 37,7x | 32,2x | 27,1x | 22,2x |
| EV / Ebit | 55,6x | 48,3x | 41,5x | 35,2x | 29,5x | 23,8x |

Equity Value Multiples

| | LTM | FY2025E | FY2026E | FY2027E | FY2028E | FY2029E |
|------------------|-------|---------|---------|---------|---------|---------|
| Price / Sales | 12,9x | 11,6x | 10,3x | 9,0x | 7,7x | 6,5x |
| Price / Earnings | 34,8x | 32,6x | 43,6x | 39,8x | 36,3x | 29,7x |
| Price / BV | 8,7x | 7,4x | 7,4x | 7,5x | 7,4x | 7,4x |
| Price / UFCF | 36,9x | 77,7x | 58,6x | 33,6x | 61,3x | 31,7x |

| Trading Comparables Company | Equity Value | Enterprise Value | Ev / Sales | | Ev / Ebitda | | Price / sales | | Price / Earnings | | Price / Book | | Price / FCF | |
|--------------------------------|--------------|------------------|------------|-------|-------------|-------|---------------|-------|------------------|-------|--------------|-------|-------------|--|
| | | | LTM | NTM | LTM | NTM | LTM | NTM | LTM | NTM | LTM | LTM | NTM | |
| Cadence Design Systems, Inc. | 79.457 | 79.341 | 18,2x | 15,2x | 54,7x | 33,0x | 18,3x | 15,3x | 76,3x | 42,9x | 17,4x | 88,4x | 52,4x | |
| Siemens Aktiengesellschaft | 153.669 | 199.706 | | | 16,0x | 13,1x | | | 18,8x | 16,8x | | 47,9x | 14,7x | |
| Ansys | 29.067 | 28.639 | 11,6x | | 34,3x | 10,8x | 11,8x | 24,8x | 51,3x | 32,0x | 5,0x | 40,5x | 36,3x | |
| Arm | 135.295 | 133.200 | | | | | | | | | 22,5x | | 67,1x | |
| Autodesk | 64.328 | 64.822 | 11,2x | 10,1x | 46,8x | 27,2x | 11,1x | 10,0x | 61,3x | 35,1x | 26,1x | 38,9x | 39,5x | |
| AMD | 218.917 | 216.611 | 8,9x | 7,0x | 48,4x | 29,9x | 9,0x | 7,1x | | 29,6x | | 93,3x | 33,3x | |

| Equity Value | 59.364 | 55.228 | 64.760 | 41.705 | 64.760 | 41.705 | 56.228 | 65.698 | 85.125 | 65.769 | 126.226 | 170.540 | 78.006 |
|---------------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|---------|---------|--------|
| Diluted shares | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 | 156 |
| Implied Share price | 381 | 354 | 415 | 267 | 415 | 267 | 361 | 421 | 546 | 422 | 809 | 1.094 | 500 |
| High | 738 | 686 | 601 | 388 | 601 | 388 | 717 | 1.079 | 1.107 | 664 | 1.524 | 1.836 | 870 |
| Low | 372 | 329 | 191 | 141 | 191 | 141 | 354 | 311 | 273 | 261 | 291 | 766 | 190 |



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