

Apple Inc. (AAPL)

April 17, 2024

Technology

Stock Rating

BUY

Investment Thesis

Target Price

\$170 - \$190

Apple's growth and financial success are underpinned by its ecosystem and strategic expansion into high-margin (70%+ gross) digital services. Apple's introduction of the Vision platform, marks a significant venture into spatial computing. Despite initial adoption hurdles primarily due to its premium pricing, the platform is anticipated to evolve into a key element of Apple's ecosystem, offering immersive experiences that merge the digital with the physical. We believe the Vision platform will sustain future growth as iPhone sales soften. We recommend a BUY rating with a target price of \$180 representing a 7.1% upside from Apple's current market price of \$168.

Drivers of Thesis

- Vision:** The Vision Pro represents Apple's strategic foray into spatial computing, with potential for significant growth as the platform matures. We estimate a CAGR of 63.1% over the forecasted period (through 2033).
- Services:** With a projected 12.4% CAGR, the revenue from Apple's high-margin services is poised for growth. This upward trend, driven by the greater demand for digital content and cloud services, provides strong profit potential for investors.

Risks to Thesis

- Regulation:** Apple faces regulatory scrutiny for its integrated ecosystem and services business. Issues like the 30% commission on in-app purchases and exclusive arrangements, such as making Google the default search engine on Apple devices, could be impacted by antitrust actions, potentially altering revenue streams.
- Supply Chain:** Apple's reliance on a complex global supply chain, heavily concentrated in China and Taiwan, exposes it to geopolitical tensions, trade disputes, and other disruptions. Efforts to diversify manufacturing to countries like India and Vietnam might mitigate some risks but could also introduce new challenges and inflate costs in the short to medium term.

Henry Fund DCF	\$180
Henry Fund DDM	\$147
Relative Multiple	\$169

Price Data

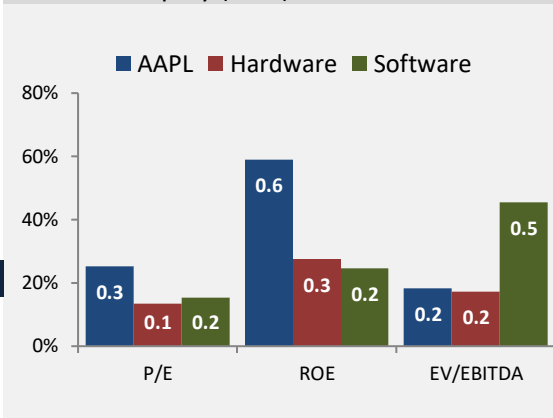
Current Price	\$168
52wk Range	\$163 - \$200
Consensus 1yr Target	\$198

Key Statistics

Market Cap (B)	\$2,549
Shares Outstanding (B)	15.4
Institutional Ownership	56.7%
Beta	1.17
Dividend Yield	0.56%
Est. 5yr Growth	12.1%
Price/Earnings (TTM)	26.3
Price/Earnings (FY1)	24.5
Price/Sales (TTM)	6.9
Price/Book (mrq)	35.3

Profitability

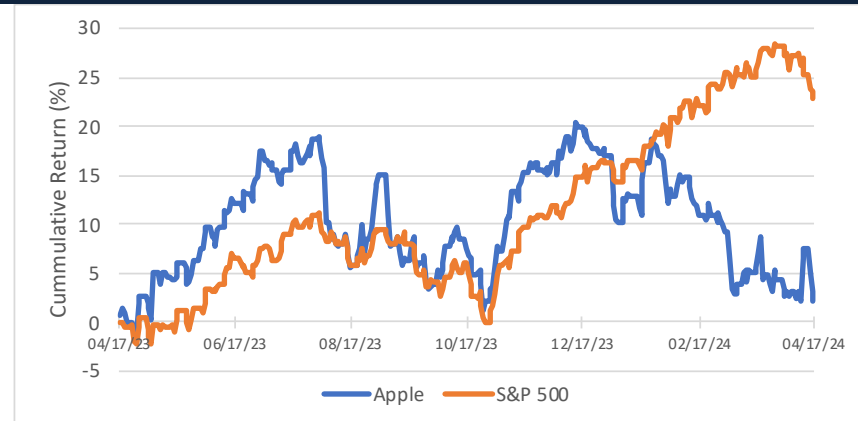
Operating Margin	29.8%
Profit Margin	25.3%
Return on Assets (TTM)	27.5%
Return on Equity (TTM)	191.4%



Earnings Estimates

Year	2021	2022	2023	2023E	2024E	2025E
EPS	\$5.67	\$6.15	\$6.16	\$6.56	\$7.12	\$7.77
HF est.				\$6.89	\$7.88	\$9.03
Growth	71.3%	8.5%	0.2%	11.8%	14.4%	14.7%

12 Month Performance



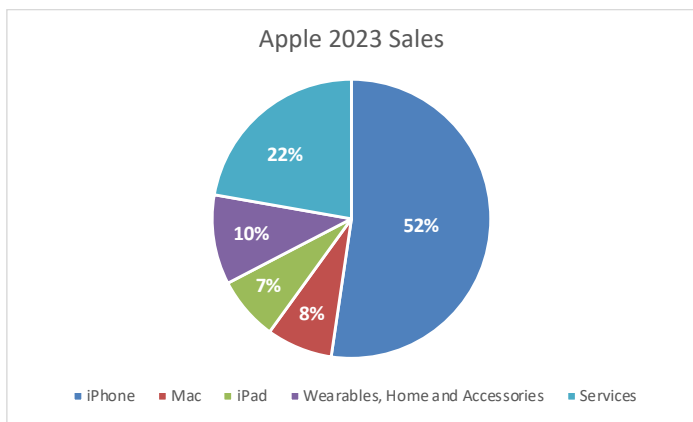
Company Description

Apple is a technology firm with an integrated ecosystem of products and services. The company currently has 2.2 billion active devices. The company's growth prospects lie in expanding digital services and developing its Vision spatial computing platform. However, regulatory concerns over its integrated ecosystem could threaten the profitability of its service business.

COMPANY DESCRIPTION

Apple Inc.

Apple is an innovative technology firm with a recognizable brand. The firm leverages its brand to sell customers a sticky and profitable ecosystem of products and services. Apple’s active install base comprises 2.2 billion devices.¹ We expect this number to grow. The firm’s product categories include the iPhone, iPad, Mac, Vision, Wearables, Home and Accessories.² Apple is also a digital services business selling cloud storage, digital subscriptions, including video and music streaming, and more.



Sales: \$383B

Source: [Apple 10-K, 2023](#)

Revenue Segments

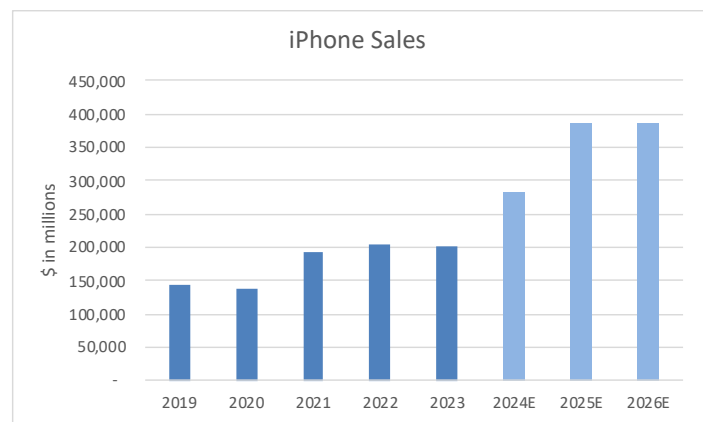
Apple’s ecosystem is its most important competitive moat. The integration of proprietary hardware and software provides a seamless user experience. For example, a Mac user can use Apple’s Sidecar feature to turn an iPad into a wireless, low-latency secondary display. Files can be wirelessly shared across all Apple devices instantly using AirDrop. The list of features is vast and, most importantly, exclusive to Apple devices. Because of this deep integration, each device is part of a broader consumer experience controlled and monetized by Apple.

Apple’s ecosystem is designed to be self-reinforcing, as the total utility of each device is unlocked when used in tandem with other Apple products. This interconnectedness drives consumers to choose devices like the Apple Watch, which is most effective with an iPhone. This synergy influences initial purchases and encourages users to continue investing in Apple products.

We believe Apple’s ecosystem will serve as a long-term competitive moat.

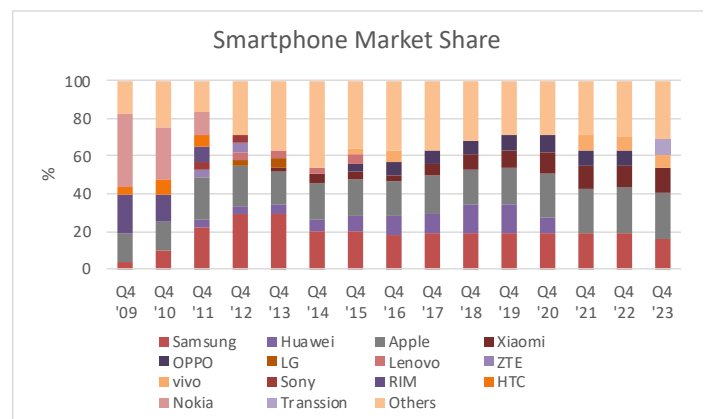
iPhone: The iPhone is Apple’s flagship device and serves as the nexus of its users’ digital lives. Beyond its role as a communications device, the iPhone is also a camera, internet browser, and multimedia device. The iPhone is ubiquitous in society and populates hundreds of millions of pockets across the world.

The iPhone is settling into its maturity stage. New models do not materially differ from previous generations. As a result, iPhone turnover rates are abating, yielding softer growth. The [Valuation](#) section below further discusses iPhone sales.



Source: [Apple 10-K, 2023](#)

Apple’s dominant position is eroding as Chinese manufacturers such as Xiaomi and Huawei compete for market share. In Q1 of 2024, iPhone deliveries fell 9.6% from 55.4 to 50.1 million units.²⁰ We expect Chinese iPhone sales growth to continue softening as China pursues technological sovereignty.²⁶



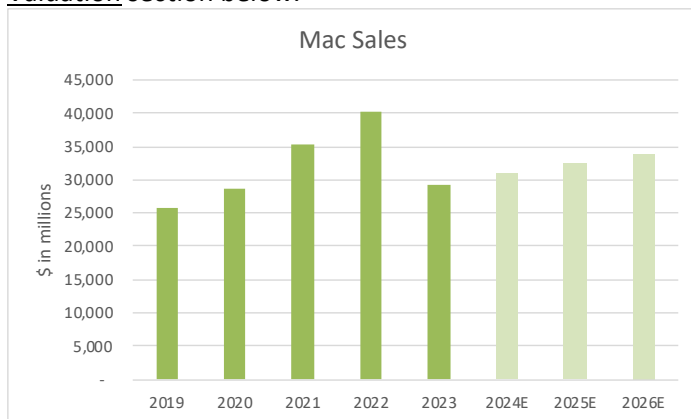
Source: [Statista](#)

Mac: Apple offers a diverse array of personal computers, from entry-level laptops to professional machines. All Mac computers run Apple’s macOS software. Its lineup comprises the MacBook Air, MacBook Pro, iMac, Mac mini, Mac Studio, and Mac Pro. Apple maintains a 9.8% market share for PCs, trailing only Lenovo and Dell.⁴ The popularization of work-from-home boosted sales throughout the pandemic but has since fallen, with a 27% decline in 2023 (YoY).

In 2020, Apple ditched Intel chips in favor of its own ARM-based architecture. By vertically integrating the processor’s design, Apple achieves superior performance and longer battery life. Today, Apple’s most advanced chip architecture is the M3 processor.

The Mac lineup is susceptible to product cannibalization. The iPad and Vision platform are its most significant threats. iPads (discussed below), paired with a keyboard, serve many of the same basic functions as a Mac and generally cost less. Moreover, the flagship iPad model flexes Apple’s M2 chip, giving ample processing power on par with the latest Macs.

While in its infancy, the advent of Apple’s Vision platform is on a collision course with the Mac. Inside the Vision Pro is a competent M2 processor that displays virtual content in both augmented and virtual reality. Users can access an internet browser like a Mac, install third-party applications, run Microsoft Office, and more. Unlike a Mac, the Vision Pro can simultaneously augment multiple displays, giving users a multi-monitor setup anywhere they go. Moreover, a keyboard and mouse can be connected to mimic the laptop experience. Over time, as the platform matures, we see Vision devices eroding a portion of Mac sales. Further discussion of Mac sales is found in the [Valuation](#) section below.



Source: [Apple 10-K, 2023](#)

Vision: The Vision Pro is Apple’s newest product category. Retailing at \$3,499, the Vision Pro is not a mass-market device. It aims to give developers a glimpse of Apple’s future: augmented (A/R) and virtual reality (V/R). Apple refers to A/R and V/R experiences as “spatial computing.” While somewhat cumbersome to wear, the Vision Pro excels at rendering digital overlays of the world around the user. Users can turn a dial to switch between A/R and V/R, look at an object, and pinch their fingers to navigate Vision Pro’s software. Initial impressions say it is quite intuitive, with the word “magical” being used to describe the experience.

On the whole, early reviews for the Vision Pro are mixed. Some applaud the impressive immersion and intuitive look-and-pinch interface. Others argue it is too expensive, bulky, and lacks a killer feature. As a first-generation product, the truth is somewhere in the middle. Because of its price, it lacks sufficient customer adoption to justify developer engagement. Hence the lack of a killer app. A small customer base also diminishes the device’s network effects, leaving users isolated in both virtual and physical worlds. The price barrier to adoption will wane as the technology matures and economies of scale drive down costs. We remain optimistic about the Vision platform in the long term.

We imagine the Vision Pro evolving into a pair of unobtrusive smart glasses providing an A/R experience that blends digital and physical worlds. The best analogy is the transition from the bag phone to the smartphone. For those born into the smartphone era, a bag phone’s size and functionality (or lack thereof) are laughable by today’s standards. Children of the 2030s will reflect similarly when reflecting upon the Vision Pro. We expect scale and iteration to improve performance while driving down cost. Paired with artificial intelligence technologies, there are many use cases. For example, users wearing the device could access information about any object in their frame of reference. Alternatively, visualized directions could be overlaid on city streets to give maps a new dimension. The list goes on. Developers will use technology similar to the advent of the iPhone’s App Store to create new applications. Further discussion of the Vision platform is in the [Valuation](#) section below.

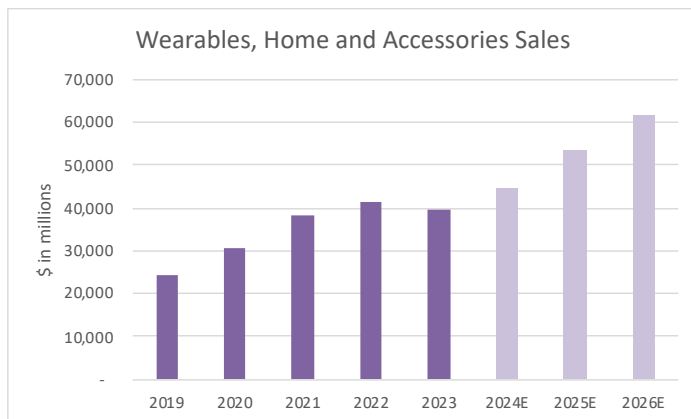
Wearables, Home, and Accessories: Wearables include Apple’s smartwatches and wireless headphones lineup. Apple watches run on the watchOS operating system and

includes the Apple Watch Ultra 2, Apple Watch Series 9, and Apple Watch SE. Apple markets its smartwatches as health and fitness devices. To this end, Apple watches offer a wide array of functionalities such as sleep cycle tracking, heart rate monitoring, electrocardiogram capabilities, temperature measurements, step counting, medication reminders, irregular heart rhythm alerts, and more.²¹

Apple’s wireless headphones line includes AirPods, AirPods Pro, AirPods Max, and Beats products. Apple’s Home offerings include its Apple TV streaming and gaming device and its HomePod and HomePod mini speakers. Accessories comprise a litany of first and third-party-designed cases, chargers, cables, watch straps, and more.

Wearables, Home, and Accessories is, on average, 10% of sales. Apple is expected to refresh its AirPods lineup in late 2024 with better audio performance and USB-C compatibility.²⁴ We believe customers are waiting for this refresh and expect it to boost sales in 2024 and 2025.

We believe wearable device sales will continue to grow as Apple introduces more health and fitness features. Recent reports suggest Apple is exploring a health tracking ring and AirPods outfitted with fitness sensors and low-resolution cameras connected with AI.²³ The Apple Watch’s success as a health and fitness device provides us with confidence that Apple can continue to grow this market with refreshed products and new wearable devices.

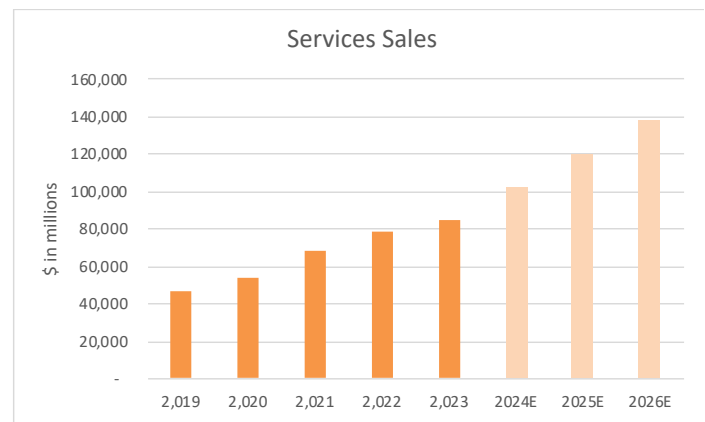


Source: [Apple 10-K, 2023](#)

Services: Leveraging its products, Apple sells accompanying digital services which are often recurring subscriptions with gross margins above 70% (5Y). For context, products earn, on average, a gross margin of 28%.

Services include Advertising, AppleCare, Cloud Services, Digital Content, and Payment Services. Digital Content encompasses various materials, including applications, books, music, videos, games, and podcasts from the App Store and other Apple marketplaces. Additionally, Apple offers exclusive content and services through subscriptions like Apple Arcade (gaming), Apple Fitness+ (personalized fitness), Apple Music (curated music and radio), Apple News+ (news and magazines), and Apple TV+ (original content and live sports).

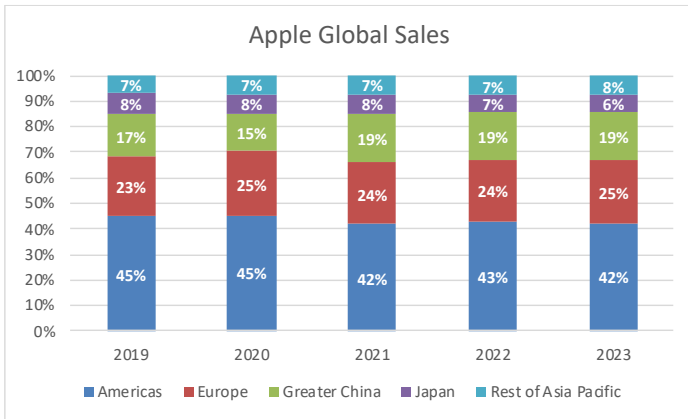
Services are a primary driver of top-line growth, representing 22% of sales with a five-year CAGR of 16.5%. Services are exposed to risk in light of recent regulatory scrutiny. For example, \$18 billion, or 21% percent of all services revenue, flows from an arrangement with Google to make its product the default search engine on Apple devices.⁶ In an antitrust complaint filed against Alphabet (Google’s parent company), the DOJ argues this arrangement between Apple and Google is anticompetitive. An adverse ruling could threaten this revenue stream and materially alter services revenue. Further discussion of services is found in the [Valuation](#) section below.



Source: [Apple 10-K, 2023](#)

Geographic Segments

Apple sells its products and services to an international market. The firm reports the following geographic segments: Americas, Europe, Greater China, Japan, and the Rest of Asia Pacific. In 2023, Apple faced a 3% reduction in total net sales, equivalent to \$11.0 billion. The decrease is entirely attributable to the strength of the US dollar against foreign currencies.



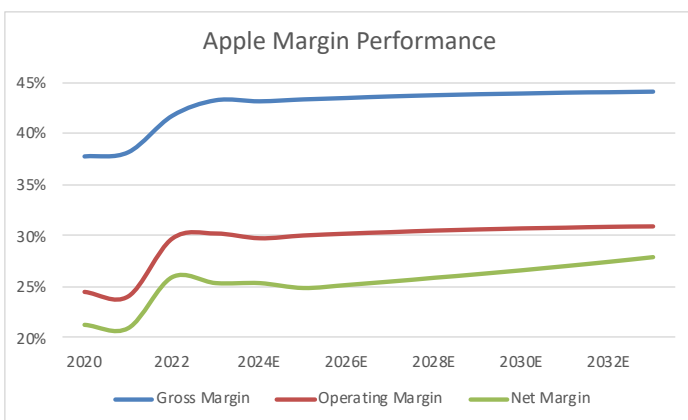
Source: [Apple 10-K, 2023](#)

Cost Structure and Profitability

Gross Margin			
	2023	2022	2021
Products	36.5%	36.3%	35.3%
Services	70.8%	71.7%	69.7%
Total Gross Margin	44.1%	43.3%	41.8%

Source: [Apple 10-K, 2023](#)

Apple’s improved gross margin performance is attributable to its shift towards digital services, which increased from 17.8% to 22.2% of total sales (2019 – 2023). We expect services to continue growing as a percentage of total sales, eventually accounting for 32.4% of total revenue in 2033. This results in a gross margin of 44.2% in 2033E.



Source: [Apple 10-K, 2023](#)

R&D and SG&A expenditures remain relatively flat as a percentage of sales and are proximate to the five-year averages of 6.7% and 6.3%, respectively. Last year’s operating margin suffered slightly due to the repatriation of foreign currencies into a strong US dollar. We do not

expect this trend to persist in the long term. Relative to our model, we assume R&D and SG&A expenditures to remain consistent with their three-year averages of 6.3% and 6.8% of total sales, respectively. See the [Valuation](#) section below for further discussion of operating expenses.

Debt Maturity Analysis

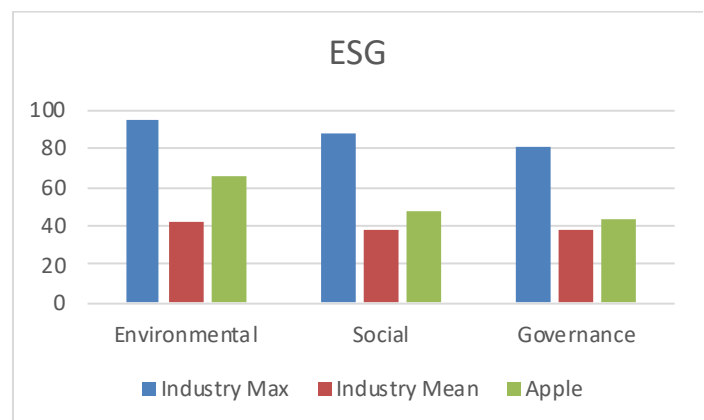
Apple carries \$106.6 billion in long-term debt, with an average annual payment of \$10.1 billion through 2026. In 2023, Apple’s cash and marketable securities totaled \$61.6 billion. Operating cash flow of \$110.5 billion in 2023. The firm’s liquidity position is sufficient to meet its current obligations. According to FactSet, the S&P rates Apple AA+.²² Dividends and stock repurchases reduced the firm’s cash position, but we remain confident in Apple’s solvency and creditworthiness in the long term.

Five-Year Debt Maturity Schedule

Fiscal Year	Coupon (%)	Payment (\$mil)
2024	2.52%	\$9,993
2025	1.70%	\$10,775
2026	2.32%	\$12,265
2027	2.99%	\$9,786
2028	1.94%	\$7,800
Thereafter		\$56,003
Total		\$106,572

Source: [Apple 10-K, 2023](#)

ESG Analysis



Source: [S&P Global](#)

According to S&P Global, Apple earned an ESG score of 52 (out of 100).⁷ Below is a breakdown and peer comparison for the industry. In all three categories, Apple outperforms the industry mean for technology firms. Climate strategy and privacy protection are the strongest contributors to its

score. Supply chain management and human capital development are areas for improvement.

RECENT DEVELOPMENTS

Q1 FY24 Earnings

In Q1 of FY24, ending December 30, 2023, Apple reported \$119.6 billion in sales, a 2% increase YoY, despite a shortened quarter. The company achieved an all-time high in EPS at \$2.18, up 16% YoY. iPhone sales contributed significantly, with revenues of \$69.7 billion, a 6% rise. Services also hit a record with \$23.1 billion in revenue, an 11% increase YoY. Despite these gains, iPad and Wearables categories saw declines of 25% and 11%, respectively. Apple's install base of devices surpassed 2.2 billion, signaling further ecosystem growth. Because Q1 captures holiday sales, it would be inappropriate to annualize Q1 performance as a measure of future financials. Apple does not provide guidance for the remainder of the year.

China

Apple may lose out on its largest market as China seeks to reduce its reliance on Western technology firms.²⁶ Recent reporting suggests that China seeks to "delete America" from its technology infrastructure by 2027. If accurate, this concerning trend would seriously hinder the firm's future prospects. China is a massive market with middle-income wealth. If the Chinese market sours on Apple, the firm's total addressable market will materially shrink. This, in turn, will depress services growth since every foregone device is a lost opportunity to sell a digital service.

Antitrust Litigation

DOJ: In March 2024, the Justice Department filed a civil action against Apple, alleging anticompetitive behavior.⁸ The complaint focuses on Apple's efforts to interfere with the ease of switching operating systems. While not exhaustive, the DOJ cites the following actions as evidence of monopoly power: (1) blocking the development of super apps, (2) suppressing mobile cloud streaming services, (3) excluding cross-platform messaging apps, (4) diminishing the functionality of non-Apple smartwatches, and (5) limiting third-party digital wallets.⁸ These actions allegedly frustrated competition and resulted in outsized profits. If the DOJ prevails, Apple's services business may suffer, including its ability to charge a 30% commission on in-app purchases.

We do not see changes in the other practices cited above as impactful. Cloud gaming is not a dispositive factor when choosing a phone, and cross-platform messaging platforms like WhatsApp already exist. As for smartwatches, Apple maintains roughly 22% of the \$44.2 smartwatch market.^{9,27} Smartwatch sales are expected to grow at a CAGR of 7.2% through 2028.⁹ Greater interoperability may invite competition, but foregone sales will be immaterial as a percentage of total sales.

Epic Games: In 2020, Epic Games, maker of Fortnite, filed a lawsuit against Apple, accusing the company of anticompetitive behavior.²⁸ The chief issue was Apple's mandatory 30% collection fee on in-app purchases. Epic sought to circumvent the tax by introducing a link directing its customers to Epic's marketplace. Legal proceedings ensued after Apple removed Fortnite from the App Store for violating its terms and conditions. The district court largely ruled in Apple's favor, finding it did not have monopolistic power. The court ruled that Apple cannot prevent developers from steering users to alternative marketplaces. The US Ninth Circuit Court of Appeals recently upheld the lower court's ruling, and the Supreme Court denied Epic's appeal. Importantly, Epic's legal battle with Apple focused on the digital mobile gaming transactions market. The DOJ's complaint is much broader, making Apple a monopolist in the smartphone and performance smartphone markets.

European Union (EU) Regulations

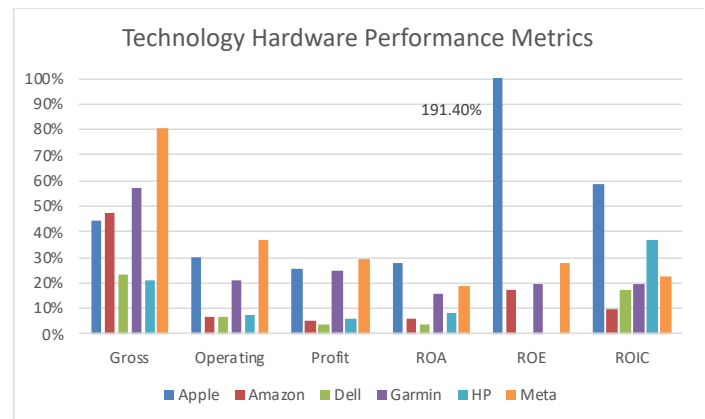
The EU recently passed the Digital Markets Act (DMA). The DMA seeks to reign in the power of "gatekeepers" or large firms that act as intermediaries between businesses and customers.¹⁰ Apple is a gatekeeper under the DMA. Accordingly, it must adhere to specific regulations adverse to its profitability. Specifically, Apple is constrained from favoring its offerings over those of third parties; it cannot obstruct consumers' interactions with external businesses, nor can it impede the removal of pre-installed applications.¹⁰ Moreover, Apple must ensure interoperability with third-party services in specific contexts; Apple must grant businesses access to the data generated on its platforms; and Apple must provide advertisers with autonomous tools to validate the effectiveness of their advertisements. Apple must also permit businesses to engage in transactions and promotions outside its ecosystem.¹⁰ Introducing third-party app stores could affect services revenue in the EU.

MARKETS AND COMPETITION

Technology Hardware

Tech hardware category comprises desktops, laptops, smartphones, smartwatches, and tablets. Dell and HP primarily sell desktops and laptop hardware. Garmin focuses on smartwatches and GPS hardware.

A significant portion of hardware manufacturing is outsourced to third parties. The outsourcing model requires fewer physical assets and raises profitability. A significant percentage of manufacturing and the supply chain occur in foreign countries. All firms are exposed to supply chain risk, especially in geopolitically sensitive areas such as China, South Korea, and Taiwan.



Source: FactSet

We attribute Apple’s outsized relative performance to its software offerings. Many of the firms in the peer group either lack a software arm, or software remains marginal to the overall business. Supporting this notion is the comparable performance of Meta, which is primarily a software business.

Apple’s relatively large ROE is the byproduct of its stock-repurchase and dividend payout plans. Over the last five years, the company spent \$392.2 billion in share repurchases and \$72.5 billion in dividends. We expect Apple’s equity account to replenish with ROE settling at 42.0% by 2033.

Regarding competitive threats, the metrics suggest that the other companies do not immediately threaten Apple’s profitability. However, HP shows a strong ROIC at 37.0%, indicating that it uses its invested capital effectively, which

Should Apple violate the DMA, it would likely incur substantial penalties, calculated based on its turnover or the total revenue generated from its normal business activities annually. The company could incur fines up to 10% of this turnover for initial infringements, escalating to 20% for repeated violations.²⁵ Additionally, periodic penalty payments may be imposed, amounting to up to 5% of Apple’s average daily turnover, to enforce compliance.²⁵

INDUSTRY TRENDS

Supply Chain

Like many technology firms, Apple relies on third-party manufacturers and a vast supply chain to build its hardware products. Supply chain links tend to concentrate in China and Taiwan, especially for semiconductors. Some outlets indicate China accounts for 90% of all Apple products produced. Geopolitical tensions and pandemic disruptions have exposed the fragility of this supply chain to risks beyond the industry’s control. To diversify manufacturing, Apple and other tech firms are investing heavily in India and Vietnam.¹¹ While inflationary in the short to medium term, moving supply chains to friendlier nations in safer neighborhoods is a long-term advantage. To account for the China decoupling, we added 50 basis points to the three-year average COGS for products in our forecast.

Generative AI

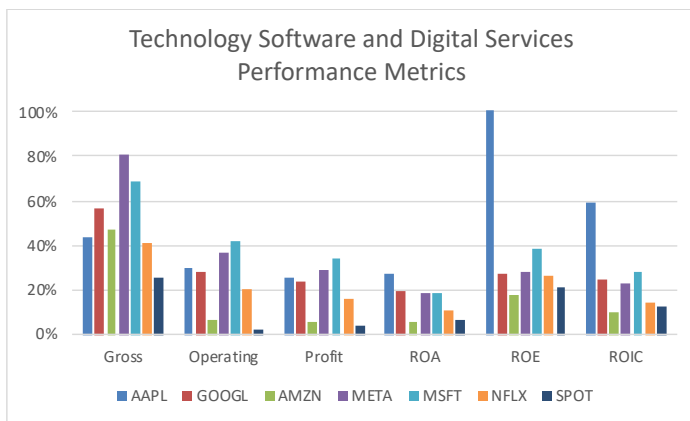
Today, the most useful application of artificial intelligence is generative AI, a form of AI that responds to natural language inputs to generate new content, including text, images, audio, and video. Large language models (LLMs) such as ChatGPT fall into this category. Natural language is the next step forward in computer software and will overtake graphical user interfaces (GUIs) in the same way GUIs obsoleted command-line interfaces. We expect Apple to adopt AI and LLMs into its Siri voice assistant and other applications. LLMs’ knowledge base and capacities are a natural synergy for the digital assistant. Recent reports indicate Apple is negotiating with Google to license its Gemini LLM model.¹² Generative AI will also likely make its way to the macOS and the Vision platform. We expect Vision devices to incorporate AI to give users contextual information about the world around them using the device’s suite of cameras and sensors.

could signify strong strategic positioning and potential competitive strength over the long term.

Technology Software and Digital Services

Technology software includes PC and mobile operating systems, as well as computer, internet, and mobile applications. Digital services comprise various sorts of digital subscriptions like music or video streaming.

The PC operating system market is a duopoly between Microsoft’s Windows and Apple’s macOS. The smartphone is also a duopoly, with Apple competing against Alphabet’s Android. Meta and Alphabet compete with Apple for advertising revenue. Lastly, Amazon, Netflix, and Spotify are alternatives to Apple TV+ and Apple Music.



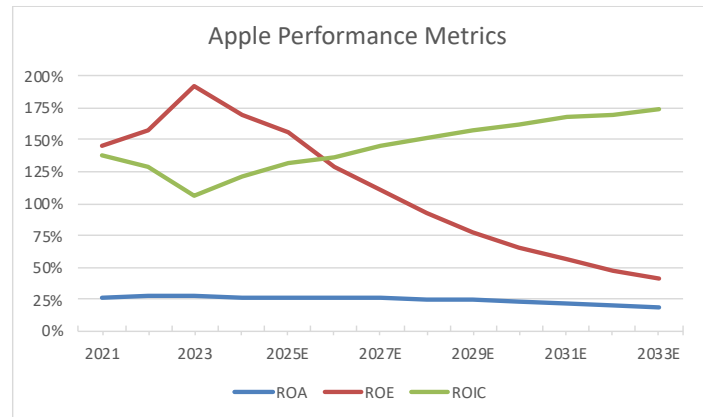
Source: FactSet

Unlike hardware, software is an easily scalable high margin business. That said, content-driven companies like Netflix and Spotify appear to lag behind other software firms in most operating metrics. This is likely due to expensive and often risky content acquisition costs. Apple does not publish its streaming financials in detail, but content costs may explain the recent uptick in overall services costs. Gross margins for services decreased from 71.7% to 70.8% YoY.

Apple’s relatively large ROE is the byproduct of its stock-repurchase and dividend payout plans. Over the last five years, the company spent \$392.2 billion in share repurchases and \$72.5 billion in dividends. We expect Apple’s equity account to replenish with ROE settling at 43% by 2033.

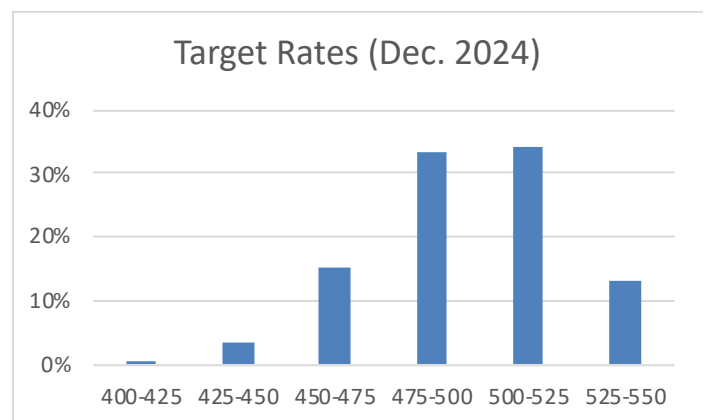
Forecasted Margins

We expect ROIC to improve over the forecasted period. The driving force is Apple’s captally efficient services business. Declining ROA stems from Apple’s increasing cash position over the forecasted period. Data values in the following chart are found in the Ratios section of the attached Appendix.



ECONOMIC OUTLOOK

Inflation: The economic outlook for the United States is affected by inflationary pressures and the Federal Reserve's monetary policy responses. The surge in inflation to 9.1% in 2022 led to a series of rapid interest rate hikes by the Fed. Recent commentary by Fed Chair Jerome Powell suggests cuts will arrive by the end of the year. While promising, the market is overestimating the rate of reductions. As seen below, the tail of market expectations suggests multiple rate cuts. This is too optimistic. In the best-case scenario, we believe the Fed will cut rates only once in 2024.



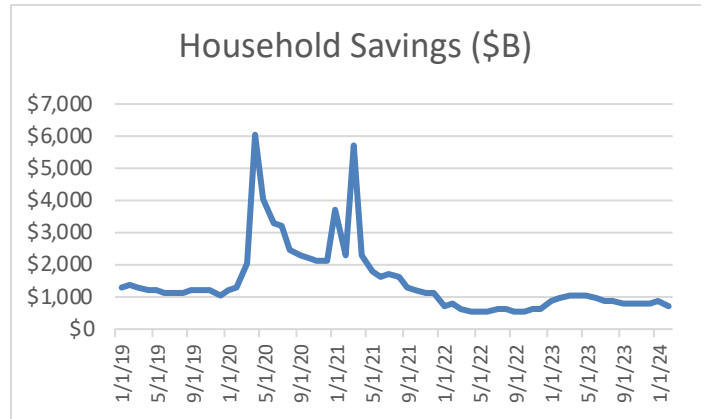
Source: CMEGroup

Factors such as a robust labor market, increased government spending, and evolving global supply chains are likely to maintain inflation at persistently high levels, warranting an extended period of elevated interest rates. Recent data from March’s CPI report provides credence to this theory, with inflation rising 3.5%.¹⁸

Sustained inflation may impact Apple by increasing production costs, potentially squeezing profit margins or resulting in higher prices for its devices. Higher prices could lower consumer demand, particularly in more price-sensitive markets. Apple’s global operations might also face varying impacts due to different inflation rates across countries. In the long term, inflation could force Apple to adjust its strategic pricing and cost management practices to maintain profitability and market position.

Consumer Spending: The United States economy appears resilient despite the highest interest rate environment in nearly 20 years.¹³ Employment remains below 4%, the S&P 500 is reaching all-time highs, and the economy expanded 2.5% in 2023.^{14,15,16} While seemingly positive, certain headwinds should caution investor sentiment. One concern is consumer spending, the primary driver of recent US GDP growth.¹⁶ We believe much of this spending draws from stimulus checks and excess earnings saved during the pandemic. As seen in the graphic below, lockdowns and government stimulus boosted total household savings to \$5.7 trillion in 2021.¹⁷ As of early 2024, the trendline shows households steadily depleting these reserves down to \$745.7 billion.

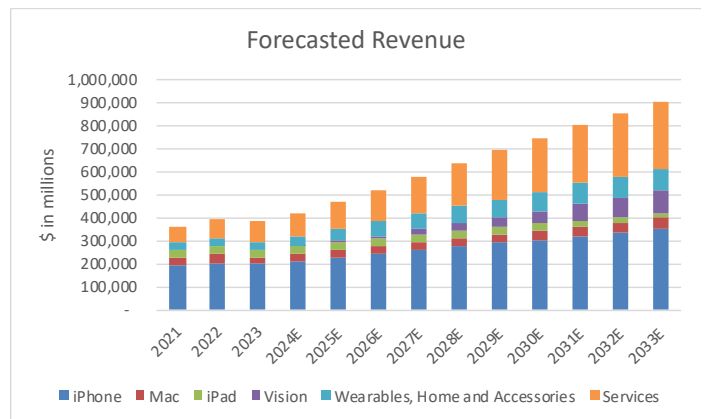
As savings shrink, consumers must either pull back on spending or use debt to sustain their behavior. In the long term, neither is sustainable. A weakening American consumer may bring the US into recession. As a consumer products and services company, this type of weakness would likely have a material impact on Apple’s business and overall profitability.



Source: [FRED \(St. Louis Fed\)](#)

VALUATION

Revenue Decomposition



iPhone: The iPhone is Apple’s flagship product and primary revenue driver. We expect this trend to continue over the forecasted period, albeit as a lesser percentage of total sales. Our forecast assumes a CAGR of 5.8%, with growth moderating towards the terminal period. Insights from 2021 (the latest year of data) indicate that 34% of active iPhones are at least three years old.¹⁹ Apple’s strategy to ensure new software remains compatible with older models also extends the usable lifespan of its devices. Aside from diminishing battery life, there is minimal incentive for users to upgrade their iPhones more than once every few years.

While slowing, we expect future growth to remain positive. The iPhone remains the nexus of the Apple ecosystem, and synergies with the Vision platform will drive sales. While confident in the future of spatial computing, the iPhone is poised to remain the center of one’s digital life and Apple’s flagship offering.

	2024E	2025E	2026E	2027E	2028E
Henry Fund	7.0%	7.0%	7.0%	6.0%	6.0%
Consensus	-0.9%	4.5%	2.5%	-	-
Net	+7.9%	+2.5%	+4.5%	-	-

Source: [FactSet](#)

Mac: Mac sales are expected to grow steadily at a CAGR of 4.3% through 2033. Our moderate growth reflects the maturity of laptop and desktop computers. Our model assumes slowing growth rates starting in 2029 to reflect greater adoption of Vision devices. While not a direct substitute, Apple's Vision platform will likely cannibalize some Mac sales. Users who otherwise would buy a Mac for word processing, internet browsing, and other basic tasks are prime targets. Nevertheless, Mac computers remain useful for resource-intensive tasks such as video editing, graphic design, and other professional tasks.

	2024E	2025E	2026E	2027E	2028E
Henry Fund	5.0%	5.0%	5.0%	5.0%	5.0%
Consensus	1.2%	3.9%	5.2%	-	-
Net	+3.8%	+1.1%	-0.2%	-	-

Source: [FactSet](#)

iPad: iPad sales will peak in 2027 and continually decline as a percentage of total sales. Our reasoning centers on creative destruction. For most, the primary benefit of a tablet is its larger screen, which makes it the premier mobile device for productivity and media consumption. The advent of Apple's Vision platform is eroding this competitive advantage. Through AR/VR technology, users can project large digital windows as large as their field of view. Moreover, Vision users can display multiple windows in a 360-degree frame of reference. The iPad's fixed display cannot compete with this level of immersion. Accordingly, the Vision platform is superior for media consumption and productivity. Additionally, the Vision Pro runs native iPad apps since its software is based mainly on iPadOS.

Exacerbating this march toward irrelevancy is the increasing size of the iPhone. First released in 2010, the iPad's 9.7-inch display was massive compared to the iPhone 4's 4-inch display, giving it obvious utility. This advantage is less prominent today, with the largest iPhone bolstering a 6.7-inch display.

One of the few advantages remaining is the iPad's stylus functionality. Professional creatives and students alike will likely continue to buy iPads for this purpose.

Our model projects a CAGR of -4.9% over the forecasted period. Projected growth rates are initially positive before turning negative in 2029 when Vision devices reach price parity with iPads. Given the advantages above, we believe users will abandon the tablet in favor of Apple's spatial computing platform.

	2024E	2025E	2026E	2027E	2028E
Henry Fund	8.0%	8.0%	4.0%	3.0%	0.0%
Consensus	-8.6%	2.9%	7.6%	-	-
Net	+16.6%	+5.1%	-3.6%	-	-

Source: [FactSet](#)

Vision: Vision Pro's growth rates are hard to project as a first-generation product without a sales history. To remedy this issue, our model uses estimates from Statista.²⁹ The forecasts run through 2028. Thereafter, we assume a decreasing average sales price reflecting the sale of newer and cheaper models. Unit volume increases with each price reduction. Our model assumes a terminal average selling price is \$1,000, and we project that 100 million devices will be sold. For reference, Apple sold 234 million iPhones, 64 million iPads, and 21 million Macs last year, according to FactSet. Our model projects a CAGR of 63.1% for Vision devices through 2033.

	2024E	2025E	2026E	2027E	2028E
Henry Fund	-	321%	74.0%	160%	28.4%
Consensus	-	-	-	-	-
Net	-	-	-	-	-

Source: [FactSet](#)

Wearables, Home and Accessories: This product category is directly tied to the success of Apple's other products. The iPhone is a necessary companion for an Apple Watch, and accessories are used with their compatible devices. We forecast steady growth above consensus estimates to reflect pent up demand for an expected AirPods refresh near the end of 2024.³⁰ The CAGR for this category is 8.3%.

	2024E	2025E	2026E	2027E	2028E
Henry Fund	12.0%	20.0%	15.0%	10.0%	8.0%
Consensus	-6.8%	7.2%	11.9%	-	-
Net	+18.8%	+12.8%	+3.1%	-	-

Source: [FactSet](#)

Services: Services are Apple's most profitable revenue stream. We deviate upwards from consensus numbers, reflecting our bullish attitudes toward Apple's services business. Our growth estimates rest on the stickiness of

Apple’s ecosystem. If users cannot flee, they will be stuck buying services from Apple.

While not projected in our model, recent antitrust litigation by the DOJ and new legislation introduced by the European Union may threaten this competitive moat, thereby hindering service sales. Apple’s partnership with Google and the 30% commission for in-app purchases made through the App Store are the most apparent threats. The CAGR for services through 2033E is 12.4%.

	2024E	2025E	2026E	2027E	2028E
Henry Fund	15.0%	15.0%	15.0%	15.0%	15.0%
Consensus	10.7%	10.2%	11.4%	-	-
Net	+4.3%	+4.8%	+3.6%	-	-

Source: [FactSet](#)

Operating Expenditures

Cost of Sales: Gross margin is calculated using the three-year average for cost of sales as a percentage of total sales. We add 50 basis points to COS for products to account for the decoupling of supply chains away from China. Products and services are calculated separately to reflect the growing share of services. Our assumptions include 48.9% for products, 5.6% for services, and 3.0% for depreciation and amortization.

R&D: As a technology firm, we expect Apple to continue to invest heavily in R&D. This is particularly true as it develops its next-generation Vision device. To forecast R&D costs, we used the three-year average as a percentage of sales. The number our model uses is 6.3%.

SG&A: Like COS and R&D, we employed the three-year average as a percentage of total sales. Our assumed SG&A expenditure is 6.8%.

Capital Expenditures

Management does not provide guidance for capital spending. Our model uses 2023’s capital outlay of \$11 billion and adjusts upward each year for inflation. 2024 capital expenditures are expected to be \$11.2 billion. Because Apple does not manufacture its products, we do not expect capital spending to differ substantially from past years.

Cost of Capital

The weighted average cost of capital (WACC) is 9.8%. Our WACC estimate incorporates the following assumptions:

- **Risk-Free Rate:** 4.2% – YTM 10Y US Treasury
- **Beta:** 1.17 – Average 1Y, 2Y, 3Y Weekly Beta (Bloomberg)
- **Equity Risk Premium:** 5.0% – HF Estimate
- **Cost of Equity:** 10.1% – CAPM
- **Equity Weight:** 95.9%
- **Pre-Tax Cost of Debt:** 4.8% YTM 10Y NVIDIA Bond
- **Marginal Tax Rate:** 16.0%
- **After-Tax Cost of Debt:** 4.1%
- **Debt Weight:** 4.1%

DCF/EP Model

Our DCF and EP models yielded a share price of \$180. The following assumptions were used:

- **CV Growth of NOPLAT:** 4.0%, reflecting Apple’s history of product development and innovation in disruptive industries, such as consumer electronics and technology
- **CV Year ROIC:** 174.5% using ROIC from the last forecasted fiscal year (2033E)

In valuing Apple, a high-growth tech company with a mix of hardware and software offerings, the DCF/EP model is our preferred measure. Unlike the relative valuation model, which struggles to categorize Apple strictly as hardware or software, the DCF model can value all cash flows equally.

Moreover, the DCF/EP approach is more fitting than the DDM, especially given Apple’s need for continual reinvestment to innovate and remain competitive. Where the DDM might undervalue the firm by focusing solely on dividends, the DCF/EP model recognizes the full scope of Apple’s reinvestment strategies in the dynamic technology industry.

At a current market price of \$168, investors can expect a 7.1% upside for owning Apple. Accordingly, we recommend a BUY rating.

Fundamental P/E Model (DDM)

The DDM estimates Apple's intrinsic value based on future dividend payments and growth prospects. We employed a 4.0% terminal EPS growth rate, ROE of 42.0%, and a cost of equity equaling 10.1%. Our model assumes a dividend payout of 15.2%, consistent with the three-year average payout. The model utilizes a projected P/E multiple of 14.9 in the terminal year (2033E). Together, these assumptions yield a discounted price of \$140 per share. Today's implied price is \$147. At current market prices, Apple is overvalued by 12.5% based on the DDM's price.

Relative Valuation (P/E) Model

Technology Hardware: The relative valuation model compares Apple against its technology hardware and technology software/digital services peers. Apple is at the intersection of both industries, incorporating proprietary hardware and software into its consumer offerings.

	AAPL	AMZN	DELL	GRMN	HPE	META
Mkt Cap	\$2.6 T	\$1.9 T	\$91 B	\$29 B	\$24 B	\$1.3 T
Trailing P/E	26	64	29	22	13	35
Frwd P/E	26	44	17	39	10	36
P/S	7	3	1	6	1	10
P/B	35	10	-	4	1	9
EV/EBITDA	20	22	13	21	7	22

Source: Yahoo! Finance

The market values technology hardware firms on a broad spectrum. Apple, Amazon, and Meta stand out with their trillion-dollar valuations and high growth expectations. Dell and Garmin share a middle ground with investors expecting future growth. Meanwhile, HP receives the most conservative valuation, suggesting slower expected growth. We believe these valuations are consistent with each firm's growth stage.

Unlike the rest, Apple, Amazon, and Meta sell digital services in addition to hardware. Dell and Garmin are better described as hardware companies with limited software offerings. Dell sells software solutions through a B2B model, whereas Garmin's software complements its GPS devices and is aimed at customers. HP is the purest hardware play. Its offerings primarily include desktop and laptop computers that run Windows.

Given its growth prospects and digital services arm, Apple deserves a premium valuation compared to more one-dimensional players such as Dell and HP. As such, the disparities in valuation should not give investors too much

pause. Apple is slightly cheaper than the premium investors are willing to pay for the likes of Amazon, Garmin, and Meta using EV/EBITDA. Additionally, while Apple's P/B appears relatively high compared to its peers, it results from an aggressive campaign by management to return capital to shareholders through dividends and share buybacks.

Relative P/E Model (Hardware): The relative valuation model uses the average price-to-earnings ratio for the technology hardware industry. The model employs each firm's price-to-earnings (P/E) ratios for 2025 and 2026 to determine Apple's fair price. Using this framework, Apple should trade at \$169 based on 2024 EPS and \$166 using 2025 EPS. These valuations are consistent with Apple's recent trading range. A summary chart is below.

	AAPL	AMZN	DELL	GRMN	HPE	META	AVG
P/E 24	24.5	44.4	16.3	26.8	9.6	25.9	24.6
P/E 25	21.1	34.4	14.4	24.0	8.8	22.4	20.8

Source: FactSet

Technology Software and Digital Services:

	AAPL	GOOGL	AMZN	META	MSFT	NFLX	SPOT
Mkt Cap	\$2.6T	\$2T	\$2T	\$1.3T	\$3.2T	\$272B	\$61B
Trailing P/E	26	27	64	35	38	52	-
Frwd P/E	26	23	44	26	32	37	98
P/S	7	7	3	10	14	8	4
P/B	35	7	10	9	13	13	22
EV/EBITDA	20	19	22	22	26	13	197

Source: Yahoo! Finance

Apple's closest comparison is Alphabet, likely due to its mobile OS and SaaS businesses. While seemingly high, Apple's P/B ratio is also a product of its aggressive capital return to shareholders. We expect P/B to normalize to industry norms as the equity account restocks. All other ratios are within the range of its software peers.

Relative P/E Model (Software and Digital Services): The relative valuation model using software and digital services companies yields a share price well above Apple's current market price. This makes sense, given approximately 80% of Apple's revenue is generated by hardware sales. Using the industry average P/E ratios, Apple should trade at \$277 based on 2024 EPS and \$255 using 2025 EPS. These prices are a rich premium compared to the current market price.

	AAPL	GOOGL	AMZN	META	MSFT	NFLX	SPOT	AVG
P/E 24	25	23	44	36	36	36	77	38
P/E 25	21	20	34	22	32	30	54	30

Source: FactSet

KEYS TO MONITOR

Digital Services Growth: Digital services underly many of our model's assumptions and serve as a primary growth driver. To justify our DCF/EP price of \$180 per share, Apple must continue growing its services business. Failure to do so would alter our investment thesis and reduce our valuation. Additionally, the segment's performance could be influenced by regulatory actions, especially concerning Apple's default search engine arrangement with Google and app marketplace practices. These regulatory challenges could affect Apple's ability to monetize its ecosystem's lock-in effects, potentially impacting the long-term growth trajectory of its services revenue.

Antitrust: Apple faces significant scrutiny that could affect its revenue streams. Monitoring outcomes of these litigations is crucial, as adverse rulings could force Apple to alter its business practices substantially, impacting the profitability of its services sector and its overall competitive position.

China Sales: China represents a crucial market for Apple, contributing significantly to its global revenue. However, it also poses unique challenges due to geopolitical tensions and local competition. Monitoring Apple's sales in China is important, especially as the Chinese government pushes for technological self-reliance. This initiative may affect iPhone sales and other Apple products, potentially reducing Apple's market share in this key region.

Vision: The Vision platform is a new product category for Apple. Monitoring the development, market adoption, and evolution of this platform is key. Factors such as technological advancements, pricing adjustments, and the expansion of the app ecosystem will likely influence its success.

SUMMARY

Apple's enduring legacy of innovation, coupled with its strategic pivot towards high-margin digital services, underpins our BUY recommendation, with a target price range set at \$170 – \$190. The company's seamless ecosystem, consisting of integrated hardware and software, not only enhances user experience, but also cements customer loyalty.

Looking forward, Apple's foray into spatial computing with its Vision platform, along with continued services portfolio

expansion, will drive significant growth and supplement softening iPhone sales.

Nevertheless, investing in Apple is not without its risks. The company's expansive global footprint and reliance on an intricate supply chain network expose it to geopolitical tensions beyond its control. Moreover, the evolving regulatory landscape, especially in key markets like the EU and the US, poses a challenge to Apple's services segment, potentially adversely impacting its margins.

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Apple Inc.

Revenue Decomposition

(\$ in millions)

Fiscal Years Ending September 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Product & Services Performance:													
iPhone	191,973	205,489	200,583	214,624	229,647	245,723	260,466	276,094	292,660	307,293	322,657	338,790	355,730
Growth Rate (%)	39%	7%	-2%	7.0%	7.0%	7.0%	6.0%	6.0%	6.0%	5.0%	5.0%	5.0%	5.0%
% of Total Revenue	52%	52%	52%	50.6%	48.5%	47.0%	44.8%	43.5%	42.2%	41.4%	40.1%	39.8%	39.3%
Mac	35,190	40,177	29,357	30,825	32,366	33,984	35,684	37,468	38,967	40,525	42,146	43,832	45,147
Growth Rate (%)	23%	14%	-27%	5.0%	5.0%	5.0%	5.0%	5.0%	4.0%	4.0%	4.0%	4.0%	3.0%
% of Total Revenue	10%	10%	8%	7.3%	6.8%	6.5%	6.1%	5.9%	5.6%	5.5%	5.2%	5.1%	5.0%
iPad	31,862	29,292	28,300	30,564	33,009	34,329	35,359	35,359	33,591	28,553	25,697	20,558	19,530
Growth Rate (%)	34%	-8%	-3%	8.0%	8.0%	4.0%	3.0%	0.0%	-5.0%	-15.0%	-10.0%	-20.0%	-5.0%
% of Total Revenue	9%	7%	7%	7.2%	7.0%	6.6%	6.1%	5.6%	4.8%	3.8%	3.2%	2.4%	2.2%
Vision	-	-	-	1,225	5,163	8,985	23,358	30,000	40,000	52,500	75,000	85,000	100,000
Growth Rate (%)	-	-	-	0.0%	321.4%	74.0%	160.0%	28.4%	33.3%	31.3%	42.9%	13.3%	17.6%
% of Total Revenue	0%	0%	0%	0.3%	1.1%	1.7%	4.0%	4.7%	5.8%	7.1%	9.3%	10.0%	11.0%
Wearables, Home and Accessories	38,367	41,241	39,845	44,626	53,552	61,584	67,743	73,162	77,552	82,205	85,493	88,913	91,581
Growth Rate (%)	25%	7%	-3%	12.0%	20.0%	15.0%	10.0%	8.0%	6.0%	6.0%	4.0%	4.0%	3.0%
% of Total Revenue	10%	10%	10%	10.5%	11.3%	11.8%	11.6%	11.5%	11.2%	11.1%	10.6%	10.4%	10.1%
Services	68,425	78,129	85,200	102,240	120,132	138,152	158,875	182,706	210,112	231,123	254,235	274,574	293,794
Growth Rate (%)	27.3%	14.2%	9.1%	20.0%	17.5%	15.0%	15.0%	15.0%	15.0%	10.0%	10.0%	8.0%	7.0%
% of Total Revenue	18.7%	19.8%	22.2%	24.1%	25.4%	26.4%	27.3%	28.8%	30.3%	31.1%	31.6%	32.2%	32.4%
Total Sales	365,817	394,328	383,285	424,104	473,869	522,758	581,484	634,789	692,881	742,199	805,229	851,667	905,781
Growth Rate (%)	33.3%	7.8%	-2.8%	10.6%	11.7%	10.3%	11.2%	9.2%	9.2%	7.1%	8.5%	5.8%	6.4%

Apple Inc.
Income Statement
(\$ in millions)

Fiscal Years Ending September 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Net sales:													
Products	297,392	316,199	298,085	321,864	353,737	384,606	422,610	452,084	482,770	511,076	550,994	577,093	611,987
Services	68,425	78,129	85,200	102,240	120,132	138,152	158,875	182,706	210,112	231,123	254,235	274,574	293,794
Total net sales	365,817	394,328	383,285	424,104	473,869	522,758	581,484	634,789	692,881	742,199	805,229	851,667	905,781
Cost of sales:													
Products	182,080	191,463	179,100	207,183	231,494	255,377	284,066	310,106	338,485	362,578	393,369	416,055	442,491
Services	19,618	20,979	23,518	23,776	26,566	29,307	32,600	35,588	38,845	41,610	45,143	47,747	50,781
Depreciation and amortization	11,284	11,104	11,519	9,920	10,218	10,512	10,805	11,098	11,393	11,692	11,995	12,303	12,617
Total cost of sales	212,982	223,546	214,137	240,879	268,278	295,196	327,470	356,792	388,723	415,879	450,508	476,105	505,888
Gross margin	152,835	170,782	169,148	183,225	205,591	227,562	254,014	277,997	304,158	326,319	354,722	375,562	399,893
Operating expenses:													
Research and development	21,914	26,251	29,915	26,683	29,814	32,890	36,585	39,939	43,594	46,697	50,663	53,584	56,989
Selling, general, and administrative	21,973	25,094	24,932	28,913	32,306	35,639	39,643	43,277	47,237	50,599	54,896	58,062	61,752
Total operating expenses	43,887	51,345	54,847	55,597	62,120	68,529	76,228	83,216	90,831	97,296	105,559	111,647	118,741
Operating income	108,948	119,437	114,301	127,628	143,470	159,032	177,786	194,781	213,327	229,023	249,163	263,916	281,152
Other income (expense):													
Interest and dividend income	2,843	2,825	3,750	3,090	4,351	5,939	7,950	10,339	13,360	17,396	21,890	27,385	33,386
Interest expense	(2,645)	(2,931)	(3,933)	(5,377)	(6,070)	(6,506)	(6,941)	(7,225)	(7,525)	(8,058)	(8,462)	(8,922)	(9,340)
Other income (expense), net	60	(228)	(382)	-	-	-	-	-	-	-	-	-	-
Total Other income (expense), net	258	(334)	(565)	(2,287)	(1,720)	(567)	1,009	3,114	5,835	9,338	13,428	18,463	24,047
Income before provision for income taxes	108,948	119,437	114,301	125,341	141,750	158,465	178,795	197,895	219,162	238,361	262,590	282,379	305,199
Provision for income taxes	14,527	19,300	16,741	20,055	22,680	25,354	28,607	31,663	35,066	38,138	42,014	45,181	48,832
Net income	94,679	99,803	96,995	105,287	119,070	133,110	150,188	166,232	184,096	200,223	220,576	237,198	256,367
Weighted common stock outstanding	16,701	16,216	15,744	15,335	14,927	14,543	14,160	13,795	13,461	13,156	12,878	12,624	12,392
Common stock outstanding, ending balances	16,427	15,943	15,550	15,120	14,734	14,351	13,969	13,620	13,302	13,011	12,745	12,502	12,281
Earnings per share	\$ 5.67	\$ 6.15	\$ 6.16	\$ 6.87	\$ 7.98	\$ 9.15	\$ 10.61	\$ 12.05	\$ 13.68	\$ 15.22	\$ 17.13	\$ 18.79	\$ 20.69
Cash dividends declared and paid per share	\$ 0.85	\$ 0.90	\$ 0.94	\$ 1.04	\$ 1.21	\$ 1.39	\$ 1.61	\$ 1.83	\$ 2.08	\$ 2.31	\$ 2.60	\$ 2.85	\$ 3.14

Apple Inc.
Balance Sheet
(\$ in millions)

Fiscal Years Ending September 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
ASSETS													
Current assets:													
Cash and cash equivalents	34,940	23,646	29,965	53,490	83,462	121,783	167,522	225,786	304,161	391,542	498,776	615,975	750,645
Marketable securities	27,699	24,658	31,590	33,176	34,841	36,590	38,427	40,356	42,382	44,510	46,744	49,091	51,555
Accounts receivable, net	26,278	28,184	29,508	31,143	34,797	38,387	42,699	46,613	50,879	54,501	59,129	62,539	66,513
Vendor non-trade receivables	25,228	32,748	31,477	33,099	36,983	40,799	45,382	49,542	54,076	57,925	62,844	66,468	70,692
Inventories	6,580	4,946	6,331	6,331	9,320	10,282	11,437	12,486	13,628	14,598	15,838	16,751	17,816
Other current assets	14,111	21,223	14,695	15,433	16,207	17,021	17,875	18,773	19,715	20,705	21,744	22,836	23,982
Total current assets	134,836	135,405	143,566	172,672	215,611	264,862	323,343	393,556	484,842	583,780	705,075	833,660	981,203
Non-current assets:													
Marketable securities	127,877	120,805	100,544	105,591	110,892	116,459	122,305	128,445	134,893	141,664	148,776	156,244	164,088
Property, plant and equipment, net	39,440	42,117	43,715	45,028	46,323	47,613	48,904	50,206	51,521	52,856	54,214	55,597	57,009
Operating lease assets (ROU)	10,870	10,417	10,661	10,981	11,297	11,612	11,927	12,244	12,565	12,890	13,221	13,559	13,903
Other non-current assets	37,979	44,011	54,097	56,813	59,665	62,660	65,805	69,109	72,578	76,221	80,048	84,066	88,286
Total non-current assets	216,166	217,350	209,017	218,413	228,177	238,343	248,941	260,003	271,557	283,632	296,259	309,467	323,286
Total assets	351,002	352,755	352,583	391,084	443,788	503,205	572,284	653,559	756,399	867,413	1,001,334	1,143,127	1,304,489
LIABILITIES AND SHAREHOLDERS' EQUITY													
Current liabilities:													
Accounts payable	54,763	64,115	62,611	67,241	75,131	82,883	92,194	100,645	109,856	117,675	127,668	135,031	143,611
Other current liabilities	47,493	60,845	58,829	61,865	69,124	76,255	84,822	92,598	101,072	108,265	117,460	124,234	132,128
Deferred revenue	7,612	7,912	8,061	8,751	9,778	10,787	11,999	13,099	14,297	15,315	16,616	17,574	18,691
Commercial paper	6,000	9,982	5,985	9,563	10,603	11,480	12,502	13,461	14,497	15,424	16,553	17,466	18,499
Current portion of long-term debt	9,613	11,128	9,822	9,943	10,775	12,265	9,786	7,800	10,114	10,114	10,114	10,114	10,114
Total current liabilities	125,481	153,982	145,308	157,363	175,412	193,670	211,303	227,603	249,836	266,794	288,410	304,419	323,042
Non-current liabilities:													
Long-term debt	109,106	98,959	95,281	105,918	113,050	119,668	126,991	134,211	141,886	149,301	157,674	165,390	173,765
Other non-current liabilities	53,325	49,142	49,848	51,094	52,372	53,681	55,023	56,398	57,808	59,254	60,735	62,253	63,810
Total non-current liabilities	162,431	148,101	145,129	157,012	165,421	173,349	182,014	190,609	199,695	208,555	218,409	227,644	237,574
Total liabilities	287,912	302,083	290,437	314,375	340,833	367,019	393,317	418,212	449,530	475,348	506,820	532,062	560,616
Shareholders' equity:													
Common stock and additional paid in capital	57,365	64,849	73,812	83,598	93,383	98,276	98,276	98,276	98,276	98,276	98,276	98,276	98,276
Retained earnings (Accumulated Deficit)	5,562	(3,068)	(214)	4,564	21,024	49,362	92,144	148,523	220,044	305,240	407,691	524,241	657,049
Accumulated other comprehensive income (loss)	163	(11,109)	(11,452)	(11,452)	(11,452)	(11,452)	(11,452)	(11,452)	(11,452)	(11,452)	(11,452)	(11,452)	(11,452)
Total shareholders' equity	63,090	50,672	62,146	76,710	102,955	136,186	178,967	235,347	306,868	392,064	494,515	611,065	743,873
Total liabilities and shareholders' equity	351,002	352,755	352,583	391,084	443,788	503,205	572,284	653,559	756,399	867,413	1,001,334	1,143,127	1,304,489

Apple Inc.

Historical Cash Flow Statement

(\$ in millions)

Fiscal Years Ending September 30	2019	2020	2021	2022	2023
Cash, cash equivalents and restricted cash, beginning balances	25,913	50,224	39,789	35,929	24,977
Net income (loss)	55,256	57,411	94,680	99,803	96,995
Operating activities:					
Depreciation and amortization	12,547	11,056	11,284	11,104	11,519
Share-based compensation expense	6,068	6,829	7,906	9,038	10,833
Deferred income tax expense (benefit)	(340)	(215)	(4,774)	895	-
Other adjustments	(652)	(97)	(147)	111	(2,227)
Changes in operating assets and liabilities:					
Accounts receivable, net	245	6,917	(10,125)	(1,823)	(1,688)
Vendor non-trade receivables	2,931	1,553	(3,903)	(7,520)	1,271
Inventories	(289)	(127)	(2,642)	1,484	(1,618)
Other current and non-current assets	(4,700)	8,916	5,799	5,632	3,031
Cash generated by operating activities	69,391	80,674	104,038	122,151	110,543
Investing activities:					
Purchases of marketable securities	(39,630)	(114,938)	(109,558)	(76,923)	-
Proceeds from maturities of marketable securities	40,102	69,918	59,023	29,917	39,686
Proceeds from sales of marketable securities	56,988	50,473	47,460	37,446	5,828
Payments for acquisition of property, plant and equipment	(10,495)	(7,309)	(11,085)	(10,708)	(10,959)
Payments made in connection with business acquisitions, net	(624)	(1,524)	(33)	(306)	-
Purchases of non-marketable securities	(1,001)	(210)	(131)	-	(29,513)
Proceeds from non-marketable securities	1,634	92	387	-	-
Other	(1,078)	(791)	(608)	(1,780)	(1,337)
Cash generated by (used in) investing activities	45,896	(4,289)	(14,545)	(22,354)	3,705
Financing activities:					
Payments for taxes related to net share settlement of equity awards	(2,817)	(3,634)	(6,556)	(6,223)	(5,431)
Payments for dividends and dividend equivalents	(14,119)	(14,081)	(14,467)	(14,841)	(15,025)
Repurchases of common stock	(66,897)	(72,358)	(85,971)	(89,402)	(77,550)
Proceeds from issuance of term debt, net	6,963	16,091	20,393	5,465	5,228
Repayments of term debt	(8,805)	(12,629)	(8,750)	(9,543)	(11,151)
Proceeds from (repayments of) commercial paper, net	(5,977)	(963)	1,022	3,955	(3,978)
Other	(105)	(126)	976	(160)	(581)
Cash used in financing activities	(91,757)	(87,700)	(93,353)	(110,749)	(108,488)
Increase (decrease) in cash, cash equivalents and restricted cash	24,311	(10,435)	(3,860)	(10,952)	5,760
Cash, cash equivalents and restricted cash, ending balances	50,224	39,789	35,929	24,977	30,737
Supplemental cash flow disclosure:					
Cash paid for income taxes, net	15,263	9,501	25,385	19,573	18,679
Cash paid for interest	3,423	3,002	2,687	2,865	3,803

Apple Inc.

Forecasted Cash Flow Statement

(\$ in millions)

Fiscal Years Ending September 30	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Cash & cash equivalents at beginning of period	29,965	53,490	83,462	121,783	167,522	225,786	304,161	391,542	498,776	615,975
CASH FLOWS FROM OPERATING ACTIVITIES										
Net income	105,287	119,070	133,110	150,188	166,232	184,096	200,223	220,576	237,198	256,367
Adjustments to reconcile net income to cash from operating activities:										
Depreciation and amortization	9,920	10,218	10,512	10,805	11,098	11,393	11,692	11,995	12,303	12,617
Adjustments from Operating Activities:										
Accounts receivable, net	(1,635)	(3,654)	(3,590)	(4,312)	(3,914)	(4,266)	(3,621)	(4,628)	(3,410)	(3,974)
Vendor non-trade receivables	(1,622)	(3,884)	(3,816)	(4,583)	(4,160)	(4,534)	(3,849)	(4,919)	(3,624)	(4,223)
Inventories	0	(2,990)	(962)	(1,155)	(1,048)	(1,143)	(970)	(1,240)	(913)	(1,064)
Other current assets	(738)	(775)	(814)	(854)	(897)	(942)	(990)	(1,039)	(1,092)	(1,146)
Other non-current assets	(2,716)	(2,852)	(2,995)	(3,146)	(3,303)	(3,469)	(3,643)	(3,826)	(4,018)	(4,220)
Accounts payable	4,630	7,890	7,751	9,311	8,452	9,210	7,819	9,993	7,363	8,580
Deferred revenue	690	1,027	1,009	1,212	1,100	1,199	1,018	1,301	958	1,117
Other current liabilities	3,036	7,259	7,132	8,566	7,776	8,474	7,194	9,194	6,774	7,894
Other non-current liabilities	1,246	1,277	1,309	1,342	1,376	1,410	1,445	1,481	1,518	1,556
Net Cash from Operating Activities	118,100	132,588	148,648	167,373	182,709	201,429	216,318	238,887	253,057	273,503
INVESTING CASH FLOWS										
Adjustments from Investment Activities:										
Plant, property and equipment, gross	(11,233)	(11,514)	(11,802)	(12,097)	(12,399)	(12,709)	(13,027)	(13,352)	(13,686)	(14,028)
Commercial paper	(320)	(316)	(314)	(315)	(317)	(321)	(326)	(331)	(337)	(344)
Marketable securities (current)	(1,586)	(1,665)	(1,749)	(1,837)	(1,929)	(2,026)	(2,128)	(2,234)	(2,347)	(2,464)
Marketable securities	(5,047)	(5,301)	(5,567)	(5,846)	(6,140)	(6,448)	(6,772)	(7,112)	(7,469)	(7,843)
Net Cash from Investing Activities	(18,186)	(18,796)	(19,432)	(20,095)	(20,785)	(21,504)	(22,252)	(23,030)	(23,839)	(24,681)
FINANCING CASH FLOWS										
Adjustments from Financing Activities:										
Commercial paper	3,578	1,041	877	1,022	959	1,036	927	1,128	914	1,033
Term debt (current)	121	832	1,490	(2,479)	(1,986)	2,314	-	-	-	-
Term debt	10,637	7,132	6,619	7,323	7,220	7,676	7,415	8,373	7,716	8,374
Repurchase of common stock	(84,308)	(84,308)	(84,308)	(84,308)	(84,308)	(84,308)	(84,308)	(84,308)	(84,308)	(84,308)
Change in common stock account	9,786	9,786	4,893	-	-	-	-	-	-	-
Dividends paid	(16,201)	(18,303)	(20,465)	(23,098)	(25,545)	(28,267)	(30,720)	(33,818)	(36,341)	(39,251)
Net Cash from Financing Activities	(76,388)	(83,820)	(90,894)	(101,540)	(103,660)	(101,550)	(106,685)	(108,624)	(112,019)	(114,152)
Cash & cash equivalents at end of period	53,490	83,462	121,783	167,522	225,786	304,161	391,542	498,776	615,975	750,645

Apple Inc.

Common Size Income Statement

% of Sales

Fiscal Years Ending September 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Net sales:													
Products	81.30%	80.19%	77.77%	75.89%	74.65%	73.57%	72.68%	71.22%	69.68%	68.86%	68.43%	67.76%	67.56%
Services	18.70%	19.81%	22.23%	24.11%	25.35%	26.43%	27.32%	28.78%	30.32%	31.14%	31.57%	32.24%	32.44%
Total net sales	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:													
Products	49.77%	48.55%	46.73%	48.85%	48.85%	48.85%	48.85%	48.85%	48.85%	48.85%	48.85%	48.85%	48.85%
Services	5.36%	5.32%	6.14%	5.61%	5.61%	5.61%	5.61%	5.61%	5.61%	5.61%	5.61%	5.61%	5.61%
Depreciation and amortization	3.08%	2.82%	3.01%	2.34%	2.16%	2.01%	1.86%	1.75%	1.64%	1.58%	1.49%	1.44%	1.39%
Total cost of sales	58.22%	56.69%	55.87%	56.80%	56.61%	56.47%	56.32%	56.21%	56.10%	56.03%	55.95%	55.90%	55.85%
Gross margin	41.78%	43.31%	44.13%	43.20%	43.39%	43.53%	43.68%	43.79%	43.90%	43.97%	44.05%	44.10%	44.15%
Operating expenses:													
Research and development	5.99%	6.66%	7.80%	6.29%	6.29%	6.29%	6.29%	6.29%	6.29%	6.29%	6.29%	6.29%	6.29%
Selling, general, and administrative	6.01%	6.36%	6.50%	6.82%	6.82%	6.82%	6.82%	6.82%	6.82%	6.82%	6.82%	6.82%	6.82%
Total operating expenses	12.00%	13.02%	14.31%	13.11%	13.11%	13.11%	13.11%	13.11%	13.11%	13.11%	13.11%	13.11%	13.11%
Operating income	29.78%	30.29%	29.82%	30.09%	30.28%	30.42%	30.57%	30.68%	30.79%	30.86%	30.94%	30.99%	31.04%
Other income (expense):													
Interest and dividend income	0.78%	0.72%	0.98%	0.73%	0.92%	1.14%	1.37%	1.63%	1.93%	2.34%	2.72%	3.22%	3.69%
Interest expense	-0.72%	-0.74%	-1.03%	-1.27%	-1.28%	-1.24%	-1.19%	-1.14%	-1.09%	-1.09%	-1.05%	-1.05%	-1.03%
Other income (expense), net	0.02%	-0.06%	-0.10%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Total Other income (expense), net	0.07%	-0.08%	-0.15%	-0.54%	-0.36%	-0.11%	0.17%	0.49%	0.84%	1.26%	1.67%	2.17%	2.65%
Income before provision for income taxes	29.78%	30.29%	29.82%	29.55%	29.91%	30.31%	30.75%	31.17%	31.63%	32.12%	32.61%	33.16%	33.69%
Provision for income taxes	3.97%	4.89%	4.37%	4.73%	4.79%	4.85%	4.92%	4.99%	5.06%	5.14%	5.22%	5.30%	5.39%
Net income	25.88%	25.31%	25.31%	24.83%	25.13%	25.46%	25.83%	26.19%	26.57%	26.98%	27.39%	27.85%	28.30%

Apple Inc.
Common Size Balance Sheet
% of Sales

Fiscal Years Ending September 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
ASSETS													
Current assets:													
Cash and cash equivalents	9.55%	6.00%	7.82%	12.61%	17.61%	23.30%	28.81%	35.57%	43.90%	52.75%	61.94%	72.33%	82.87%
Marketable securities	7.57%	6.25%	8.24%	7.82%	7.35%	7.00%	6.61%	6.36%	6.12%	6.00%	5.81%	5.76%	5.69%
Accounts receivable, net	7.18%	7.15%	7.70%	7.34%	7.34%	7.34%	7.34%	7.34%	7.34%	7.34%	7.34%	7.34%	7.34%
Vendor non-trade receivables	6.90%	8.30%	8.21%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%	7.80%
Inventories	1.80%	1.25%	1.65%	1.49%	1.97%	1.97%	1.97%	1.97%	1.97%	1.97%	1.97%	1.97%	1.97%
Other current assets	3.86%	5.38%	3.83%	3.64%	3.42%	3.26%	3.07%	2.96%	2.85%	2.79%	2.70%	2.68%	2.65%
Total current assets	36.86%	34.34%	37.46%	40.71%	45.50%	50.67%	55.61%	62.00%	69.97%	78.66%	87.56%	97.89%	108.33%
Non-current assets:													
Marketable securities	34.96%	30.64%	26.23%	24.90%	23.40%	22.28%	21.03%	20.23%	19.47%	19.09%	18.48%	18.35%	18.12%
Property, plant and equipment, net	10.78%	10.68%	11.41%	10.62%	9.78%	9.11%	8.41%	7.91%	7.44%	7.12%	6.73%	6.53%	6.29%
Other non-current assets	10.38%	11.16%	14.11%	13.40%	12.59%	11.99%	11.32%	10.89%	10.47%	10.27%	9.94%	9.87%	9.75%
Total non-current assets	59.09%	55.12%	54.53%	51.50%	48.15%	45.59%	42.81%	40.96%	39.19%	38.22%	36.79%	36.34%	35.69%
Total assets	95.95%	89.46%	91.99%	92.21%	93.65%	96.26%	98.42%	102.96%	109.17%	116.87%	124.35%	134.22%	144.02%
LIABILITIES AND SHAREHOLDERS' EQUITY													
Current liabilities:													
Accounts payable	14.97%	16.26%	16.34%	15.85%	15.85%	15.85%	15.85%	15.85%	15.85%	15.85%	15.85%	15.85%	15.85%
Other current liabilities	12.98%	15.43%	15.35%	14.59%	14.59%	14.59%	14.59%	14.59%	14.59%	14.59%	14.59%	14.59%	14.59%
Deferred revenue	2.08%	2.01%	2.10%	2.06%	2.06%	2.06%	2.06%	2.06%	2.06%	2.06%	2.06%	2.06%	2.06%
Commercial paper	1.64%	2.53%	1.56%	2.25%	2.24%	2.20%	2.15%	2.12%	2.09%	2.08%	2.06%	2.05%	2.04%
Term debt	2.63%	2.82%	2.56%	2.34%	2.27%	2.35%	1.68%	1.23%	1.46%	1.36%	1.26%	1.19%	1.12%
Total current liabilities	34.30%	39.05%	37.91%	37.10%	37.02%	37.05%	36.34%	35.85%	36.06%	35.95%	35.82%	35.74%	35.66%
Non-current liabilities:													
Term debt	29.83%	25.10%	24.86%	24.97%	23.86%	22.89%	21.84%	21.14%	20.48%	20.12%	19.58%	19.42%	19.18%
Other non-current liabilities	14.58%	12.46%	13.01%	12.05%	11.05%	10.27%	9.46%	8.88%	8.34%	7.98%	7.54%	7.31%	7.04%
Total non-current liabilities	44.40%	37.56%	37.86%	37.02%	34.91%	33.16%	31.30%	30.03%	28.82%	28.10%	27.12%	26.73%	26.23%
Total liabilities	78.70%	76.61%	75.78%	74.13%	71.93%	70.21%	67.64%	65.88%	64.88%	64.05%	62.94%	62.47%	61.89%
Shareholders' equity:													
Common stock and additional paid in capital	15.68%	16.45%	19.26%	19.71%	19.71%	18.80%	16.90%	15.48%	14.18%	13.24%	12.20%	11.54%	10.85%
Retained earnings (aka Accumulated Deficit)	1.52%	-0.78%	-0.06%	1.08%	4.44%	9.44%	15.85%	23.40%	31.76%	41.13%	50.63%	61.55%	72.54%
Accumulated other comprehensive loss	0.04%	-2.82%	-2.99%	-2.70%	-2.42%	-2.19%	-1.97%	-1.80%	-1.65%	-1.54%	-1.42%	-1.34%	-1.26%
Total shareholders' equity	17.25%	12.85%	16.21%	18.09%	21.73%	26.05%	30.78%	37.07%	44.29%	52.82%	61.41%	71.75%	82.12%
Total liabilities and shareholders' equity	95.95%	89.46%	91.99%	92.21%	93.65%	96.26%	98.42%	102.96%	109.17%	116.87%	124.35%	134.22%	144.02%

Apple Inc.
Value Driver Estimation
(\$ in millions)

Fiscal Years Ending September 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
NOPLAT:													
EBITDA:													
Net Sales	365,817	394,328	383,285	424,104	473,869	522,758	581,484	634,789	692,881	742,199	805,229	851,667	905,781
(-) Cost of sales	201,698	212,442	202,618	230,959	258,060	284,684	316,665	345,694	377,330	404,187	438,513	463,802	493,271
(-) Depreciation and amortization	11,284	11,104	11,519	9,920	10,218	10,512	10,805	11,098	11,393	11,692	11,995	12,303	12,617
(-) Research and development	21,914	26,251	29,915	26,683	29,814	32,890	36,585	39,939	43,594	46,697	50,663	53,584	56,989
(-) Selling, general, and administrative	21,973	25,094	24,932	28,913	32,306	35,639	39,643	43,277	47,237	50,599	54,896	58,062	61,752
(+) Implied interest on operating leases	526	504	516	516	531	547	562	577	593	608	624	640	656
EBITDA	109,474	119,941	114,817	128,144	144,002	159,579	178,348	195,359	213,919	229,631	249,787	264,556	281,809
Marginal Tax Rate	20.2%	20.2%	20.2%	20.2%	20.2%	20.2%	20.2%	20.2%	20.2%	20.2%	20.2%	20.2%	20.2%
Total Adjusted Taxes:													
Income tax expense	14,527	19,300	16,741	20,055	22,680	25,354	28,607	31,663	35,066	38,138	42,014	45,181	48,832
(+) Tax shield on interest expense	533	591	793	1,084	1,223	1,311	1,399	1,456	1,517	1,624	1,705	1,798	1,882
(+) Tax shield on operating leases	106	102	104	104	107	110	113	116	119	123	126	129	132
(-) Tax on interest and dividend income	573	569	756	623	877	1,197	1,602	2,084	2,693	3,506	4,412	5,519	6,729
(-) Tax on other income (expense), net	12	(46)	(77)	-	-	-	-	-	-	-	-	-	-
Total Adjusted Taxes	14,581	19,469	16,959	20,619	23,134	25,579	28,517	31,152	34,009	36,378	39,434	41,589	44,118
Change in Deferred Taxes	(4,559)	5,669	(895)	-	-	-	-	-	-	-	-	-	-
NOPLAT	90,334	106,141	96,963	107,525	120,868	134,000	149,831	164,207	179,910	193,253	210,353	222,967	237,691
Invested Capital (IC):													
Operating Working Capital:													
Normal cash	21,936	23,646	22,984	25,432	28,416	31,347	34,869	38,065	41,549	44,506	48,286	51,070	54,315
(+) Accounts receivable, net	26,278	28,184	29,508	31,143	34,797	38,387	42,699	46,613	50,879	54,501	59,129	62,539	66,513
(+) Inventories	6,580	4,946	6,331	6,331	9,320	10,282	11,437	12,486	13,628	14,598	15,838	16,751	17,816
(+) Vendor non-trade receivables	25,228	32,748	31,477	33,099	36,983	40,799	45,382	49,542	54,076	57,925	62,844	66,468	70,692
(+) Other current assets	14,111	21,223	14,695	15,433	16,207	17,021	17,875	18,773	19,715	20,705	21,744	22,836	23,982
Non-interest bearing operating current assets	94,133	110,747	104,995	111,437	125,724	137,836	152,263	165,479	179,848	192,235	207,841	219,665	233,318
Accounts payable	54,763	64,115	62,611	67,241	75,131	82,883	92,194	100,645	109,856	117,675	127,668	135,031	143,611
(+) Deferred revenue	7,612	7,912	8,061	8,751	9,778	10,787	11,999	13,099	14,297	15,315	16,616	17,574	18,691
Non-interest bearing operating current liabilities	62,375	72,027	70,672	75,993	84,910	93,670	104,193	113,744	124,153	132,990	144,284	152,605	162,301
Net Operating Working Capital	31,758	38,720	34,323	35,444	40,814	44,166	48,070	51,736	55,694	59,245	63,557	67,060	71,017
Property, plant and equipment, net	39,440	42,117	43,715	45,028	46,323	47,613	48,904	50,206	51,521	52,856	54,214	55,597	57,009
Other Long-Term Operating Assets:													
Operating lease assets (ROU)	10,870	10,417	10,661	10,981	11,297	11,612	11,927	12,244	12,565	12,890	13,221	13,559	13,903
Other Long-Term Operating Assets	10,870	10,417	10,661	10,981	11,297	11,612	11,927	12,244	12,565	12,890	13,221	13,559	13,903
Other Long-Term Operating Liabilities:													
Other Long-Term Operating Liabilities	-	-	-	-	-	-	-	-	-	-	-	-	-
Invested Capital	82,068	91,254	88,699	91,453	98,434	103,390	108,901	114,185	119,781	124,992	130,993	136,216	141,929
Free Cash Flow (FCF):													
NOPLAT	90,334	106,141	96,963	107,525	120,868	134,000	149,831	164,207	179,910	193,253	210,353	222,967	237,691
(-) Change in Invested Capital	16,260	9,186	(2,555)	2,754	6,981	4,956	5,511	5,284	5,596	5,211	6,001	5,224	5,712
FCF	74,074	96,956	99,518	104,770	113,887	129,044	144,320	158,923	174,314	188,042	204,352	217,743	231,979
Return on Invested Capital (ROIC):													
NOPLAT	90,334	106,141	96,963	107,525	120,868	134,000	149,831	164,207	179,910	193,253	210,353	222,967	237,691
(/) Beginning Invested Capital	65,808	82,068	91,254	88,699	91,453	98,434	103,390	108,901	114,185	119,781	124,992	130,993	136,216
ROIC	137.3%	129.3%	106.3%	121.2%	132.2%	136.1%	144.9%	150.8%	157.6%	161.3%	168.3%	170.2%	174.5%
Economic Profit (EP):													
Beginning Invested Capital	65,808	82,068	91,254	88,699	91,453	98,434	103,390	108,901	114,185	119,781	124,992	130,993	136,216
x (ROIC - WACC)	127.4%	119.5%	96.4%	111.4%	122.3%	126.3%	135.1%	141.0%	147.7%	151.5%	158.5%	160.4%	164.7%
EP	83,872	98,082	88,002	98,814	111,887	124,334	139,678	153,513	168,697	181,491	198,079	210,104	224,315

Apple Inc.*Weighted Average Cost of Capital (WACC) Estimation*

Weighted Average Cost of Capital (WACC) Estimation		
Cost of Equity:		
Risk-Free Rate	4.20%	<< Yield on 10Y U.S. Treasury (per Bloomberg terminal)
Beta	1.17	<< Average of 1Y, 2Y, 3Y weekly beta (per Bloomberg terminal)
Equity Risk Premium	5.00%	<< Henry Fund consensus estimate
Cost of Equity	10.07%	
Cost of Debt:		
Risk-Free Rate	4.20%	<< Yield on 10Y U.S. Treasury (per Bloomberg terminal)
Implied Default Premium	0.64%	
Pre-Tax Cost of Debt	4.84%	
Marginal Tax Rate	16.00%	<< YTM on Apple's 10-year corporate bond (per Bloomberg)
After-Tax Cost of Debt	4.07%	
Market Value of Common Equity:		MV Weights
Total Shares Outstanding	15,550	
Current Stock Price	\$168.00	
MV of Equity	2,612,400	95.87%
Market Value of Debt:		
Short-Term Debt	5,985	
Current Portion of LTD	9,822	
Long-Term Debt	95,281	
PV of Operating Leases	1,410	
MV of Total Debt	112,498	4.13%
Market Value of the Firm	2,724,898	100.00%
Estimated WACC		9.82%

Apple Inc.
Sensitivity Tables

DCF/EP:		Risk-Free Rate						
\$ 179.72		3.00%	3.50%	4.00%	4.20%	4.50%	5.00%	5.50%
ERP	3.50%	353.58	304.09	266.68	254.09	237.41	213.91	194.62
	4.00%	296.89	261.12	233.00	223.32	210.31	191.64	176.00
	4.50%	255.79	228.74	206.84	199.17	188.75	173.56	160.63
	5.00%	224.63	203.48	185.94	179.72	171.19	158.59	147.73
	5.50%	200.22	183.22	168.88	163.73	156.62	146.01	136.76
	6.00%	180.58	166.63	154.69	150.35	144.34	135.29	127.31
	6.50%	164.45	152.80	142.70	139.00	133.85	126.04	119.10

DDM:		Risk-Free Rate						
\$ 147.20		3.00%	3.50%	4.00%	4.20%	4.50%	5.00%	5.50%
ERP	3.50%	358.18	296.87	251.02	235.72	215.57	187.43	164.64
	4.00%	287.99	244.23	210.23	198.63	183.14	161.12	142.93
	4.50%	237.74	205.10	179.00	169.94	157.72	140.10	125.30
	5.00%	200.17	175.01	154.43	147.20	137.35	122.98	110.76
	5.50%	171.15	151.25	134.68	128.79	120.72	108.83	98.60
	6.00%	148.16	132.09	118.52	113.65	106.94	96.97	88.32
	6.50%	129.58	116.39	105.11	101.03	95.38	86.93	79.54

DCF/EP:		WACC						
\$ 179.72		7.00%	8.00%	9.00%	9.82%	10.00%	11.00%	12.00%
Inflation Rate	1.75%	357.45	265.80	210.97	180.17	174.54	148.62	129.26
	2.00%	357.16	265.58	210.79	180.02	174.40	148.50	129.15
	2.25%	356.86	265.36	210.62	179.87	174.25	148.37	129.05
	2.50%	356.56	265.13	210.44	179.72	174.10	148.25	128.94
	2.75%	356.26	264.91	210.26	179.56	173.95	148.12	128.83
	3.00%	355.95	264.67	210.07	179.40	173.80	147.99	128.71
	3.25%	355.63	264.44	209.89	179.24	173.65	147.86	128.60

DDM:		Cost of Equity						
\$ 147.20		8.50%	9.00%	9.50%	10.07%	10.50%	11.00%	11.50%
Inflation Rate	1.75%	222.83	193.27	169.43	147.46	133.51	119.74	108.00
	2.00%	222.70	193.16	169.33	147.37	133.44	119.67	107.93
	2.25%	222.57	193.05	169.23	147.28	133.36	119.60	107.87
	2.50%	222.43	192.93	169.12	147.19	133.28	119.53	107.81
	2.75%	222.29	192.81	169.02	147.10	133.20	119.46	107.74
	3.00%	222.16	192.69	168.92	147.01	133.12	119.39	107.68
	3.25%	222.01	192.57	168.81	146.92	133.03	119.31	107.61

DCF/EP:		CV Growth of NOPLAT						
\$ 179.72		2.50%	3.00%	3.50%	4.00%	4.50%	5.00%	5.50%
Beta	0.90	192.33	203.32	216.50	232.61	252.73	278.58	313.03
	1.00	177.62	186.61	197.24	210.01	225.62	245.14	270.25
	1.10	164.96	172.41	181.11	191.40	203.76	218.89	237.83
	1.17	156.75	163.28	170.85	179.72	190.26	202.98	218.65
	1.30	144.31	149.58	155.61	162.57	170.72	180.37	191.97
	1.40	135.78	140.27	145.36	151.19	157.93	165.82	175.16
	1.50	128.20	132.05	136.38	141.31	146.95	153.47	161.10

DDM:		CV Growth of EPS						
\$ 147.20		2.50%	3.00%	3.50%	4.00%	4.50%	5.00%	5.50%
Beta	0.90	167.67	179.24	193.04	209.77	230.48	256.79	291.31
	1.00	149.57	158.85	169.76	182.77	198.54	218.07	242.88
	1.10	134.24	141.77	150.53	160.82	173.08	187.96	206.38
	1.17	124.43	130.95	138.46	147.20	157.52	169.87	184.92
	1.30	109.81	114.94	120.77	127.48	135.27	144.42	155.33
	1.40	99.98	104.26	109.09	114.60	120.92	128.27	136.90
	1.50	91.38	94.98	99.01	103.57	108.76	114.73	121.66

Apple Inc.*Relative Valuation Models*

Technology Hardware			EPS		P/E	
Ticker	Company	Price	2024E	2025E	2024	2025
AMZN	Amazon	\$185.19	\$4.17	\$5.39	44.41	34.36
DELL	Dell	\$123.37	\$7.57	\$8.56	16.30	14.41
GRMN	Garmin	\$145.96	\$5.44	\$6.09	26.83	23.97
HPE	HP	\$18.00	\$1.88	\$2.05	9.57	8.78
META	Meta	\$519.83	\$20.08	\$23.24	25.89	22.37
Average					24.60	20.78

AAPL Apple Inc. \$168.00 \$ 6.87 \$ 7.98 24.5 21.1

Implied Relative Value:

P/E (EPS24) \$ 168.90

P/E (EPS25) \$ 165.74

Technology Software and Digital Services			EPS		P/E	
Ticker	Company	Price	2024E	2025E	2024	2025
GOOGL	Alphabet	\$ 156.14	\$ 6.80	\$ 7.85	22.96	19.89
AMZN	Amazon	\$185.19	\$ 4.17	\$ 5.39	44.41	34.36
META	Meta	\$ 519.83	\$ 20.08	\$ 23.24	25.89	22.37
MSFT	Microsoft	\$ 423.26	\$ 11.67	\$ 13.39	36.27	31.61
NFLX	Netflix	\$ 618.58	\$ 17.20	\$ 21.24	35.96	29.12
SPOT	Spotify	\$ 299.99	\$ 3.91	\$ 5.52	76.72	54.35
Average					40.37	31.95

AAPL Apple Inc. \$ 168.00 \$ 6.87 \$ 7.98 24.5 21.1

Implied Relative Value:

P/E (EPS24) \$ 277.17

P/E (EPS25) \$ 254.85

Apple Inc.

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

Number of Options Outstanding (shares):	180
Average Time to Maturity (years):	2.50
Expected Annual Number of Options Exercised:	72

Current Average Strike Price:	\$ 135.91
Cost of Equity:	10.07%
Current Stock Price:	\$168.00

Fiscal Years Ending September 30	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Increase in Shares Outstanding:	72	72	36	0	0	0	0	0	0	0
Average Strike Price:	\$ 135.91	\$ 135.91	\$ 135.91	\$ 135.91	\$ 135.91	\$ 135.91	\$ 135.91	\$ 135.91	\$ 135.91	\$ 135.91
Increase in Common Stock Account:	9,786	9,786	4,893	-	-	-	-	-	-	-
Share Repurchases (\$)	84,308	84,308	84,308	84,308	84,308	84,308	84,308	84,308	84,308	84,308
Expected Price of Repurchased Shares:	\$168.00	\$ 183.97	\$ 201.47	\$ 220.62	\$ 241.60	\$ 264.57	\$ 289.73	\$ 317.27	\$ 347.44	\$ 380.48
Number of Shares Repurchased:	502	458	418	382	349	319	291	266	243	222
Shares Outstanding (beginning of the year)	15,550	15,120	14,734	14,351	13,969	13,620	13,302	13,011	12,745	12,502
Plus: Shares Issued Through ESOP	72	72	36	0	0	0	0	0	0	0
Less: Shares Repurchased in Treasury	502	458	418	382	349	319	291	266	243	222
Shares Outstanding (end of the year)	15,120	14,734	14,351	13,969	13,620	13,302	13,011	12,745	12,502	12,281

Apple Inc.*Valuation of Options Granted under ESOP*

Current Stock Price	\$168.00
Risk Free Rate	4.20%
Current Dividend Yield	0.56%
Annualized St. Dev. of Stock Returns	21.09% << via Bloomberg Terminal (3/2)

<i>\$ in millions</i>						
Range of Outstanding Options	Number of Shares	Average Exercise Price	Average Remaining Life (yrs)	B-S Option Price	Value of Options Granted	
Range 1	180	135.91	2.50	\$ 47.96	\$ 8,633	
Total	180	\$ 135.91	2.50	\$ 49.96	\$ 8,633	

Apple Inc.
Key Management Ratios

Fiscal Years Ending September 30	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Liquidity Ratios:													
Current Ratio <i>Current Assets / Current Liabilities</i>	1.07	0.88	0.99	1.10	1.23	1.37	1.53	1.73	1.94	2.19	2.44	2.74	3.04
Quick Ratio <i>(Current Assets - Inventory) / Current Liabilities</i>	1.02	0.85	0.94	1.06	1.18	1.31	1.48	1.67	1.89	2.13	2.39	2.68	2.98
Cash Ratio <i>(Cash + Marketable Securities) / Current Liabilities</i>	0.50	0.31	0.42	0.55	0.67	0.82	0.97	1.17	1.39	1.63	1.89	2.18	2.48
Asset-Management Ratios:													
Asset Turnover Ratio <i>Sales / Average Total Assets</i>	1.08	1.12	1.09	1.14	1.14	1.10	1.08	1.04	0.98	0.91	0.86	0.79	0.74
Inventory Turnover Ratio <i>COGS / Average Inventory</i>	31.87	36.96	39.65	33.82	30.78	27.37	27.18	27.38	27.33	27.54	27.33	27.65	27.55
Accounts Receivable Turnover <i>Sales / Average Accounts Receivable</i>	12.95	13.43	13.67	12.64	12.86	12.95	12.89	13.02	13.02	13.15	13.06	13.24	13.20
Financial Leverage Ratios:													
Debt-to-Assets Ratio <i>(Short + Long-Term Debt) / Total Assets</i>	0.36	0.34	0.32	0.32	0.30	0.29	0.26	0.24	0.22	0.20	0.18	0.17	0.16
Debt-to-Equity Ratio <i>(Short + Long-Term Debt) / Total Shareholder's Equity</i>	1.98	2.37	1.79	1.64	1.31	1.05	0.83	0.66	0.54	0.45	0.37	0.32	0.27
Interest Coverage Ratio <i>EBIT / Interest Expense</i>	41.19	40.75	29.06	23.74	23.63	24.44	25.61	26.96	28.35	28.42	29.44	29.58	30.10
Profitability Ratios:													
Return on Assets <i>Net Income / Total Assets</i>	26.97%	28.29%	27.51%	26.92%	26.83%	26.45%	26.24%	25.43%	24.34%	23.08%	22.03%	20.75%	19.65%
Return on Equity (NI/Beg TSE) <i>Net Income / Beginning Total Shareholder's Equity</i>	144.90%	158.19%	191.42%	169.42%	155.22%	129.29%	110.28%	92.88%	78.22%	65.25%	56.26%	47.97%	41.95%
Gross Margin <i>Gross Profit / Sales</i>	38.23%	41.78%	43.31%	43.20%	43.39%	43.53%	43.68%	43.79%	43.90%	43.97%	44.05%	44.10%	44.15%
Operating Margin <i>Operating Profit / Sales</i>	24.15%	29.78%	30.29%	29.82%	30.09%	30.28%	30.42%	30.57%	30.68%	30.79%	30.86%	30.94%	30.99%
Net Margin <i>Net Profit / Sales</i>	20.91%	25.88%	25.31%	25.31%	24.83%	25.13%	25.46%	25.83%	26.19%	26.57%	26.98%	27.39%	27.85%
Payout Policy Ratios:													
Dividend Payout Ratio <i>Dividend / EPS</i>	14.99%	14.63%	15.26%	15.17%	15.17%	15.17%	15.17%	15.17%	15.17%	15.17%	15.17%	15.17%	15.17%
Total Payout Ratio <i>Dividend + Share Repurchases / Net Income</i>	106.08%	104.45%	95.44%	95.46%	86.18%	78.71%	71.51%	66.08%	61.15%	57.45%	53.55%	50.86%	48.20%