

CISCO SYSTEMS (CSCO)

October 21, 2022

Information Technology – Communication Equipment

Stock Rating

HOLD

Investment Thesis

We recommend a **HOLD** rating for Cisco Systems with a target price range of \$45-50 representing an 8%-20% upside. We are forecasting total revenues to increase by 4.6% and 4.3% in fiscal years 2023 and 2024, respectively. Net income is projected to fall 3.0% in fiscal year 2023 but rebound with 3.3% growth in 2024. The cause for this decline is primarily due to rising input costs which grew 8.0% in 2022 and are expected to grow by 4.3% and 65.8% in 2023 and 2024, respectively.

Drivers of Thesis

- Rising demand for video, visualizations, and data communications are expected to continue, leading to increased network traffic and bandwidth consumption.
- Increased demand for business network security protection and strong infrastructure growth are expected to increase industry revenue by 8.3% in 2023.

Risks to Thesis

- Increasing competition could saturate the communication equipment market which Cisco has a strong footing.
- Firms with more efficient cost structures are expected to drive down prices squeezing margins.
- Industry revenues have declined by 4.7% annually over the past five years primarily due to the shifting technological landscape brought on by the pandemic.

Target Price

\$45-50

Henry Fund DCF	\$49
Henry Fund DDM	\$31
Relative Multiple	\$76

Price Data

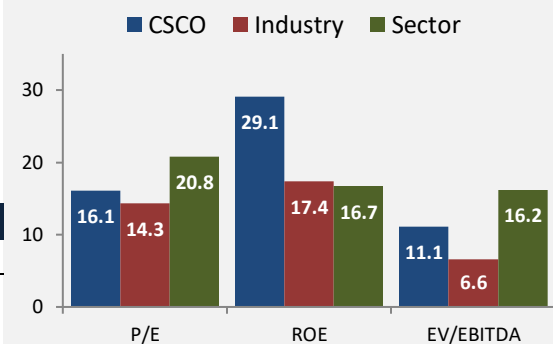
Current Price	\$42.80
52wk Range	\$40 – 64
Consensus 1yr Target	\$55

Key Statistics

Market Cap (B)	\$166.7
Shares Outstanding (M)	\$4,141
Institutional Ownership	74.0%
Beta	0.94
Dividend Yield	3.8%
Est. 5yr Growth	6.69%
Price/Earnings (TTM)	16.1
Price/Earnings (5yr avg)	19.4
Price/Sales (TTM)	3.7
Price/Book (mrq)	4.7

Profitability

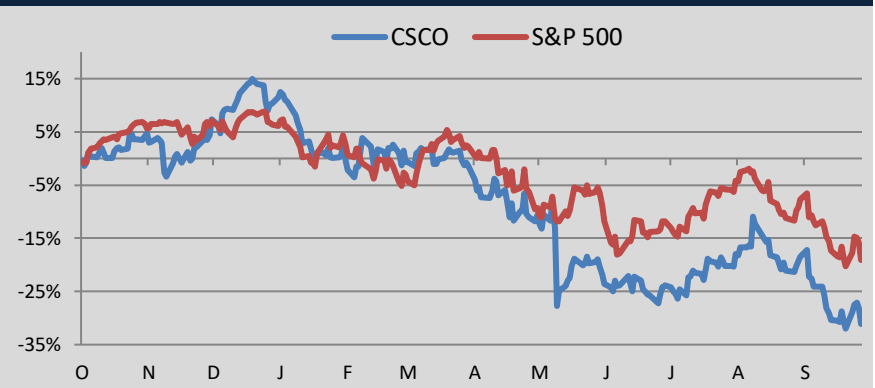
Operating Margin	27.4%
Profit Margin	22.9%
Return on Assets (TTM)	12.3%
Return on Equity (TTM)	29.1%



Earnings Estimates

Year	2020	2021	2022	2023E	2024E	2025E
EPS	\$2.64	\$2.50	\$2.82	\$3.05	\$3.33	\$3.52
HF est. growth	1.5%	-5.3%	12.8%	-4.2%	3.3%	4.0%

12 Month Performance



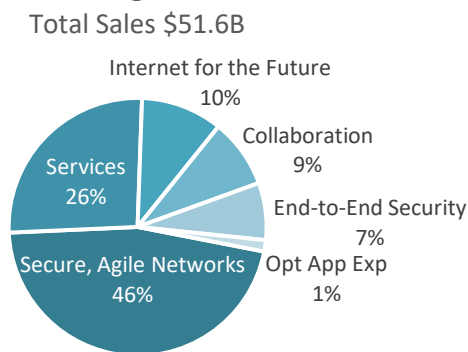
Company Description

Cisco Systems was founded in 1984 and is currently headquartered in San Jose, CA. The company engages in the design, manufacture, and sale of Internet Protocol-based networking products and services. Cisco reports two major operating segments, Product and Service. These segments consist of Switches, Routers, Wireless, Network Management Interfaces and Modules, Optical Networking, Access Points, Outdoor and Industrial Access Points, Next-Generation Firewalls, Advanced Malware Protection, VPN Security Clients, Email, and Web Security.

COMPANY DESCRIPTION

Cisco Systems was founded by Sandra Lerner and Leonard Bosack in 1984 and is currently headquartered in San Jose, CA. The company operates through the following business segment: Secure, Agile Networks, Internet for the Future, Collaboration, End-to-End Security, Optimized Application Experiences, and Services. These business segments consist of the following products: Switches, Routers, Wireless, Network Management Interfaces and Modules, Optical Networking, Access Points, Outdoor and Industrial Access Points, Next-Generation Firewalls, Advanced Malware Protection, VPN Security Clients, Email, and Web Security.

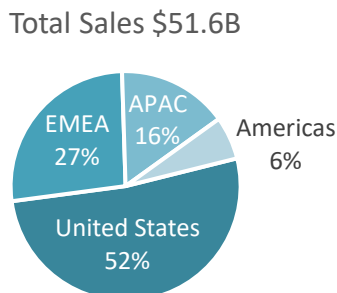
Business Segments 2022



Source: FactSet

Cisco operates worldwide and reports revenues from four geographic segments: United States; Europe Middle East & Africa (EMEA); Asia Pacific, Japan, & China; and Americas. Over half of its total revenues solely come from the United States segment. It also generates 73% of its revenues from Developed economies which is no surprise considering it produces advanced technology equipment primarily used in developed countries.

Revenue by Region 2022



Source: FactSet

Secure, Agile Networks

Cisco’s largest business segment is Secure, Agile Networks which generated \$23.8 billion in revenue and accounted for 46% of total revenues in FY22. We believe this segment will see stable growth of 4.2% over the next five years resulting in over \$29 billion in revenue by FY27. This segment consists of four main portfolios: Switching, Enterprise Routing, Wireless, and Compute. These technologies consist of both hardware and software offerings, including software licenses and SaaS, that help Cisco’s customers build networks, automate, orchestrate, integrate, and digitize data.

The **Switching** portfolio encompasses campus switching which provides the foundation for converged data, voice, video, and IoT services. This category contains the Catalyst 9000 series of switches which include hardware embedded with software and a software subscription. This subscription is called Cisco DNA and provides automation, analytics, and security features and can be centrally monitored, managed, and configured.

The **Enterprise Routing** portfolio interconnects public and private wireline and mobile networks, delivering highly secure and reliable connectivity to campus, data center and branch networks for Cisco’s large to small enterprise and commercial customers. Cisco’s routing solutions are designed to meet the scale, reliability, and security needs of its customers.

The **Wireless** portfolio provides indoor and outdoor wireless coverage designed for seamless roaming use of voice, video, and data applications. These products include wireless access points that are standalone, controller appliance-based, switch-converged, and Meraki cloud-managed offerings.

The **Compute** portfolio incorporates various technologies and solutions including the Cisco Unified Computing System, HyperFlex, our hyper-converged offering, and software management capabilities, which combine computing, networking, and storage infrastructure management and virtualization to deliver agility, simplicity, and scale.

Services

The Services business segment includes a broad range of service and support options. Cisco offers support and maintenance services that help customers ensure their

products operate efficiently, remain available, and benefit from the most up-to-date system and application software. These services help customers protect their network investments, manage risk, and minimize downtime for systems running mission-critical applications. The Services segment generated \$13.5 billion in revenue in FY22 accounting for 26% of total revenues. We expect this segment to remain consistent and forecast a stable growth rate of 1% over the next 10 years.

Internet for the Future

This is a new business segment that consists of routed optical networking, 5G, silicon, and optics solutions. Cisco is focused on transforming connectivity to the Internet and the cloud environment by efficiently meeting the growing demand for low-latency and higher speeds. Its routed optical networking systems, based on its Silicon One and pluggable optic solutions, allow Cisco to transform the economics of building and operating networks for its service provider customers. Connection speeds continue to increase, and optics are becoming increasingly important. Cisco believes silicon and optics are foundational technologies for the continued buildout of the internet. With revenues of \$5.3 billion in FY22, this segment accounted for just over 10% of total revenues. We believe with the continued buildout of the internet and the rapid adoption of 5G, we believe this will be Cisco's largest source of organic growth. We forecast the Internet for the Future segment to grow an average of 11% per year over the next five years pushing revenues close to \$9 billion by FY27.

Collaboration

Cisco's Collaboration product category consists of Meetings, Collaboration Devices, Calling, Contact Center, and Communication Platform as a Service (CPaaS) offerings. The offerings within the Collaboration portfolio consist of software offerings, including perpetual licenses and subscription arrangements, as well as hardware. The Collaboration strategy is to power hybrid work by reimagining employee and customer experiences to be more inclusive and engaging by providing technology that enables distributed teams to collaborate effortlessly. Cisco offers end-to-end collaboration solutions that can be delivered from the cloud, on-premise, or within hybrid cloud environments allowing customers to transition their collaboration solutions from on-premise to the cloud. Collaboration generated \$4.5 billion in revenue in FY22,

and we forecast this segment to decline by 4.2% per year on average over the next five years. We believe the work-from-home trend will continue to negatively impact this segment. Many technological office products are classified in this segment, and we project in-office work to rebound but not to its pre-pandemic levels.

End-to-End Security

The End-to-End Security product category consists of Network Security, Cloud Security, Security Endpoints, Unified Threat Management, and Zero Trust offerings. Security continues to be a leading priority for our customers, regardless of size or industry. As security becomes an even larger priority for firms, Cisco continues to invest in resources across its security portfolio. It is primarily focused on expanding its cloud-based offerings, AI-driven threat detection, and end-to-end security architectures. Cisco is particularly expecting strong growth from its Duo and Umbrella security offerings. The security segment has seen average yearly growth over the last five years of 11% generating \$3.7 billion in revenue in FY22. We are forecasting this growth to slow to an average of 6% per year over the next five years.

Optimized Application Experiences

The Optimized Application Experiences (OAE) product category consist of full-stack observability and cloud-native platform offerings. Cisco's full-stack observability offerings are designed to bring together and provide end-to-end visibility of its customer's environments across applications, networks, multi-cloud infrastructures, and the Internet, to help deliver full-stack observability for modern environments and drive relevant real-time insights. Cisco's Intersight platform offers a foundational container platform and infrastructure as code capabilities to simplify deployment and provisioning for its customers. The OAE product category is the new and smallest segment generating only \$729 million in FY22 accounting for 1.4% of total revenues. We see strong growth in the OAE segment with average yearly growth of 9% over the next five years.

Debt Maturity Analysis

Cisco operates with very little debt reporting only \$10.5 billion in total debt. This results in a total debt-to-equity ratio of 26.6% for FY22, down from 30.8% in FY21. It has a current ratio of 1.4x meaning it has more current assets than current liabilities. The company also boasts a cash

ratio of 0.8 meaning it can almost pay down all its current liabilities with cash & equivalents. Given these strong liquidity ratios, we do not anticipate Cisco will need to refinance any debt.

Five-Year Debt Maturity Schedule

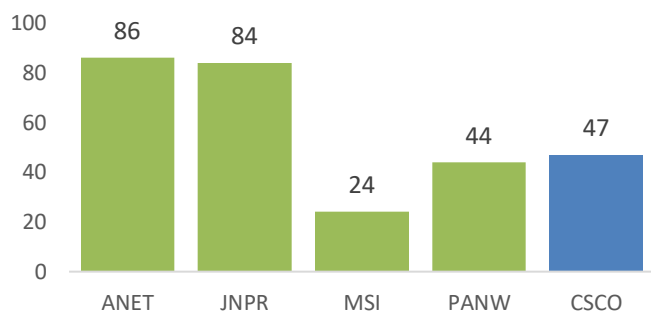
Fiscal Year	Payment (\$mil)
2023	\$500
2024	1,750
2025	500
2026	750
2027	1,500
Thereafter	4,000
Total	\$9,000

Source: Cisco 10-k

ESG Analysis

In September of 2021, Cisco set a new goal to become net zero across Scope 1, 2, and 3 emissions by 2040. It plans to achieve this goal by accelerating its use of renewable energy, investing in carbon removal solutions, and embracing a hybrid work model. In FY21 Cisco met its goal to source 85% of its total global electricity from renewable sources by fiscal 2022 one year early. It also met its goal to reduce Scope 1 and 2 greenhouse gas emissions by 60% by fiscal 2022 one year early. Cisco is committed to improving local communities. In FY21, it donated \$477 million to community programs. It is estimated that between FY16-FY21 over 716 million people have been positively impacted through Cisco's social grants and signature programs. In fiscal 2021 three million students participated in Cisco Networking Academy bringing the total since its inception in 1997 to 15 million students. Compared to its peers, Cisco has a relatively low ESG score of 47. The higher the overall ESG score, the healthier and more sustainable the company.¹

Overall ESG Score



Source: FactSet

RECENT DEVELOPMENTS

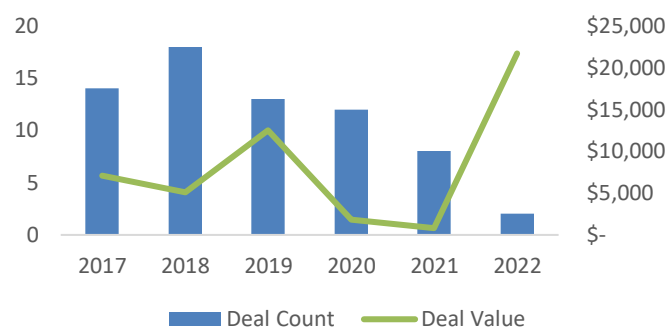
Recent Earnings Announcement

Cisco reported FY22 earnings on August 17 since they have a July 31st fiscal year-end. It reported \$13.1 billion in revenue beating analysts' expectations of \$12.8 billion. It also beat analyst expectations on EPS reporting 83 cents per share, adjusted, vs 82 cents expected. Net income declined 6% to \$2.8 billion and gross margin narrowed to 63.3% down from 65.3% in the previous quarter and lower than analysts' prediction of 64.7%. Cisco's number generally topped street estimates and the stock rose 4.5% in extended trading. Even with the positive earnings report, the company still appears to be struggling to grow as the world shifts to cloud-based applications and subscription services rather than physical devices. Cisco did give positive guidance for FY23 citing Q1 FY23 revenues to grow 2% to 4% and FY23 revenues to grow 4% to 6%.^{2,6}

Mergers & Acquisitions

Cisco has an active M&A history averaging 11 deals worth over \$8.2 billion in transaction value per year over the last 5 years. In February of 2022, the Wall Street Journal reported that Cisco had offered to purchase software maker Splunk for more than \$21 billion. As of October 2022, the two companies are not in talks to complete the acquisition. Cisco's CEO Chuck Robbins stated the company is "disciplined and continue to focus on organic and inorganic opportunities."^{4,7}

M&A Activity



Source: FactSet

MARKETS AND COMPETITION

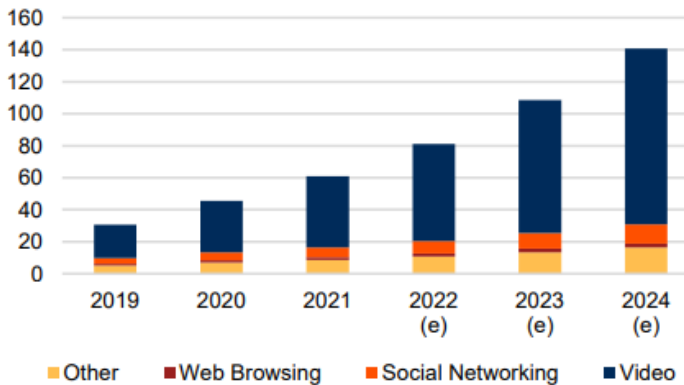
Industry Growth

The major points of growth for the Communication Equipment industry include the rapid adoption and market

penetration of internet video and social media content. The continued expansion of smartphones and the widespread mitigation toward a more virtualized network environment are also key sources of growth for the industry. Mobile data traffic grew by 33% in 2021 reaching 64.8 exabytes per month. This metric is expected to grow to 81.1 exabytes per month by the end of 2022.

Global Mobile Data Traffic Forecast

(Exabytes per month)



Source: Net Advantage

Imports

Imports have been a major change within the industry over the past five years, with China accounting for over 50.0% of industry imports in 2022. Production costs in other countries are considerably lower than they are in the United States. Many manufacturers outsource production to low-cost countries, resulting in the number of establishments and employees declining. Moving production abroad results in less expensive products for domestic consumers. Domestic telecommunication companies mainly engage in research and development, product design and high-end product manufacturing, and reexporting finished networking equipment.

Supply Chain Constraints

Cisco does not own or operate the bulk of its manufacturing facilities making them reliant on its extended supply chain. Supply chain issues include financial problems of contract manufacturers or component suppliers and a shortage of adequate component supply or manufacturing capacity. These added supply chain constraints are creating extra costs or causing delays in its ability to fulfill orders and are harming its business and operating results. Failure to estimate customer demand properly may result in excess or

obsolete component supply, which could adversely affect Cisco's gross margins.

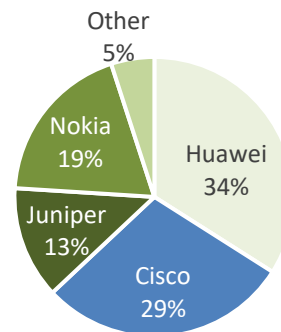
Research & Development

The Communications Equipment industry (excluding Cisco) reported \$5 billion in R&D expenditures in 2021 and Cisco reported \$6.8 billion in R&D expenditures for FY22. We are forecasting a 2% drop in R&D expenses for Cisco in FY23 as the company remains cautious with spending on new projects amid supply shortages and global slowdowns. We expect Cisco's R&R spending to focus on accelerating the transition of the company's product portfolio to be delivered as a service.

Competitive Advantage

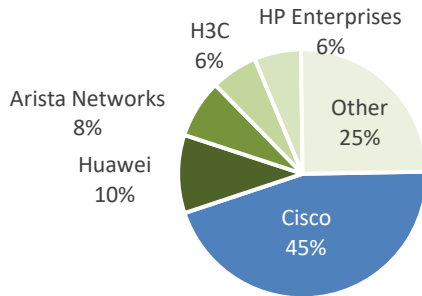
Cisco is synonymous with routers, high-speed networking, and switching equipment, and carries the title of the world's largest supplier of high-performance computer networking systems. Cisco's products are mission-critical for network performance, security, and stability. Cisco is proliferating software, analytics, wireless, and security offerings to satisfy nascent trends, and we see Cisco as the only one-stop-shop networking vendor. Cisco controls a 29% market share of the Routing Equipment category and a 45% market share of the Ethernet Switch category.

Routing Equipment Market Share, 2021



Source: Net Advantage

Ethernet Switch Market Share, 2021



Source: Net Advantage

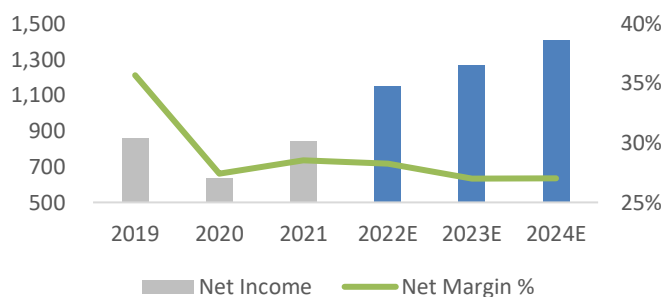
PEER COMPARISON

Arista Networks (ANET)

Arista Networks was founded in 2004 and is headquartered in Santa Clara, CA. It engages in the development, marketing, and sale of cloud networking solutions. Its cloud networking solutions consist of Extensible Operating System (EOS), a set of network applications, Ethernet switching, and routing platforms. Arista competes primarily in the data center switching market for 10 Gigabit Ethernet and above, excluding blade switches. We added advanced routing capabilities to our R-Series switches, which in addition to switching address the Data Center Interconnect (DCI) market, cloud-grade routing, next-generation network edge, and parts of the wide-area networking routing market.¹

In FY21 Arista saw revenues increase 27% to \$2.9B. This resulted in a net income increase of 32% totaling \$841MM. Street analysts are projecting a 38% increase in revenues for FY22 and a 37% increase in net income. The primary driver for this growth is the continued trend of companies shifting workloads to the cloud and increasing spending on next-generation data centers.¹

ANET Net Income (\$MM)



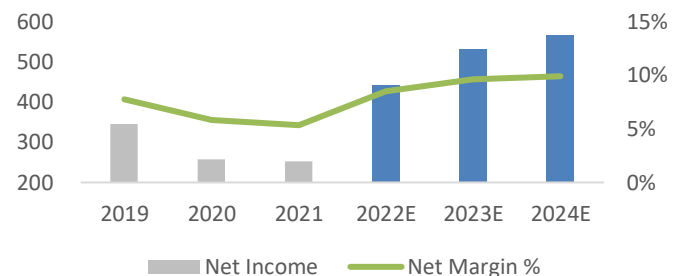
Source: FactSet

Juniper Networks (JNPR)

Juniper Networks designs, develops, and sells products and services for high-performance networks to enable customers to build scalable, reliable, secure, and cost-effective networks for their businesses, while achieving agility and improved operating efficiency through automation. Its high-performance network and service offerings include routing, switching, Wi-Fi, network security, artificial intelligence (AI) or AI-enabled enterprise networking operations (AIOps), and software-defined networking (SDN) technologies.¹

Juniper has seen net income decline over the last three years by an average rate of 14%. Analysts are expecting strong net income growth of 75% and 20% in FY22 and FY23, respectively. It has seen stable revenue growth averaging 3% over the last three years. Analysts also expect revenues to grow in the coming years at an average rate of 7%. The primary drivers of growth rely on secure IP infrastructure as well as customers that depend on the continued growth of IP services to deploy Juniper's products in their networks and IP infrastructures.¹

JNPR Net Income (\$MM)



Source: FactSet

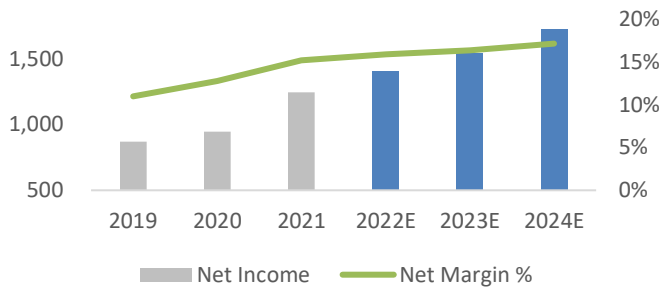
Motorola Solutions (MSI)

Motorola Solutions is a global leader in public safety and enterprise security. Its technologies in Land Mobile Radio (LMR) communications, Video Security and Access Control, and Command Center Software, bolstered by managed and support services, create an integrated technology ecosystem to help make communities safer and businesses stay productive and secure. It currently serves over 100,000 public safety and commercial customers in over 100 countries, providing purpose-built solutions designed for their unique needs.¹

Over the last two years, Motorola has seen healthy net income growth averaging 20% per year. The street expects

this growth to continue but at a lower rate of 12% per year over the next three years. Motorola has also seen a steady increase in its net income margin and analysts expect this trend to continue reaching 17% net margin by 2024.¹

MSI Net Income (\$MM)



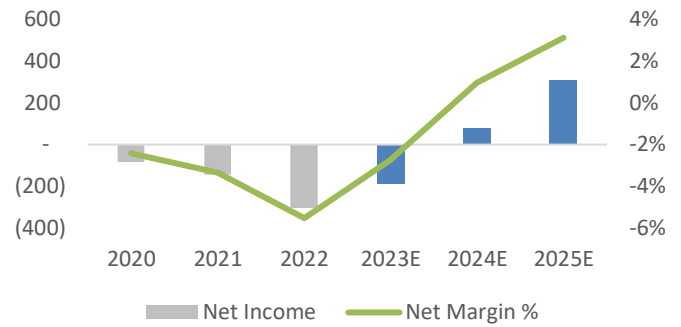
Source: FactSet

Palo Alto Networks (PANW)

Palo Alto Networks is a leading provider of zero-trust solutions, starting with next-generation zero-trust network access to secure today's remote hybrid workforces and extending to securing all users, applications, and infrastructure with zero-trust principles. Its security solutions are designed to reduce customers' total cost of ownership by improving operational efficiency and eliminating the need for siloed point products.¹

Palo Alto Networks has seen negative net income in recent years losing 304 million in FY22. The street is forecasting a loss in FY23 followed by positive net income in FY24 and FY25. Palo Alto has seen robust revenue growth averaging a 27% increase over the last two years. The street expects this growth to continue averaging 18% per year for the next three years. Palo Alto cited increased salary expenses as a key reason for the declining net margin. In FY22 Palo Alto hired over 2,000 new employees to help with increased demand. This increased the total number of employees by 20%.¹

PANW Net Income (\$MM)



Source: FactSet

Price Returns

Over the trailing twelve months, Cisco has performed the worst amongst its peers. It is currently down 24% slightly off its low of negative 30% early in October. Juniper, Palo Alto, and Motorola are all relatively flat on the year returning between 1% and -9%. Arista is the positive outlier returning nearly 12% over the past year. For perspective, the S&P 500 and NASDAQ are down 18% and 29%, respectively.¹⁵

Share Price Return TTM



Source: FactSet

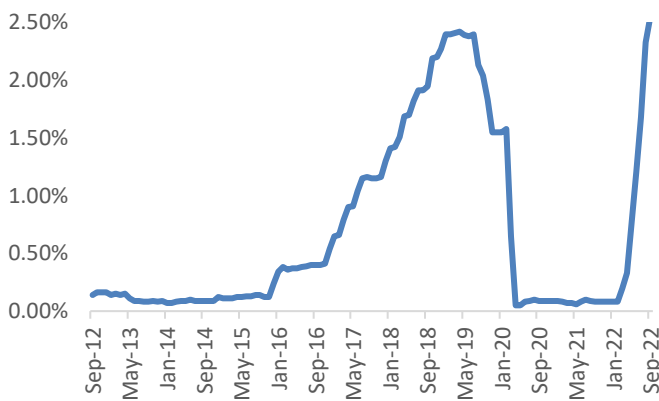
ECONOMIC OUTLOOK

Interest Rates

Interest rate volatility continues to disrupt the market as the Federal Reserve has been increasing rates aggressively to combat high inflation. Post the Great Recession in 2008-09, the Fed Funds Rate remained near zero until 2016 when the Fed started slowly hiking rates. In 2019 the Fed

then began decreasing rates due to lower-than-expected GDP which was partially caused by the trade war with China. Then in early 2020, the Federal Reserve slashed rates to near zero due to the COVID-19 pandemic. As the economy ground to a halt, the Federal Reserve wanted to stimulate spending making it cheaper to borrow. Now as inflation runs rampant, the fed is aggressively increasing rates. So far in 2022 alone the fed has increased rates 225 basis points to a target range of 225-250. Three more rate hikes are expected in 2022 totaling 175 basis points pushing the target range to 425-450 by December. We see the fed being aggressive in the remaining months of 2022, but we are forecasting limited rate increases in 2023.^{8,9,10}

Federal Funds Rate

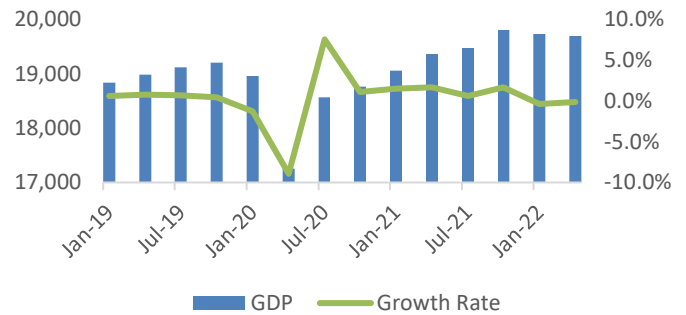


Source: FRED

GDP

The Gross Domestic Product of the United States had seen steady growth since the Great Recession until 2020. In 2020, the US had back-to-back quarters of negative GDP growth with GDP falling 1.3% and 8.9% in Q1 and Q2, respectively. Two consecutive quarters of negative GDP growth is the technical definition of a recession. The negative GDP growth only lasted two quarters and rebounded strongly in 2021. Then Q1 and Q2 saw small declines of .4% and .1% which technically means we are in another recession. We believe the US will have slightly positive GDP growth in Q3 as the economy still battles high inflation, supply chain constraints, and geopolitical issues.¹¹

Gross Domestic Product (\$B)

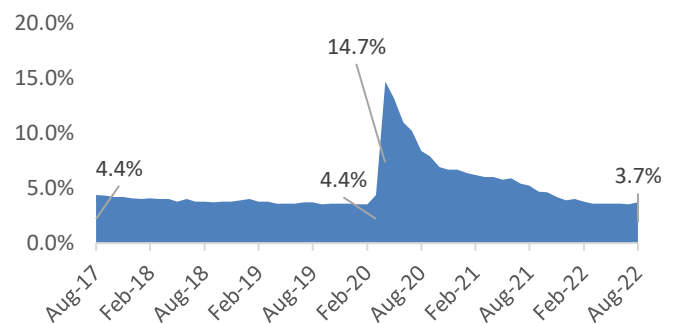


Source: FRED

Unemployment

The United States unemployment rate fell steadily following its highs during the Great Recession in 2008-09. In 2019 it reached a low of 3.5%. Then as COVID hit the world in the spring of 2020, the unemployment rate reached a record 14.7% as millions of workers were either laid-off or furloughed. Since the spring of 2020 unemployment has fallen consistently with a small increase in the most report to 3.7% from 3.5%. The labor market is one of the primary reasons we aren't already in a recession. Companies are beginning however to reduce hiring especially in the technology sector. As the federal reserve continues to hike interest rates, we expect to see more companies limiting hiring resulting in higher unemployment.¹¹

Unemployment Rate



Source: FRED

Ukraine/Russia

In March of 2022, Cisco announced it would stop business operations in Russia and Belarus. In June of 2022, Cisco began winding down and exiting business positions. In FY21 revenue from Russia, Belarus, and Ukraine accounted for 1% of total revenues and 0.1% of total assets. The negative impact on total revenue was about \$200 million

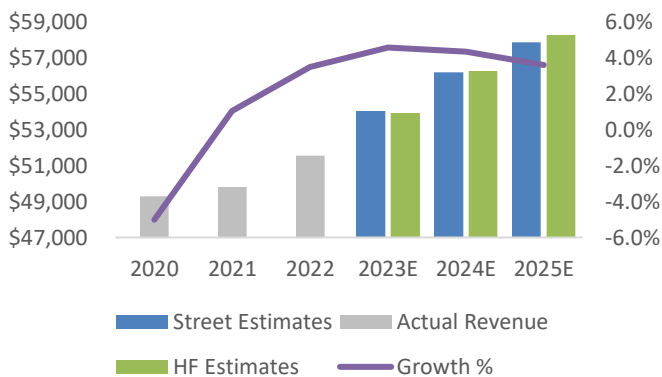
for FY22. As a result, Cisco recognized non-recurring charges of \$91 million in cost of sales and operating expenses for FY22.²

VALUATION

Revenue Projections

Cisco has seen slow revenue growth over the last two years averaging only 2.3% growth. In 2022 it saw growth of 3.5% increasing total revenues to \$51.6B. We forecast that stable low growth will continue with an average growth rate of 4.2% over the next three years. Cisco's new business segments, Optimized Application Experiences, and Internet for the Future will be strong areas of growth going forward. In 2023 we forecast Optimized Application Experiences and Internet for the Future to grow by 11% and 15%, respectively. The new Collaboration segment is the only segment we project to have declining revenues due to slowing demand for calling devices due to the increase in remote work.¹

Revenue Projections (\$MM)

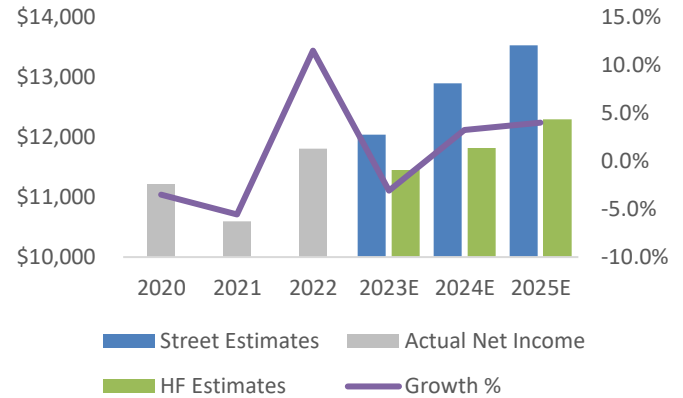


Source: CSCO 10-k & FactSet

Net Income Projections

In 2022 Cisco saw net income rise 11.5% to \$11.8B. This increase comes from several years of declining net income. Going forward we project net income to decline 3.0% in 2023 due to rising input costs then followed by a 3.3% increase as higher input costs can be justified with higher sales prices. By 2025 we expect net income to reach \$15.5B driven by new business segments and cost efficiencies.¹

Net Income Projections (\$MM)

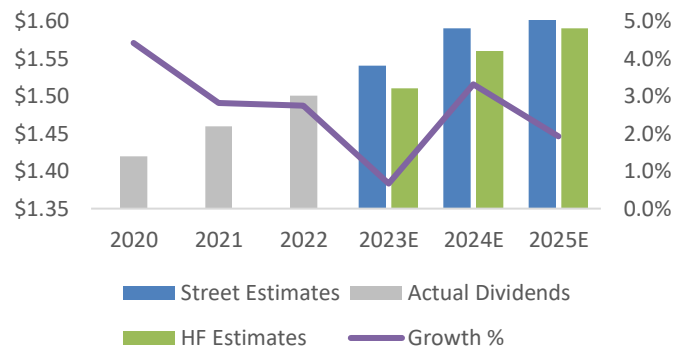


Source: CSCO 10-k & FactSet

Dividend Projections

Cisco currently yields a 3.8% dividend and has a strong history of increasing its dividend payments each year. It has maintained a dividend payout ratio greater than 50% for the last several years and we expect this trend to continue. Over the last three years, Cisco has increased its dividend payments by an average of 3.3% to \$1.50 per share in 2022. We expect this growth to continue with an average growth rate over the next three years of 2.0% reaching a dividend of \$1.59 per share by 2025.¹

Dividend Projections

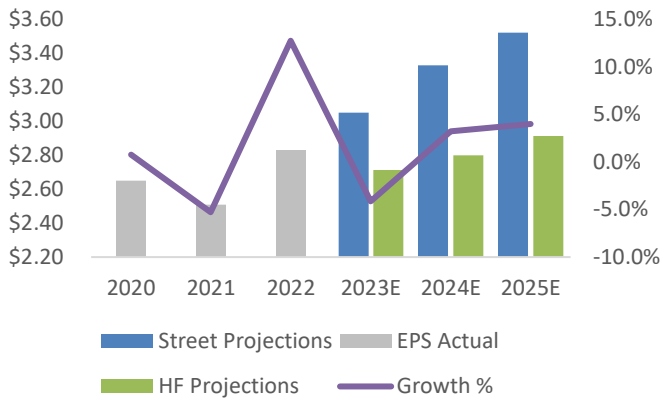


Source: CSCO 10-k & FactSet

EPS Projections

Over the last three years, Cisco has seen its EPS grow at an average rate of 2.7% to \$2.83 in 2022. We forecast EPS to grow at an average rate of 1.0% over the next three years. Our estimates are about 15% below consensus due to our lower net income projections. We expect higher input costs, market saturation, and decreased demand for certain products to result in moderate growth.¹

EPS Projections



Source: CSCO 10-k & FactSet

Discounted Cash Flow/Economic Profit

We valued Cisco using three different models, the first being the discounted cash flows model (DCF). This model yielded a projected share price of **\$49** which represents a premium of 18% above its current share price of \$41.71. The DCF model was created using a CV growth of NOPLAT of 1.14%, a weighted average cost of capital (WACC) of 8.26%, and a cost of equity of 8.56%. We projected cash flows out ten years to a terminal year of 2032.¹

Dividend Discount Model

The dividend discount model produced a projected price of **\$31** representing a 26% discount from the current price of \$41.71. The primary reason for the low price is due to the low CV growth of EPS rate of 1.27%. Even though we expect EPS to grow over the coming years we tapered down our terminal year's growth rate causing an undervalued stock price. This model is a good representation of what could happen to the stock price if the EPS growth does slow.

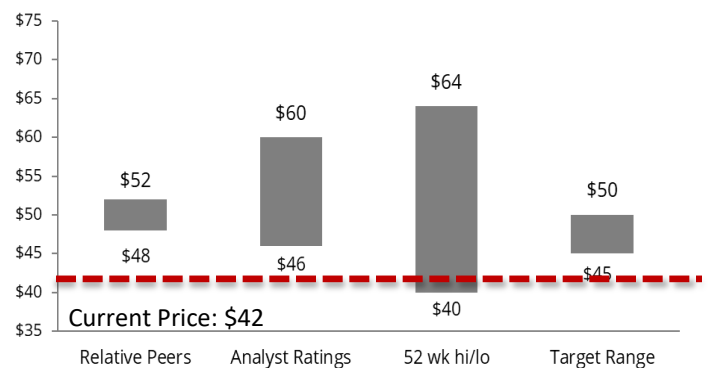
Relative Peers

For our relative peers' model, we selected four competitors from the communications equipment sector. Our competitors include Arista Networks, Juniper Networks, Motorola Solutions, and Palo Alto Networks. Our model returned a projected share price range of **\$53 to \$48**, representing a 16%-26% upside. When calculating the average P/E for the competitors we excluded Palo Alto Networks due to their lofty P/E of 55 which is well above the average of the other three competitors at 19. With a current P/E of 15, Cisco is undervalued and poised for growth.

Valuation Summary

We are recommending a price target range of \$45-\$50 representing an upside of 8%-20%. To calculate this range, we used a weighted average of all three models. We used a 40% weight on the DCF and relative peer models and a 20% weight on the dividend discount model. We decided to weigh the DDM model slightly lower than the other two models since it only considers one factor. Also, most of the companies in this sector do not pay dividends so comparing dividend payments aren't as useful as they are in other industries. Our target range falls in the middle of the current 52-week high/low range of \$64-\$40 and the street analyst's range of \$46-\$60.

Valuation Summary



Source: FactSet

KEYS TO MONITOR

Catalysts for Growth

- Rising demand for video, visualizations, and data communications are expected to continue, leading to increased network traffic and bandwidth consumption.
- Increased demand for business network security protection and strong infrastructure growth are expected to increase industry revenue by 8.3% in 2023.

Risks to Thesis

- Increasing competition could saturate the communication equipment market which Cisco has a strong footing.

- Firms with more efficient cost structures are expected to drive down prices squeezing margins.
- Industry revenues have declined by 4.7% annually over the past five years primarily due to the shifting technological landscape brought on by the pandemic.

Summary

We recommend a **HOLD** rating on Cisco Systems with a target price range of \$45-\$50 representing an 8%-20% upside from the current price of \$42. Cisco has a strong market share and offers competitive products in an industry that is projected to grow in the coming years. Cisco's main threat is increased market saturation, particularly from foreign firms with more efficient cost structures. Continued supply chain struggles are also a point of concern for Cisco since they outsource most of their manufacturing. We do expect the Communication Equipment industry to grow over the next five years and Cisco will surely remain a major player in this industry.

represent an offer or solicitation to buy or sell any of the aforementioned securities. Unless otherwise noted, facts and figures included in this report are from publicly available sources. This report is not a complete compilation of data, and its accuracy is not guaranteed. From time to time, the University of Iowa, its faculty, staff, students, or the Henry Fund may hold an investment position in the companies mentioned in this report.

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Cisco

Revenue Decomposition

All figures in millions of U.S. Dollar

Fiscal Years Ending Jul. 31	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Revenues											
Secure, Agile Networks	23,829	25,020	26,271	27,322	28,415	29,268	30,146	31,050	31,671	32,305	32,951
growth %		5.0%	5.0%	4.0%	4.0%	3.0%	3.0%	3.0%	2.0%	2.0%	2.0%
Optimized Application Experiences	729	809	890	970	1,048	1,121	1,188	1,248	1,298	1,337	1,377
growth %		11.0%	10.0%	9.0%	8.0%	7.0%	6.0%	5.0%	4.0%	3.0%	3.0%
Internet for the Future	5,278	6,070	6,859	7,613	8,298	8,879	9,323	9,696	9,987	10,287	10,595
growth %		15.0%	13.0%	11.0%	9.0%	7.0%	5.0%	4.0%	3.0%	3.0%	3.0%
Collaboration	4,472	4,248	4,036	3,875	3,720	3,608	3,500	3,430	3,361	3,328	3,328
growth %		-5.0%	-5.0%	-4.0%	-4.0%	-3.0%	-3.0%	-2.0%	-2.0%	-1.0%	0.0%
End-to-End Security	3,699	3,995	4,275	4,531	4,758	4,948	5,096	5,249	5,407	5,569	5,736
growth %		9.4%	8.0%	7.0%	6.0%	5.0%	4.0%	3.0%	3.0%	3.0%	3.0%
Services	13,539	13,764	13,917	13,957	14,099	14,213	14,313	14,434	14,548	14,661	14,778
growth %		-1.9%	1.7%	1.1%	0.3%	1.0%	0.8%	0.8%	0.8%	0.8%	0.8%
Other	11	4	2	1	0	0	0	0	0	0	0
growth %		-42.1%	-60.0%	-62.7%	-54.9%	-59.2%	-58.9%	-57.7%	-58.6%	-58.4%	-58.4%
Total	51,557	53,911	56,250	58,269	60,338	62,037	63,567	65,107	66,271	67,485	68,765
growth %		3.5%	4.6%	4.3%	3.6%	3.6%	2.8%	2.5%	2.4%	1.8%	1.9%

Percentage of Total (%)

Secure, Agile Networks	46.2%	46.4%	46.7%	46.9%	47.1%	47.2%	47.4%	47.7%	47.8%	47.9%	47.9%
Optimized Application Experiences	1.4%	1.5%	1.6%	1.7%	1.7%	1.8%	1.9%	1.9%	2.0%	2.0%	2.0%
Internet for the Future	10.2%	11.3%	12.2%	13.1%	13.8%	14.3%	14.7%	14.9%	15.1%	15.2%	15.4%
Collaboration	8.7%	7.9%	7.2%	6.6%	6.2%	5.8%	5.5%	5.3%	5.1%	4.9%	4.8%
End-to-End Security	7.2%	7.4%	7.6%	7.8%	7.9%	8.0%	8.0%	8.1%	8.2%	8.3%	8.3%
Services	26.3%	25.5%	24.7%	24.0%	23.4%	22.9%	22.5%	22.2%	22.0%	21.7%	21.5%
Total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Geographic

United States	26,700	27,919	29,130	30,176	31,248	32,128	32,920	33,717	34,320	34,949	35,611
growth %		2.3%	4.6%	4.3%	3.6%	3.6%	2.8%	2.5%	2.4%	1.8%	1.9%
EMEA	13,715	14,341	14,963	15,501	16,051	16,503	16,910	17,320	17,629	17,952	18,293
growth %		5.9%	4.6%	4.3%	3.6%	3.6%	2.8%	2.5%	2.4%	1.8%	1.9%
Asia Pacific, Japan, & China	8,027	8,393	8,758	9,072	9,394	9,659	9,897	10,137	10,318	10,507	10,706
growth %		4.2%	4.6%	4.3%	3.6%	3.6%	2.8%	2.5%	2.4%	1.8%	1.9%
Americas	3,114	3,256	3,397	3,519	3,644	3,747	3,839	3,932	4,003	4,076	4,153
growth %		1.7%	4.6%	4.3%	3.6%	3.6%	2.8%	2.5%	2.4%	1.8%	1.9%
Total	51,556	53,910	56,249	58,268	60,337	62,036	63,566	65,106	66,270	67,484	68,763
growth %		3.5%	4.6%	4.3%	3.6%	3.6%	2.8%	2.5%	2.4%	1.8%	1.9%

Cisco													
<i>Income Statement</i>													
All figures in millions of U.S. Dollar													
Fiscal Years Ending Jul. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
REVENUE:													
Product	35,978	36,014	36,014	40,147	42,333	44,312	46,239	47,824	49,254	50,673	51,724	52,824	53,986
Service	13,323	13,804	13,804	13,764	13,917	13,957	14,099	14,213	14,313	14,434	14,548	14,661	14,778
Total revenue	49,301	49,818	51,557	53,911	56,250	58,269	60,338	62,037	63,567	65,107	66,271	67,485	68,765
COST OF SALES:				4.6%	4.3%								
Product	(13,199)	(13,300)	(14,814)	(14,955)	(15,848)	(16,665)	(16,846)	(17,293)	(17,600)	(17,790)	(17,931)	(18,050)	(18,165)
Service	(4,419)	(4,624)	(4,495)	(4,965)	(5,156)	(5,336)	(5,515)	(5,704)	(5,891)	(6,082)	(6,276)	(6,472)	(6,671)
Total cost of sales	(15,810)	(16,062)	(17,352)	(18,106)	(19,158)	(20,152)	(20,548)	(21,184)	(21,691)	(22,087)	(22,433)	(22,758)	(23,081)
GROSS MARGIN	31,683	31,894	34,205	35,805	37,091	38,117	39,790	40,853	41,876	43,021	43,839	44,727	45,684
OPERATING EXPENSES:		1.6%	8.0%	4.3%	5.8%								
Research and development	(6,347)	(6,549)	(6,774)	(6,631)	(6,842)	(6,971)	(6,996)	(7,121)	(7,188)	(7,228)	(7,312)	(7,344)	(7,382)
Sales and marketing	(9,169)	(9,259)	(9,085)	(9,849)	(10,214)	(10,498)	(10,950)	(11,233)	(11,499)	(11,794)	(11,998)	(12,217)	(12,452)
General and administrative	(1,925)	(2,152)	(2,101)	(2,210)	(2,343)	(2,397)	(2,490)	(2,565)	(2,622)	(2,688)	(2,737)	(2,785)	(2,839)
Amortization of purchased intangible assets	(141)	(215)	(313)	(341)	(388)	(478)	(615)	(763)	(914)	(1,113)	(1,375)	(1,699)	(2,082)
Restructuring and other charges	(481)	(886)	(6)	(497)	(509)	(357)	(490)	(482)	(467)	(504)	(505)	(511)	(526)
Depreciation	(1,008)	(931)	(880)	(811)	(755)	(704)	(654)	(608)	(566)	(526)	(489)	(455)	(423)
Amortization of intangibles	(800)	(931)	(1,077)	(1,003)	(1,091)	(1,144)	(1,159)	(1,204)	(1,234)	(1,259)	(1,285)	(1,308)	(1,332)
Total operating expenses	(18,063)	(19,061)	(20,236)	(21,343)	(22,141)	(22,548)	(23,353)	(23,976)	(24,490)	(25,113)	(25,700)	(26,319)	(27,035)
OPERATING INCOME:	15,428	14,695	13,969	14,462	14,950	15,568	16,437	16,877	17,386	17,907	18,138	18,408	18,649
Interest income	920	618	476	476	476	476	476	476	476	476	476	476	476
Interest expense	(585)	(434)	(360)	(360)	(360)	(360)	(360)	(360)	(360)	(360)	(360)	(360)	(360)
Other income / loss, net	15	245	392	392	392	392	392	392	392	392	392	392	392
Interest and other income / loss, net	350	429	508	508	508	508	508	508	508	508	508	508	508
INCOME BEFORE PROVISION FOR INCOME TAXES	13,970	13,262	14,477	14,970	15,458	16,076	16,945	17,385	17,894	18,415	18,646	18,916	19,157
Provision for income taxes	(2,756)	(2,671)	(2,665)	(3,518)	(3,633)	(3,778)	(3,982)	(4,085)	(4,205)	(4,328)	(4,382)	(4,445)	(4,502)
NET INCOME	11,214	10,591	11,812	11,452	11,825	12,298	12,963	13,299	13,689	14,088	14,264	14,470	14,655
	-3.5%	-5.6%	11.5%	-3.0%	3.3%								
Basic EPS	2.65	2.51	2.83	2.71	2.80	2.91	3.07	3.15	3.24	3.34	3.38	3.43	3.47
Basic weighted average shares	4,236	4,222	4,222	4,222	4,222	4,222	4,222	4,222	4,222	4,222	4,222	4,222	4,222
Dividends per share	1.42	1.46	1.50	1.51	1.56	1.59	1.70	1.74	1.79	1.84	1.86	1.89	1.91
Payout Ratio	53.6%	58.2%	53.0%	55.6%	55.6%	54.7%	55.3%	55.2%	55.1%	55.2%	55.2%	55.1%	55.2%
Total Dividends	6,015	6,164	6,333	6,366	6,573	6,730	7,168	7,342	7,539	7,775	7,868	7,979	8,084

Cisco

Balance Sheet

All figures in millions of U.S. Dollar.

Fiscal Years Ending Jul. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Assets													
Current assets:													
Cash and cash equivalents	11,809	9,175	7,079	15,351	21,230	28,097	35,378	42,270	49,489	56,848	64,067	71,416	78,822
Investments	17,610	15,343	12,188	12,676	13,183	13,710	14,258	14,829	15,422	16,039	16,680	17,347	18,041
Accounts receivable, net of allowance	5,472	5,766	6,622	6,383	6,798	7,142	7,277	7,528	7,724	7,888	8,041	8,188	8,339
Inventories	1,282	1,559	2,568	2,660	2,775	2,913	3,057	3,210	3,373	3,548	3,736	3,940	4,163
Financing receivables, net	5,051	4,380	3,905	5,242	5,119	5,167	5,569	5,624	5,756	5,936	6,017	6,130	6,253
Other current assets	2,349	2,889	4,355	4,529	4,710	4,899	5,095	5,299	5,510	5,731	5,960	6,199	6,446
Total current assets	43,573	39,112	36,717	46,839	53,816	61,927	70,635	78,759	87,274	95,988	104,500	113,219	122,064
Property and equipment, net	2,453	2,338	1,997	1,838	1,691	1,556	1,432	1,317	1,212	1,115	1,026	944	869
Financing receivables, net	5,714	4,884	4,009	4,782	4,732	4,828	5,142	5,215	5,343	5,498	5,579	5,684	5,796
Goodwill	33,806	38,168	38,304	38,304	38,304	38,304	38,304	38,304	38,304	38,304	38,304	38,304	38,304
Purchased intangible assets, net	1,576	3,619	2,569	2,775	3,262	3,094	3,270	3,418	3,441	3,546	3,616	3,670	3,746
Deferred tax assets	3,990	4,360	4,449	4,434	4,627	4,793	4,963	5,103	5,229	5,355	5,451	5,551	5,656
Other assets	2,820	3,921	4,954	5,152	5,358	5,573	5,795	6,027	6,268	6,519	6,780	7,051	7,333
Operating lease right-of-use assets	921	1,095	1,003	923	849	781	719	662	609	560	515	474	436
Total assets	94,853	97,497	94,002	105,048	112,639	120,856	130,260	138,805	147,679	156,887	165,772	174,899	184,205
Liabilities and Equity													
Current liabilities:													
Short-term debt	3,005	2,508	1,099	2,262	2,093	1,952	2,277	2,269	2,323	2,456	2,512	2,597	2,696
Accounts payable	2,218	2,362	2,281	2,385	2,489	2,578	2,670	2,745	2,812	2,880	2,932	2,986	3,042
Income taxes payable	839	801	961	1,132	1,189	1,271	1,308	1,352	1,396	1,430	1,451	1,472	1,490
Accrued compensation	3,122	3,818	3,316	3,504	3,702	3,912	4,134	4,368	4,616	4,877	5,154	5,446	5,755
Deferred revenue	11,406	12,148	12,784	12,995	13,741	14,243	14,678	15,137	15,504	15,868	16,161	16,455	16,765
Other current liabilities	4,741	4,620	5,199	5,407	5,623	5,848	6,082	6,325	6,578	6,842	7,115	7,400	7,696
Total current liabilities	25,331	26,257	25,640	27,684	28,838	29,805	31,149	32,195	33,229	34,353	35,326	36,355	37,443
Long-term debt	11,578	9,018	8,416	10,012	9,374	9,535	9,949	9,913	10,094	10,291	10,401	10,574	10,751
Income taxes payable	8,837	8,538	7,725	8,993	9,151	9,310	9,841	10,041	10,271	10,559	10,727	10,924	11,138
Deferred revenue	9,040	10,016	10,480	10,561	11,254	11,639	11,981	12,374	12,666	12,963	13,206	13,444	13,698
Other long-term liabilities	2,147	2,393	1,968	2,047	2,129	2,214	2,302	2,394	2,490	2,590	2,693	2,801	2,913
Total liabilities	56,933	56,222	54,229	59,298	60,745	62,503	65,222	66,918	68,751	70,755	72,353	74,097	75,942
Equity:													
Common stock and additional paid-in capital	41,202	42,346	42,714	43,605	44,496	45,387	46,278	47,169	48,060	48,951	49,842	50,733	51,624
Retained earnings / accumulated deficit	(2,763)	(654)	(1,319)	3,767	9,020	14,588	20,382	26,340	32,490	38,802	45,199	51,690	58,261
Accumulated other comprehensive income / loss	(519)	(417)	(1,622)	(1,622)	(1,622)	(1,622)	(1,622)	(1,622)	(1,622)	(1,622)	(1,622)	(1,622)	(1,622)
Total equity	37,920	41,275	39,773	45,750	51,894	58,353	65,038	71,887	78,928	86,131	93,419	100,801	108,263
Total liabilities and equity	94,853	97,497	94,002	105,048	112,639	120,856	130,260	138,805	147,679	156,887	165,772	174,899	184,205

Cisco

Historical Cash Flow Statement

All figures in millions of U.S. Dollar.

Fiscal Years Ending Jul. 31	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Net cash provided by operating activities											
Net income / loss	8,041	9,983	7,853	8,981	10,739	9,609	110	11,621	11,214	10,591	11,812
Adjustments to operating activities:											
Depreciation, amortization, and other	2,602	2,351	2,432	2,442	2,150	2,286	2,192	1,897	1,808	1,862	1,957
Share-based compensation expense	1,401	1,120	1,348	1,440	1,458	1,526	1,576	1,570	1,569	1,761	1,886
Provision for receivables	50	44	79	134	(9)	(8)	(134)	40	93	(6)	55
Deferred income taxes	(314)	(37)	(678)	(23)	(194)	(124)	900	(350)	(38)	(384)	(309)
Gains / losses on divestitures, investments and other, net	(31)	9	(299)	(258)	(317)	154	(322)	(24)	(138)	(354)	(453)
Accounts receivable	272	(1,001)	340	(413)	(404)	756	(269)	(84)	(107)	(107)	(1,009)
Inventories	(287)	218	(109)	(116)	315	(394)	(244)	131	84	(244)	(1,030)
Financing receivables	(846)	(723)	(119)	(634)	(150)	(1,038)	(219)	(249)	(797)	1,577	1,241
Other assets	(674)	(27)	33	(370)	(37)	15	66	(955)	96	(797)	(1,615)
Accounts payable	(7)	164	(23)	87	(65)	311	504	87	141	(53)	(55)
Income taxes, net	418	(239)	191	53	(300)	60	8,118	312	(322)	(549)	(690)
Accrued compensation	(101)	330	(42)	7	(101)	(110)	100	277	(78)	643	(427)
Deferred revenue	727	598	659	1,275	1,219	1,683	1,205	1,407	2,011	1,560	1,328
Other liabilities	300	196	785	75	(605)	(697)	83	151	(110)	(46)	535
Net cash provided by operating activities	11,491	12,894	12,332	12,552	13,570	13,876	13,666	15,831	15,426	15,454	13,226
Cash flows from investing activities:											
Purchases of investments	(41,810)	(36,608)	(36,317)	(43,975)	(46,760)	(42,702)	(14,285)	(2,416)	(9,212)	(9,328)	(6,070)
Proceeds from sales of investments	27,365	14,799	18,193	20,237	28,778	28,827	17,706	7,388	5,631	3,373	2,660
Proceeds from maturities of investments	12,103	17,909	15,660	15,293	14,115	12,143	15,769	12,928	7,975	8,409	5,686
Acquisitions, net of cash and cash equivalents acquired and divestitures	(375)	(6,766)	(2,989)	(326)	(2,789)	(3,324)	(2,979)	(2,175)	(327)	(7,038)	(373)
Purchases of investments in privately held companies	(380)	(225)	(384)	(222)	(256)	(222)	(267)	(148)	(190)	(175)	(186)
Return of investments in privately held companies	242	209	213	288	91	203	168	159	224	194	237
Acquisition of property and equipment	(1,126)	(1,160)	(1,275)	(1,227)	(1,146)	(964)	(834)	(909)	(770)	(692)	(477)
Proceeds from sales of property and equipment	-	-	232	22	41	7	59	22	179	28	91
Other excluding proceeds from sales of property and equipment	166	74	24	(178)	(191)	39	(13)	(12)	(10)	(56)	(15)
Net cash used in / provided by investing activities	(3,815)	(11,768)	(6,643)	(10,088)	(8,117)	(5,993)	15,324	14,837	3,500	(5,285)	1,553
Net cash used in / provided by financing activities:											
Issuances of common stock	1,372	3,338	1,907	2,016	1,127	708	623	640	655	643	660
Repurchases of common stock-repurchase program	(4,560)	(2,773)	(9,413)	(4,324)	(3,909)	(3,685)	(17,547)	(20,717)	(2,659)	(2,877)	(7,689)
Shares repurchased for tax withholdings on vesting of restricted stock units	(200)	(330)	(430)	(502)	(557)	(619)	(703)	(862)	(727)	(636)	(692)
Short-term borrowings / repayments, original maturities less than 90 days, net	(557)	(20)	(2)	(4)	(4)	2,497	(2,502)	3,446	(3,470)	(5)	606
Issuances of debt	-	24	8,001	4,981	6,978	6,980	6,877	2,250	-	-	1,049
Repayments of debt	-	(16)	(3,276)	(508)	(3,863)	(4,151)	(12,375)	(6,780)	(6,720)	(3,000)	(3,550)
Dividends paid	(1,501)	(3,310)	(3,758)	(4,086)	(4,750)	(5,511)	(5,968)	(5,979)	(6,016)	(6,163)	(6,224)
Other	(153)	(5)	(35)	(14)	150	(178)	(169)	113	81	(59)	(122)
Net cash used in / provided by financing activities	(5,539)	(3,000)	(6,888)	(2,313)	(4,699)	(3,806)	(31,764)	(27,889)	(18,856)	(12,097)	(15,962)
Net increase / decrease in cash and cash equivalents	2,137	(1,874)	(1,199)	151	754	4,077	(2,774)	2,779	40	(1,870)	(1,363)
Proceeds from sales and maturities of investments	39,468	32,708	33,853	35,530	42,893	40,970	33,475	20,316	11,772	11,812	9,942
Cash and cash equivalents, end of period	41,605	30,834	32,654	35,681	43,647	45,047	30,701	23,095	11,812	9,942	8,579
Supplemental cash flow information:											
Cash paid for interest	(681)	(682)	(682)	(760)	(859)	(897)	(910)	(839)	(603)	(438)	(355)
Cash paid for income taxes, net	(2,014)	(1,519)	(2,349)	(2,190)	(2,675)	(2,742)	(3,911)	(2,986)	(3,116)	(3,604)	(3,663)

Cisco										
<i>Forecasted Cash Flow Statement</i>										
All figures in millions of U.S. Dollar.										
Fiscal Years Ending Jul. 31	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Operations										
Net Income / loss	11,452	11,825	12,298	12,963	13,299	13,689	14,088	14,264	14,470	14,655
Depreciation, amortization, and other										
Changes in operating assets and liabilities:										
Accounts receivable, net of allowance	239	(416)	(343)	(135)	(251)	(196)	(164)	(153)	(147)	(151)
Inventories	(92)	(116)	(137)	(144)	(153)	(163)	(175)	(188)	(204)	(222)
Financing receivables, net	(1,337)	123	(47)	(403)	(55)	(131)	(180)	(81)	(113)	(123)
Other current assets	(174)	(181)	(188)	(196)	(204)	(212)	(220)	(229)	(238)	(248)
Financing receivables, net	(773)	50	(96)	(315)	(73)	(127)	(155)	(81)	(105)	(112)
Other assets	(198)	(206)	(214)	(223)	(232)	(241)	(251)	(261)	(271)	(282)
Deferred tax assets	15	(192)	(166)	(170)	(140)	(126)	(127)	(96)	(100)	(105)
Deferred revenue	211	746	502	435	459	367	364	294	293	310
Accounts payable	104	103	89	92	75	68	68	51	54	57
Deferred revenue	81	693	385	342	393	292	296	243	238	254
ST Income taxes payable	171	58	82	37	43	44	34	21	21	18
LT Income taxes payable	1,268	157	159	531	200	230	288	168	197	214
Other current liabilities	208	216	225	234	243	253	263	274	285	296
Other long-term liabilities	79	82	85	89	92	96	100	104	108	112
Accrued compensation	188	199	210	222	234	248	262	276	292	309
Net cash from operations	(10)	1,316	545	394	633	401	402	342	308	325
Investing										
Property and equipment, net	159	147	135	124	114	105	97	89	82	75
Investing	(488)	(507)	(527)	(548)	(570)	(593)	(617)	(642)	(667)	(694)
Goodwill	-	-	-	-	-	-	-	-	-	-
Purchased intangible assets, net	(206)	(486)	168	(176)	(148)	(23)	(106)	(70)	(54)	(76)
Operating lease right-of-use assets	80	74	68	62	57	53	49	45	41	38
Net cash from investing	(454)	(773)	(157)	(537)	(547)	(458)	(577)	(577)	(598)	(656)
Financing										
Short-term debt	1,163	(169)	(141)	325	(8)	55	133	56	85	99
Common stock and additional paid-in capital	891	891	891	891	891	891	891	891	891	891
Retained earnings / accumulated deficit	5,086	5,252	5,568	5,794	5,958	6,150	6,312	6,397	6,491	6,571
Long-term debt	1,596	(638)	161	414	(35)	181	197	110	172	177
Net cash from financing	8,736	5,337	6,479	7,424	6,805	7,277	7,533	7,454	7,639	7,737
Net increase in cash	8,272	5,880	6,867	7,281	6,891	7,220	7,358	7,219	7,349	7,406
Beginning cash	7,079	15,351	21,230	28,097	35,378	42,270	49,489	56,848	64,067	71,416
Ending cash	15,351	21,230	28,097	35,378	42,270	49,489	56,848	64,067	71,416	78,822

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Common Size Income Statement

<i>Fiscal Years Ending Jul. 31</i>	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
REVENUE:													
Product	72.98%	72.29%	69.85%	74.47%	75.26%	76.05%	76.63%	77.09%	77.48%	77.83%	78.05%	78.28%	78.51%
Service	27.02%	27.71%	26.77%	25.53%	24.74%	23.95%	23.37%	22.91%	22.52%	22.17%	21.95%	21.72%	21.49%
Total revenue	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%	100.00%
COST OF SALES:	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Product	-26.77%	-26.70%	-28.73%	-27.74%	-28.18%	-28.60%	-27.92%	-27.87%	-27.69%	-27.32%	-27.06%	-26.75%	-26.42%
Service	-8.96%	-9.28%	-8.72%	-9.21%	-9.17%	-9.16%	-9.14%	-9.19%	-9.27%	-9.34%	-9.47%	-9.59%	-9.70%
Total cost of sales	-32.07%	-32.24%	-33.66%	-33.59%	-34.06%	-34.59%	-34.06%	-34.15%	-34.12%	-33.92%	-33.85%	-33.72%	-33.57%
GROSS MARGIN	64.26%	64.02%	66.34%	66.41%	65.94%	65.41%	65.94%	65.85%	65.88%	66.08%	66.15%	66.28%	66.43%
OPERATING EXPENSES:	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Research and development	-12.87%	-13.15%	-13.14%	-12.30%	-12.16%	-11.96%	-11.59%	-11.48%	-11.31%	-11.10%	-11.03%	-10.88%	-10.73%
Sales and marketing	-18.60%	-18.59%	-17.62%	-18.27%	-18.16%	-18.02%	-18.15%	-18.11%	-18.09%	-18.12%	-18.10%	-18.10%	-18.11%
General and administrative	-3.90%	-4.32%	-4.08%	-4.10%	-4.16%	-4.11%	-4.13%	-4.13%	-4.12%	-4.13%	-4.13%	-4.13%	-4.13%
Amortization of purchased intangible assets	-0.29%	-0.43%	-0.61%	-0.63%	-0.69%	-0.82%	-1.02%	-1.23%	-1.44%	-1.71%	-2.07%	-2.52%	-3.03%
Restructuring and other charges	-0.98%	-1.78%	-0.01%	-0.92%	-0.90%	-0.61%	-0.81%	-0.78%	-0.73%	-0.77%	-0.76%	-0.76%	-0.76%
Total operating expenses	-36.64%	-38.26%	-39.25%	-39.59%	-39.36%	-38.70%	-38.70%	-38.65%	-38.53%	-38.57%	-38.78%	-39.00%	-39.32%
OPERATING INCOME:	31.29%	29.50%	27.09%	26.83%	26.58%	26.72%	27.24%	27.20%	27.35%	27.50%	27.37%	27.28%	27.12%
Interest income	1.87%	1.24%	0.92%	0.88%	0.85%	0.82%	0.79%	0.77%	0.75%	0.73%	0.72%	0.71%	0.69%
Interest expense	-1.19%	-0.87%	-0.70%	-0.67%	-0.64%	-0.62%	-0.60%	-0.58%	-0.57%	-0.55%	-0.54%	-0.53%	-0.52%
Other income / loss, net	0.03%	0.49%	0.76%	0.73%	0.70%	0.67%	0.65%	0.63%	0.62%	0.60%	0.59%	0.58%	0.57%
Interest and other income / loss, net	0.71%	0.86%	0.99%	0.94%	0.90%	0.87%	0.84%	0.82%	0.80%	0.78%	0.77%	0.75%	0.74%
INCOME BEFORE PROVISION FOR INCOME TAXES	28.34%	26.62%	28.08%	27.77%	27.48%	27.59%	28.08%	28.02%	28.15%	28.28%	28.14%	28.03%	27.86%
Provision for income taxes	-5.59%	-5.36%	-5.17%	-6.53%	-6.46%	-6.48%	-6.60%	-6.59%	-6.62%	-6.65%	-6.61%	-6.59%	-6.55%
NET INCOME	22.75%	21.26%	22.91%	21.24%	21.02%	21.11%	21.48%	21.44%	21.54%	21.64%	21.52%	21.44%	21.31%

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Common Size Balance Sheet

<i>Fiscal Years Ending Jul. 31</i>	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Assets													
Current assets:													
Cash and cash equivalents	23.95%	18.42%	13.73%	28.47%	37.74%	48.22%	58.63%	68.14%	77.85%	87.31%	96.67%	105.82%	114.63%
Investments	35.72%	30.80%	23.64%	23.51%	23.44%	23.53%	23.63%	23.90%	24.26%	24.63%	25.17%	25.71%	26.24%
Accounts receivable, net of allowance	11.10%	11.57%	12.84%	11.84%	12.09%	12.26%	12.06%	12.13%	12.15%	12.11%	12.13%	12.13%	12.13%
Inventories	2.60%	3.13%	4.98%	4.93%	4.93%	5.00%	5.07%	5.17%	5.31%	5.45%	5.64%	5.84%	6.05%
Financing receivables, net	10.25%	8.79%	7.57%	9.72%	9.10%	8.87%	9.23%	9.07%	9.05%	9.12%	9.08%	9.08%	9.09%
Other current assets	4.76%	5.80%	8.45%	8.40%	8.37%	8.41%	8.44%	8.54%	8.67%	8.80%	8.99%	9.19%	9.37%
Total current assets	88.38%	78.51%	71.22%	86.88%	95.67%	106.28%	117.06%	126.95%	137.29%	147.43%	157.69%	167.77%	177.51%
Property and equipment, net	4.98%	4.69%	3.87%	3.41%	3.01%	2.67%	2.37%	2.12%	1.91%	1.71%	1.55%	1.40%	1.26%
Financing receivables, net	11.59%	9.80%	7.78%	8.87%	8.41%	8.29%	8.52%	8.41%	8.41%	8.44%	8.42%	8.42%	8.43%
Goodwill	68.57%	76.61%	74.29%	71.05%	68.10%	65.74%	63.48%	61.74%	60.26%	58.83%	57.80%	56.76%	55.70%
Purchased intangible assets, net	3.20%	7.26%	4.98%	5.15%	5.80%	5.31%	5.42%	5.51%	5.41%	5.45%	5.46%	5.44%	5.45%
Deferred tax assets	8.09%	8.75%	8.63%	8.23%	8.23%	8.23%	8.23%	8.23%	8.23%	8.23%	8.23%	8.23%	8.23%
Other assets	5.72%	7.87%	9.61%	9.56%	9.53%	9.56%	9.60%	9.72%	9.86%	10.01%	10.23%	10.45%	10.66%
Total assets	192.40%	195.71%	182.33%	194.86%	200.25%	207.41%	215.88%	223.74%	232.32%	240.97%	250.14%	259.17%	267.88%
Liabilities and Equity	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Current liabilities:	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Short-term debt	6.10%	5.03%	2.13%	4.19%	3.72%	3.35%	3.77%	3.66%	3.65%	3.77%	3.79%	3.85%	3.92%
Accounts payable	4.50%	4.74%	4.42%	4.42%	4.42%	4.42%	4.42%	4.42%	4.42%	4.42%	4.42%	4.42%	4.42%
Income taxes payable	1.70%	1.61%	1.86%	2.10%	2.11%	2.18%	2.17%	2.18%	2.20%	2.20%	2.19%	2.18%	2.17%
Accrued compensation	6.33%	7.66%	6.43%	6.50%	6.58%	6.71%	6.85%	7.04%	7.26%	7.49%	7.78%	8.07%	8.37%
Deferred revenue	23.14%	24.38%	24.80%	24.11%	24.43%	24.44%	24.33%	24.40%	24.39%	24.37%	24.39%	24.38%	24.38%
Other current liabilities	9.62%	9.27%	10.08%	10.03%	10.00%	10.04%	10.08%	10.20%	10.35%	10.51%	10.74%	10.97%	11.19%
Total current liabilities	51.38%	52.71%	49.73%	51.35%	51.27%	51.15%	51.62%	51.90%	52.27%	52.76%	53.30%	53.87%	54.45%
Long-term debt	23.48%	18.10%	16.32%	18.57%	16.67%	16.36%	16.49%	15.98%	15.88%	15.81%	15.69%	15.67%	15.63%
Income taxes payable	17.92%	17.14%	14.98%	16.68%	16.27%	15.98%	16.31%	16.19%	16.16%	16.22%	16.19%	16.19%	16.20%
Deferred revenue	18.34%	20.11%	20.33%	19.59%	20.01%	19.97%	19.86%	19.95%	19.93%	19.91%	19.93%	19.92%	19.92%
Other long-term liabilities	4.35%	4.80%	3.82%	3.80%	3.78%	3.80%	3.82%	3.86%	3.92%	3.98%	4.06%	4.15%	4.24%
Total liabilities	115.48%	112.85%	105.18%	109.99%	107.99%	107.27%	108.09%	107.87%	108.16%	108.67%	109.18%	109.80%	110.44%
Equity:	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Common stock and additional paid-in capital	83.57%	85.00%	82.85%	80.88%	79.10%	77.89%	76.70%	76.03%	75.61%	75.19%	75.21%	75.18%	75.07%
Retained earnings / accumulated deficit	-5.60%	-1.31%	-2.56%	6.99%	16.03%	25.04%	33.78%	42.46%	51.11%	59.60%	68.20%	76.59%	84.73%
Accumulated other comprehensive income / loss	-1.05%	-0.84%	-3.15%	-3.01%	-2.88%	-2.78%	-2.69%	-2.61%	-2.55%	-2.49%	-2.45%	-2.40%	-2.36%
Noncontrolling interest	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total equity	76.92%	82.85%	77.14%	84.86%	92.26%	100.14%	107.79%	115.88%	124.16%	132.29%	140.96%	149.37%	157.44%
Total liabilities and equity	192.40%	195.71%	182.33%	194.86%	200.25%	207.41%	215.88%	223.74%	232.32%	240.97%	250.14%	259.17%	267.88%

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Value Driver Estimation

Fiscal Years Ending Jul. 31	2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
NOPLAT:													
Total revenue	49,301	49,818	51,557	53,911	56,250	58,269	60,338	62,037	63,567	65,107	66,271	67,485	68,765
Total cost of sales	(15,810)	(16,062)	(17,352)	(18,106)	(19,158)	(20,152)	(20,548)	(21,184)	(21,691)	(22,087)	(22,433)	(22,758)	(23,081)
Research and development	(6,347)	(6,549)	(6,774)	(6,631)	(6,842)	(6,971)	(6,996)	(7,121)	(7,188)	(7,228)	(7,312)	(7,344)	(7,382)
Sales and marketing	(9,169)	(9,259)	(9,085)	(9,849)	(10,214)	(10,498)	(10,950)	(11,233)	(11,499)	(11,794)	(11,998)	(12,217)	(12,452)
General and administrative	(1,925)	(2,152)	(2,101)	(2,210)	(2,343)	(2,397)	(2,490)	(2,565)	(2,622)	(2,688)	(2,737)	(2,785)	(2,839)
Amortization of purchased intangible assets	(141)	(215)	(313)	(341)	(388)	(478)	(615)	(763)	(914)	(1,113)	(1,375)	(1,699)	(2,082)
Restructuring and other charges	(481)	(886)	(6)	(497)	(509)	(357)	(490)	(482)	(467)	(504)	(505)	(511)	(526)
Implied interest on operating leases	43	37	44	41	41	42	41	41	41	41	41	41	40
EBITA	15,428	14,695	15,926	16,318	16,837	17,458	18,290	18,730	19,227	19,734	19,953	20,211	20,445
Adjusted Taxes:													
Marginal Tax Rate	21%	26%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%	24%
Provision for income taxes	(2,756)	(2,671)	(2,665)	(3,518)	(3,633)	(3,778)	(3,982)	(4,085)	(4,205)	(4,328)	(4,382)	(4,445)	(4,502)
Plus: Tax on Oper. Lease Interest	9.13	9.82	10.40	10.64	10.82	11.44	11.97	12.46	12.92	13.43	14.03	14.61	15.20
Less: Tax on Interest & other income, net	74	113	119	119	119	119	119	119	119	119	119	119	119
Total adjusted taxes	(2,673)	(2,548)	(2,535)	(3,388)	(3,502)	(3,647)	(3,851)	(3,954)	(4,073)	(4,195)	(4,248)	(4,311)	(4,367)
+ Change in Deferred Taxes	(75)	370	89	(15)	192	166	170	140	126	127	96	100	105
NOPLAT	12,680	12,517	13,480	12,915	13,527	13,977	14,610	14,916	15,280	15,666	15,801	16,000	16,183
Invested Capital (IC):													
+ Normal cash	6,769	6,840	7,079	7,402	7,723	8,001	8,285	8,518	8,728	8,940	9,099	9,266	9,442
+ Accounts receivable, net of allowance	5,472	5,766	6,622	6,383	6,798	7,142	7,277	7,528	7,724	7,888	8,041	8,188	8,339
+ Inventories	1,282	1,559	2,568	2,660	2,775	2,913	3,057	3,210	3,373	3,548	3,736	3,940	4,163
+ Other current assets	2,349	2,889	4,355	4,529	4,710	4,899	5,095	5,299	5,510	5,731	5,960	6,199	6,446
- Accounts payable	(2,218)	(2,362)	(2,281)	(2,385)	(2,489)	(2,578)	(2,670)	(2,745)	(2,812)	(2,880)	(2,932)	(2,986)	(3,042)
- Accrued compensation	(3,122)	(3,818)	(3,316)	(3,504)	(3,702)	(3,912)	(4,134)	(4,368)	(4,616)	(4,877)	(5,154)	(5,446)	(5,755)
- Income taxes payable	(8,837)	(8,538)	(7,725)	(8,993)	(9,151)	(9,310)	(9,841)	(10,041)	(10,271)	(10,559)	(10,727)	(10,924)	(11,138)
- Other current liabilities	(2,147)	(2,393)	(1,968)	(2,047)	(2,129)	(2,214)	(2,302)	(2,394)	(2,490)	(2,590)	(2,693)	(2,801)	(2,913)
Operating Working Capital	(452)	(57)	5,334	4,044	4,537	4,940	4,767	5,006	5,146	5,199	5,330	5,436	5,542
+ Property and equipment, net	2,453	2,338	1,997	1,838	1,691	1,556	1,432	1,317	1,212	1,115	1,026	944	869
+ Purchased intangible assets, net	1,576	3,619	2,569	2,775	3,262	3,094	3,270	3,418	3,441	3,546	3,616	3,670	3,746
+ Other assets	2,820	3,921	4,954	5,152	5,358	5,573	5,795	6,027	6,268	6,519	6,780	7,051	7,333
- Income taxes payable	(8,837)	(8,538)	(7,725)	(8,993)	(9,151)	(9,310)	(9,841)	(10,041)	(10,271)	(10,559)	(10,727)	(10,924)	(11,138)
- Deferred revenue	(11,406)	(12,148)	(12,784)	(12,995)	(13,741)	(14,243)	(14,678)	(15,137)	(15,504)	(15,868)	(16,161)	(16,455)	(16,765)
+ PV of operating leases	921	1,095	1,003	990	1,020	998	996	999	992	990	987	984	981
Invested Capital	(12,925)	(9,770)	(4,652)	(7,189)	(7,024)	(7,393)	(8,259)	(8,411)	(8,716)	(9,057)	(9,149)	(9,293)	(9,432)
Free Cash Flow (FCF):													
NOPLAT	12,680	12,517	13,480	12,915	13,527	13,977	14,610	14,916	15,280	15,666	15,801	16,000	16,183
Change in IC	(2,749)	3,155	5,118	(2,537)	165	(369)	(865)	(152)	(305)	(341)	(93)	(144)	(139)
FCF	15,429	9,362	8,362	15,453	13,361	14,346	15,475	15,068	15,586	16,006	15,893	16,144	16,321
Return on Invested Capital (ROIC):													
NOPLAT	12,680	12,517	13,480	12,915	13,527	13,977	14,610	14,916	15,280	15,666	15,801	16,000	16,183
Beginning IC	(10,176)	(12,925)	(9,770)	(4,652)	(7,189)	(7,024)	(7,393)	(8,259)	(8,411)	(8,716)	(9,057)	(9,149)	(9,293)
ROIC	-125%	-97%	-138%	-278%	-188%	-199%	-198%	-181%	-182%	-180%	-174%	-175%	-174%
Economic Profit (EP):													
Beginning IC	(10,176)	(12,925)	(9,770)	(4,652)	(7,189)	(7,024)	(7,393)	(8,259)	(8,411)	(8,716)	(9,057)	(9,149)	(9,293)
x (ROIC - WACC)	-133%	-105%	-146%	-286%	-196%	-207%	-206%	-189%	-190%	-188%	-183%	-183%	-182%
EP	13,520	13,584	14,286	13,299	14,120	14,557	15,220	15,598	15,975	16,385	16,548	16,755	16,950

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Weighted Average Cost of Capital (WACC) Estimation

Cost of Equity:

Risk-Free Rate	3.71%
Beta	0.94
Equity Risk Premium	5.15%
Cost of Equity	8.56%

ASSUMPTIONS:

10-year Treasury bond
Average of 1 yr, 3 yr, and 5 yr raw and adjusted betas
Henry Fund Estimate

Cost of Debt:

Risk-Free Rate	3.71%
Implied Default Premium	0.33%
Pre-Tax Cost of Debt	4.04%
Marginal Tax Rate	23.50%
After-Tax Cost of Debt	3.09%

10-year Treasury bond

YTM on 5-yr corporate bond

Market Value of Common Equity:

Total Shares Outstanding	4,222
Current Stock Price	\$42.50
MV of Equity	179,435

MV Weights

94.46%

Market Value of Debt:

Short-Term Debt	1,099
Long-Term Debt	8,416
PV of Operating Leases	1,003
MV of Total Debt	10,518

5.54%

Market Value of the Firm

189,953

100.00%

Estimated WACC

8.26%

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Discounted Cash Flow (DCF) and Economic Profit (EP) Valuation Models

Key Inputs:

CV Growth of NOPLAT	1.14%
CV Year ROIC	-174.88%
WACC	8.26%
Cost of Equity	8.56%

<i>Fiscal Years Ending Jul. 31</i>	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
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DCF Model:

Free Cash Flow (FCF)	15,453	13,361	14,346	15,475	15,068	15,586	16,006	15,893	16,144	16,321
Continuing Value (CV)										228,894
PV of FCF	14,274	11,401	11,308	11,267	10,134	9,683	9,185	8,425	7,905	112,083

Value of Operating Assets:	205,665
Non-Operating Adjustments	
+ Excess Cash	7,949
+ Investments	6,383
- Short-term debt	(2,262)
- Long-term debt	(10,012)
- PV of ESOP	(891)
- PV operating leases	(1,003)

Value of Equity	205,829
Shares Outstanding	4,222
Intrinsic Value of Last FYE	\$ 48.75
Implied Price as of Today	\$ 49.28

EP Model:

Economic Profit (EP)	13,299	14,120	14,557	15,220	15,598	15,975	16,385	16,548	16,755	16,950
Continuing Value (CV)										238,187
PV of EP	12,285	12,048	11,474	11,082	10,491	9,924	9,403	8,772	8,205	116,634

Total PV of EP	210,317
Invested Capital (last FYE)	(4,652)
Value of Operating Assets:	205,665
Non-Operating Adjustments	
+ Excess Cash	7,949
+ Investments	6,383
- Short-term debt	(2,262)
- Long-term debt	(10,012)
- PV of ESOP	(891)
- PV operating leases	(1,003)

Value of Equity	205,829
Shares Outstanding	4,222
Intrinsic Value of Last FYE	\$ 48.75
Implied Price as of Today	\$ 49.28

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Dividend Discount Model (DDM) or Fundamental P/E Valuation Model

Fiscal Years Ending Jul. 31	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
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EPS	\$ 2.83	\$ 2.71	\$ 2.80	\$ 2.91	\$ 3.07	\$ 3.15	\$ 3.24	\$ 3.34	\$ 3.38	\$ 3.43
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Key Assumptions

CV growth of EPS	1.27%
CV Year ROE	15.27%
Cost of Equity	8.56%

Future Cash Flows

P/E Multiple (CV Year)										1258.11%
EPS (CV Year)										\$ 3.43
Future Stock Price										\$ 43.12
Dividends Per Share	1.50	1.51	1.56	1.59	1.70	1.74	1.79	1.84	1.86	
Discounted Cash Flows	1.38	1.28	1.22	1.15	1.13	1.06	1.00	0.95	0.89	20.59

Intrinsic Value as of Last FYE \$ 30.65

Implied Price as of Today **\$ 30.99**

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Relative Valuation Models

Ticker	Company	Price	EPS	EPS	P/E 23	P/E 24	Est. 5yr			EV/EBITDA		WACC
			2023E	2024E			EPS gr.	PEG 23	PEG 24	2023E	2024E	Most Recent
ANET	Arista Networks	\$112.89	\$4.62	\$5.14	24.44	21.96	18.94	1.29	1.16	18.4	16.5	8.3%
JNPR	Juniper Networks	\$26.12	\$1.74	\$1.99	15.01	13.13	14.49	1.04	0.91	8.5	8.2	7.4%
MSI	Motorola Solutions	\$207.02	\$11.06	\$12.48	18.72	16.59	11.42	1.64	1.45	1.3	0.9	7.3%
PANW	Palo Alto Networks	\$505.75	\$9.27	\$11.35	54.56	44.56	25.98	2.10	1.72	30.6	25.0	7.8%
			Average		19.39	17.23	17.71	1.52	1.31	14.70	12.65	7.7%
CSCO	Cisco	\$41.71	\$2.71	\$2.80	15.4	14.9	2.17	7.1	6.9			8.26%

Implied Relative Value:

P/E (EPS23)	\$ 52.59
P/E (EPS24)	\$ 48.25
PEG (EPS23)	\$ 8.91
PEG (EPS24)	\$ 7.94

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Effects of ESOP Exercise and Share Repurchases on Common Stock Account and Number of Shares Outstanding

Number of Options Outstanding (shares):	53,000
Average Time to Maturity (years):	<u>1.27</u>
Expected Annual Number of Options Exercised:	41,863

Current Average Strike Price:	\$ 1.27
Cost of Equity:	8.56%
Current Stock Price:	\$41.71

Fiscal Years Ending Jul. 31	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Increase in Shares Outstanding:	0	0	0	0	0	0	0	0	0	0
Average Strike Price:	\$ 1.27	\$ 1.27	\$ 1.27	\$ 1.27	\$ 1.27	\$ 1.27	\$ 1.27	\$ 1.27	\$ 1.27	\$ 1.27
Increase in Common Stock Account:	-	-	-	-	-	-	-	-	-	-
Share Repurchases (\$)	5,500	3,500	1,300	1,000	700	700	700	600	600	600
Expected Price of Repurchased Shares:	\$ 41.71	\$ 43.78	\$ 45.95	\$ 48.23	\$ 50.62	\$ 53.13	\$ 55.77	\$ 58.53	\$ 61.44	\$ 64.48
Number of Shares Repurchased:	132	80	28	21	14	13	13	10	10	9
Shares Outstanding (beginning of the year)	4,222	4,090	4,010	3,982	3,961	3,947	3,934	3,922	3,911	3,902
Plus: Shares Issued Through ESOP	0	0	0	0	0	0	0	0	0	0
Less: Shares Repurchased in Treasury	132	80	28	21	14	13	13	10	10	9
Shares Outstanding (end of the year)	4,090	4,010	3,982	3,961	3,947	3,934	3,922	3,911	3,902	3,892

Cisco*Valuation of Options Granted under ESOP*

Current Stock Price	\$41.71
Risk Free Rate	3.71%
Current Dividend Yield	3.60%
Annualized St. Dev. of Stock Returns	28.89%

Range of Outstanding Options	Number of Shares	Average Exercise Price	Average Remaining Life (yrs)	B-S Option Price	Value of Options Granted
Range 1	18,000	12.9	1.20	\$ 27.61	\$ 306,000
Range 2	17,000	12.46	1.30	\$ 27.93	\$ 290,000
Range 3	18,000	10.2	1.30	\$ 30.08	\$ 295,000
Total	53,000	\$ 1.27	1.27	\$ 40.50	\$ 891

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Sensitivity Tables

Pre-Tax Cost of Debt	DCF		Beta					
	49.28	0.87	0.89	0.92	0.94	0.97	0.99	1.02
	1.79%	52.56	51.62	50.73	49.86	49.02	48.21	47.43
	2.54%	52.33	51.41	50.52	49.66	48.83	48.03	47.25
	3.29%	52.12	51.20	50.32	49.47	48.64	47.85	47.07
	4.04%	51.91	51.00	50.12	49.28	48.46	47.67	46.91
	4.79%	51.70	50.80	49.93	49.09	48.28	47.50	46.74
	5.54%	51.50	50.61	49.75	48.92	48.11	47.33	46.58
	6.29%	51.31	50.42	49.57	48.74	47.94	47.17	46.42

ROI	DCF		CV Growth of NOPLAT					
	49.28	1.07%	1.17%	1.27%	1.37%	1.47%	1.57%	1.67%
	1.00%	49.52	49.92	50.32	50.74	51.17	51.61	52.06
	2.00%	49.36	49.75	50.15	50.57	51.00	51.44	51.89
	3.00%	49.18	49.57	49.97	50.39	50.81	51.25	51.71
	4.00%	48.99	49.38	49.78	50.20	50.62	51.06	51.51
	5.00%	48.80	49.19	49.59	50.00	50.42	50.86	51.30
	6.00%	48.59	48.98	49.37	49.78	50.20	50.64	51.09
	7.00%	48.37	48.75	49.15	49.56	49.98	50.41	50.85

CV Growth of NOPLAT	DCF		Risk Free Rate					
	49.28	2.21%	2.71%	3.21%	3.71%	4.21%	4.71%	5.21%
	1.59%	64.70	59.45	54.99	51.16	47.84	44.93	42.37
	1.84%	66.81	61.15	56.39	52.32	48.82	45.76	43.07
	2.09%	69.14	63.02	57.91	53.58	49.87	46.64	43.82
	2.34%	71.73	65.07	59.57	54.94	51.00	47.59	44.63
	2.59%	74.63	67.35	61.39	56.42	52.22	48.61	45.49
	2.84%	77.88	69.87	63.40	58.04	53.55	49.71	46.41
	3.09%	81.57	72.70	65.61	59.82	54.99	50.90	47.40

CV Growth of EPS	DDM		Equity Risk Premium					
	30.99	2.96%	3.21%	3.46%	3.71%	3.96%	4.21%	4.46%
	1.60%	46.87	44.46	42.27	40.27	38.43	36.75	35.19
	1.85%	48.10	45.53	43.20	41.08	39.15	37.37	35.74
	2.10%	49.48	46.72	44.23	41.98	39.93	38.05	36.33
	2.35%	51.02	48.04	45.37	42.96	40.78	38.80	36.98
	2.60%	52.76	49.52	46.64	44.05	41.72	39.61	37.70
	2.85%	54.74	51.19	48.06	45.27	42.77	40.52	38.48
	3.10%	57.01	53.10	49.67	46.64	43.94	41.52	39.34

Marginal Tax Rate	DCF		WACC					
	49.28	7.51%	7.76%	8.01%	8.26%	8.51%	8.76%	9.01%
	17.50%	58.98	56.74	54.67	52.74	50.94	49.26	47.68
	19.50%	57.69	55.50	53.47	51.58	49.83	48.18	46.64
	21.50%	56.40	54.26	52.27	50.43	48.71	47.11	45.60
	23.50%	55.10	53.01	51.08	49.28	47.60	46.03	44.56
	25.50%	53.81	51.77	49.88	48.13	46.49	44.96	43.52
	27.50%	52.52	50.53	48.69	46.97	45.37	43.88	42.48
	29.50%	51.22	49.29	47.49	45.82	44.26	42.81	41.45

Cost of Equity	DCF		Dividend Yield					
	49.28	2.10%	2.60%	3.10%	3.60%	4.10%	4.60%	5.10%
	7.06%	49.28	49.23	49.17	49.12	49.07	49.02	48.96
	7.56%	49.33	49.28	49.23	49.17	49.12	49.07	49.02
	8.06%	49.38	49.33	49.28	49.23	49.17	49.12	49.07
	8.56%	49.43	49.38	49.33	49.28	49.23	49.17	49.12
	9.06%	49.48	49.43	49.38	49.33	49.28	49.23	49.17
	9.56%	49.54	49.48	49.43	49.38	49.33	49.28	49.23
	10.06%	49.59	49.54	49.48	49.43	49.38	49.33	49.28

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Key Management Ratios

Fiscal Years Ending Jul. 31		2020	2021	2022	2023E	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E
Liquidity Ratios:														
Current Ratio	Current Assets/Current Liabilities	1.72	1.49	1.43	1.69	1.87	2.08	2.27	2.45	2.63	2.79	2.96	3.11	3.26
Quick Ratio	(Current Assets - Inventory)/Current Liabilities	1.67	1.43	1.33	1.60	1.77	1.98	2.17	2.35	2.52	2.69	2.85	3.01	3.15
Cash Ratio	Cash/Current Liabilities	0.47	0.35	0.28	0.55	0.74	0.94	1.14	1.31	1.49	1.65	1.81	1.96	2.11
Asset-Management Ratios:														
Asset Turnover	Sales/Average Assets	0.54	0.56	0.59	0.59	0.55	0.53	0.51	0.48	0.46	0.44	0.43	-	-
Inventory Turnover	COGS/Average Inventory	-13.01	-11.13	-7.78	(6.64)	(6.66)	(6.74)	(6.75)	(6.56)	(6.44)	(6.27)	(6.06)	(5.84)	(5.62)
Inventory Period	365/Inventory Turnover	-28.05	-32.79	-46.89	(54.98)	(54.78)	(54.18)	(54.06)	(55.66)	(56.71)	(58.23)	(60.19)	(62.45)	(64.98)
Financial Leverage Ratios:														
Debt Ratio	Total Debt/Total Assets	15.37%	11.82%	10.12%	11.68%	10.18%	9.50%	9.39%	8.78%	8.41%	8.13%	7.79%	7.53%	7.30%
Debt-to-Equity Ratio	Total Debt/Total Equity	38.46%	27.92%	23.92%	26.83%	22.10%	19.69%	18.80%	16.95%	15.73%	14.80%	13.82%	13.07%	12.42%
Equity Ratio	Total Equity/Total Assets	39.98%	42.33%	42.31%	43.55%	46.07%	48.28%	49.93%	51.79%	53.45%	54.90%	56.35%	57.63%	58.77%
Profitability Ratios:														
Return on Equity	NI/Beg. Total Stockholders' Equity	33.40%	27.93%	28.62%	28.79%	25.85%	23.70%	22.21%	20.45%	19.04%	17.85%	16.56%	15.49%	14.54%
Return on Assets	NI/Beg. Total Assets	11.47%	11.17%	12.12%	12.18%	11.26%	10.92%	10.73%	10.21%	9.86%	9.54%	9.09%	8.73%	8.38%
Gross Profit Margin	(Sales - COGS)/Sales	133.41%	132.07%	132.24%	133.66%	133.59%	134.06%	134.59%	134.06%	134.15%	134.12%	133.92%	133.85%	133.72%
Payout Policy Ratios:														
Dividend Payout Ratio	Dividend per Share/EPS	53.58%	58.17%	53.00%	55.59%	55.59%	54.72%	55.30%	55.20%	55.08%	55.19%	55.16%	55.14%	55.16%
Total Payout Ratio ((Divs. + Repurchases)/NI)	(Dividend + Repurchases)/NI			78.21%	55.05%	53.01%	49.46%	48.21%	50.46%	51.12%	49.76%	49.18%	49.51%	50.04%
Retention Ratio	1- Dividend Payout Ratio	46.42%	41.83%	47.00%	44.41%	44.41%	45.28%	44.70%	44.80%	44.92%	44.81%	44.84%	44.86%	44.84%