



Technology

Apple Inc. (NYSE: AAPL)

Recommendation: HOLD

November 18, 2024

Analysts

Connor Cook
connor-cook@uiowa.edu

Tim Kozhukhov
timothy-kozhukhov@uiowa.edu

Current Price 225.00
Target Price 210.39-191.39

Investment Thesis

Company Overview

Apple Inc. is a global technology leader known for its innovative consumer electronics, software, and services. Founded in 1976 by Steve Jobs, Steve Wozniak, and Ronald Wayne, Apple revolutionized industries with products like the iPhone, iPad, Mac computers, Apple Watch, and Apple TV. Headquartered in Cupertino, California, the company is renowned for its sleek design, user-friendly interfaces, and seamless ecosystem. In addition to hardware, Apple has become a powerhouse in services, including iCloud, Apple Music, and Apple Pay. With a market capitalization surpassing \$2 trillion, Apple continues to drive innovation while prioritizing sustainability, privacy, and user experience, solidifying its position as one of the world's most valuable and influential companies.

Stock Performance Highlights

52 week High	\$237.49
52 week Low	\$164.08
Beta Value	1.10
Average Daily Volume	47.74 m

Share Highlights

Market Capitalization	\$3.401 T
Shares Outstanding	15.12 b
Book Value per share	\$3.77
EPS (period??)	\$6.00
P/E Ratio	37.01
Dividend Yield	.42%
Dividend Payout Ratio	34%

Company Performance Highlights

ROA	21.46%
ROE	157.41%
Sales	\$391.03 b

Financial Ratios

Current Ratio	0.87
Debt to Equity	4.67%

We are recommending to HOLD the position for Apple as they are one of the largest companies in technology and we believe their stock is trading at a value close to where it should be. We also believe Apple to be resilient to market trends and will continue to grow.

Drivers of Thesis:

- Products and Related Services:** Apple plans to continue to add more services to their already existing products, continuing their innovation that garners the respect of the entire industry.
- Artificial Intelligence:** Apple plans to add AI to all product offerings to improve customer experience. Apple plans to add AI to their iPhones along with their new iPad and eventually the rest of the products.
- Services and wearables growth:** Apple predicts continued growth in its services and wearable segments, and we believe this growth will continue.

Risk to Thesis:

- Competition:** Apple has seen a decline in foreign markets as new phone retailers are entering the market
- Market unpredictability:** The United States being an election year there is uncertainty of the economic outlook in America. The tariffs and uncertainty of the inflation rate could lead to market unpredictability in the short- and long-term timeline.
- Market Growth:** Artificial intelligence and new emerging technologies could lead to a loss in market share as AI could lead to unpredictable advancements in many areas of the technology sector.

One year stock Performance

AAPL Stock Total Return Chart



Five Year Stock Performance



Company Description

Apple is a multinational technology company that designs manufacturers and sells a variety of products and services. Apple is the second leading smartphone company in sales worldwide (Statista). Apple has dominated market share in the United States since the inception of the iPhone and has further solidified its dominance as a company with other products that create the 'Apple Ecosystem.' Apple seeks to further establish its presence in the industry with new innovations in products, like Virtual Reality (VR) and being at the forefront of the Artificial Intelligence (AI) boom.

Apple's Mission Statement

"To bring the best user experience to customers through innovative hardware, software, and services" (Apple). Apple's mission statement explained their market dominance as Apple continues to innovate and create demand each year for their new product offerings and services.

Corporate Strategy

Apple's competitive strategy centers on differentiation. This strategy focuses on key features that differentiate the company from its competitors. Their competitive advantages also come from the services offered along with their products such as Apple TV, new AI services, and their wearables that integrate with all their existing products. This creates a distinct identity for Apple in what is known as the 'Apple Ecosystem,' or the digital

environment that is created by Apple's products that seamlessly integrate with each other.

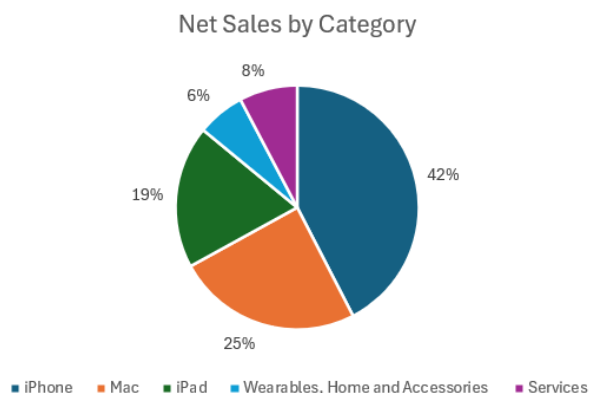
Revenue Analysis

The reported products for Apple include iPhone, Mac, iPad, Wearables, Home and Accessories, and Services. The reported service offerings for Apple that generate revenue include advertising, iTunes, AppleCare, iCloud services, Apple Pay, and Apple TV Plus. The reported business segments include Americas, Europe, Greater China, and Japan and Rest of Pacific.

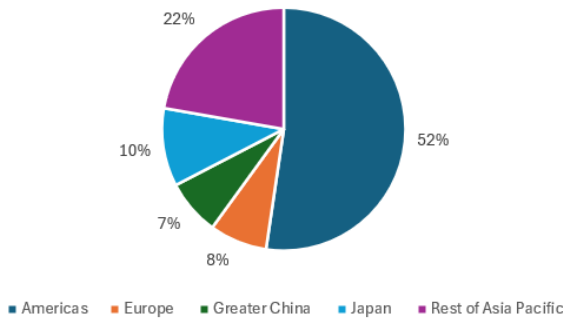
Apple's variety of offerings has helped them maintain their position as one of the top consumer technology companies. Their continued focus on innovation and growing focus on services have helped them maintain their brand loyalty along with revenue growth and market share.

Apple has also shown a continued resilience to market conditions and economic downturns. Our economic analysis on Apple leads us to predict a continued high growth rate for Apple of 9%, shown later in our economic analysis.

Apple's Q4 2023 revenue breakdown by product and business segment are shown below. The first chart shows the revenue broken down by each product. The second chart shows the revenue broken down by the business segment.



Net Sales By Segment



Revenue Breakdown by Product Segment

iPhone is the company’s line of smartphones the run of Apple’s iOS operating systems. The iPhones line has gone from iPhone 1 all the way to the newest iPhone the iPhone 16. The iPhone was released in 2007, and since its release has been the largest revenue source for Apple in 2023, and amounted to over \$200 billion in sales and 52% of the year’s sales revenue.

Mac is a line of personal computers, operating on their macOS system. The Mac line includes MacBook Air, MacBook Pro, along with the desktops iMac, Mac Mini, Mac Studio, and Mac Pro. The Mac was released in 1984 and was one of the first products ever released by Apple. In recent years, Mac has seen a decrease in revenue growth. In 2023, Mac amounted for over \$29 billion and 8% of Apple’s revenue down from the previous years as the Mac sales have trended down over the past 10 years.

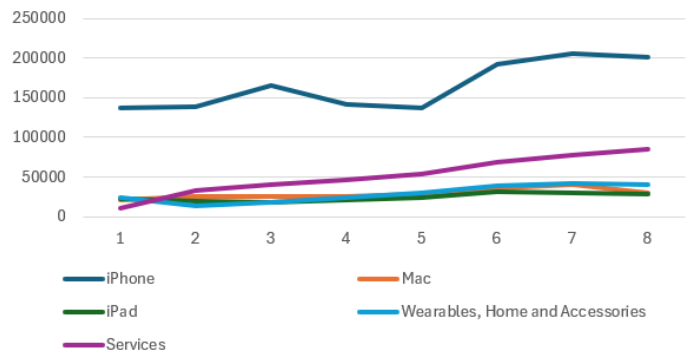
iPad is the company’s line of multipurpose tablets, running on the iPadOS operating system. The line of products include iPad Pro, iPad Air, iPad and iPad mini. The iPad line was released in 2010 and has seen a slight drop in sales over the past decade. In 2023 the iPad accounted for over \$28 billion in sales and 7% of the year’s revenue.

Wearables, Home, and Accessories are the company’s line of smartwatches, wireless headphones, and Apple watches. The products run on watchOS operating system. Apple’s

wearables, home and accessories are the largest growing segment for sales for Apple and has seen consistent growth over the past decade with sales growth averaging around 13% from year to year. In 2023 accounted for 39 billion in sales revenue and 10% of the year’s revenue.

Services is the company’s line of services to go along with their products which include their advertising, Apple Care, cloud services, digital content, payment services, Apple TV, and iTunes and App Store. This segment has been the company’s largest growing segment from year-to-year averaging a 16% growth rate over the past decade. In 2023, it accounted for \$89 billion in sales revenue and 22% of the year’s revenue.

Revenues by Each Product Segment

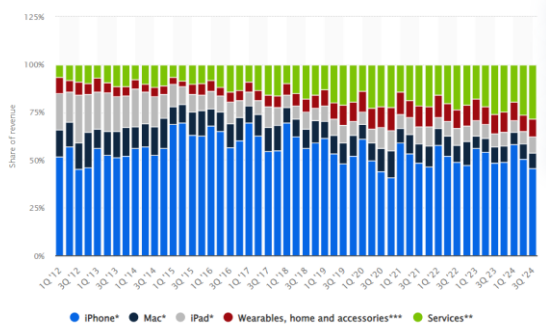


Historical Revenue

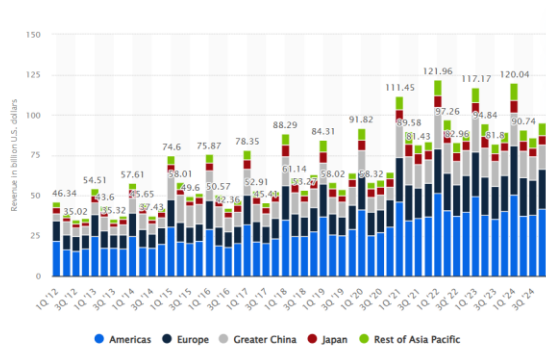
Apple’s historical revenue broken down by business segments and products was used to forecast future revenue growth for our forecast model. We used the same breakdowns as Apple did for segments and products. To use the historical data for forecasting we had to gather segment and product revenue from Apple’s 10-K reports going back to their 2014 10-K. Apple also gives percentage year change along with each year’s segment and product revenue. We gathered all the data from each 10-K and used historical percentage change averages to forecast future revenue growth for each segment and product.

Shown below are graphs of the revenue distribution. Graph 1 shows the revenue of Apple by products from 2012-2024. Graph 2 shows revenue breakdown by business segments.

Product Revenue distribution (2012-2024)



Business Segment Revenue Breakdown (2012-2024)



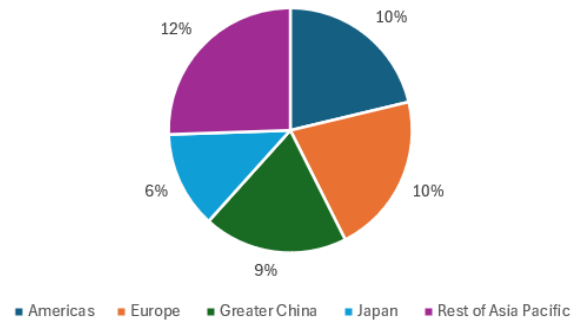
Forecasted Revenue

To forecast Apple’s revenue, we gathered the different segments and product revenue information. Then, we use the percentage changes given for each year to get an average sales change for each segment and product line. We removed the outliers to create a more accurate revenue growth prediction. We believe average yearly percentage change in revenue to be the best revenue growth rate to use as Apple has been consistently innovating by creating new products and services and with the launch of AI services in the upcoming years, we believe Apple’s growth will continue even when faced with competition. Apple also has high brand loyalty and with their services to go along with their products Apple’s revenue continues to grow. Customers who own Apple

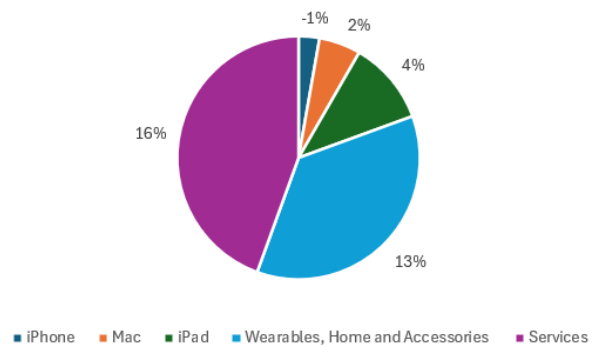
products will stay loyal to the Apple brand. A Bloomberg survey shows Apple customer loyalty when, “Apple loyalty sits at 93% of surveyed consumers.” Consumer loyalty to the brand and continued innovation are key drivers in why we believe that using past revenues to forecast the future is the best approach for Apple.

Below are the growth percentages used for business segment revenue growth and product segment revenue growth. Graph 1 shows growth for the business segment, and graph 2 shows revenue growth for each product.

Segment Revenue Growth rate



Product Revenue Growth rate



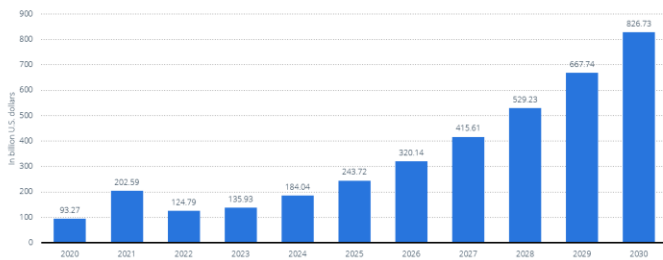
Catalysts for Continued Growth and Change

Launch of Artificial Intelligence (AI) software in the technology industry. Generative AI models, AI search engines, and AI software will help improve processes, and AI software has a vast range of applications regarding the technology industry. Apple plans to integrate AI software into their iPhone, iPad, and Mac products. Apple plans for AI to be a part of all

new product launches with features, “to understand and create language and images, take action across apps, and draw from personal context to simplify and accelerate everyday tasks” (Apple). Apple is planning to make AI an integrated part of all its future products and will expand the AI services as more users of Apple products get access to the services. The AI market is one of the largest growing industries in the technology sector and with Apple being at the forefront of the AI services Apple has potential for major growth.

The graph below shows the potential market growth for AI services and technology worldwide and show the potential growth available to companies in the AI sector.

Artificial Intelligence (AI) market size worldwide from 2020 to 2030 (in billion U.S. dollars)
AI market size worldwide from 2020-2030 (in billion U.S. dollars)



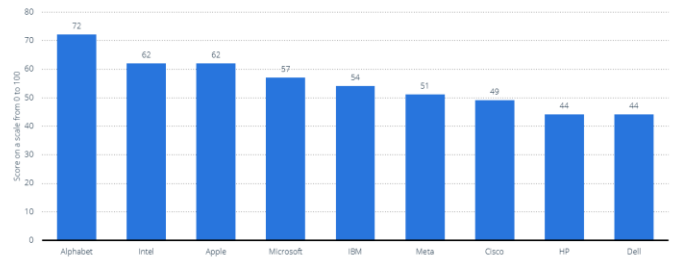
Consumer Loyalty

Apple is the largest company in the world in terms of market capitalization, currently sitting at a market cap of 3.446T today and with that, it is one of the most well-known companies in the world. Consumer loyalty is essential in the consumer technology industry as there are many competitors with comparable products. The way Apple differentiates themselves from their competitors is their ecosystem of integrated products and services. The seamless integration of all Apple products from MacBooks to iPhones, AirPods, and the services including FaceTime and Airdrop connect all Apple products and keep consumers purchasing Apple products. The ability to retain consumers in the highly competitive market helps Apple continue to dominate the consumer technology sector and hold on to their current market share. The continued innovation of their products and

services alike keeps consumers engaged along with their integrated products.

The graph below from Statista shows the consumer loyalty index for the major technology companies. Apple is third on the chart and the only company in the top 5 that’s main product is a cell phone.

Consumer loyalty of major U.S. technology companies worldwide as of September 2023 (index score)
Leading tech companies worldwide 2023, by consumer loyalty

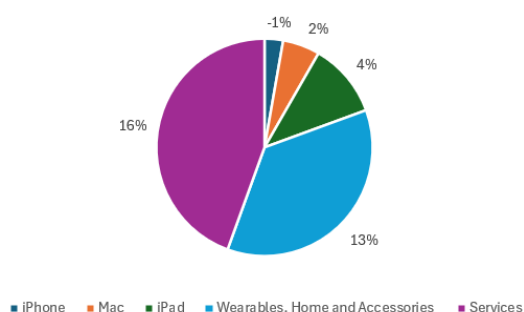


Wearables and Services

As in the historical revenue graphs specifically the product revenue distribution graph Apple has seen the most revenue growth in their wearables and services segment. Specifically, the largest growing segment for Apple and we predict to continue to grow at the fastest rate is the services offered by apple. As Apple integrates AI into their products and continues to invest in their services such as Apple TV, Cloud services, and payment services we believe Apple will generate more revenue from this segment of their business. When looking at the Services segment we have seen year over year growth averaging 16% we predict that rate will continue as Apple continues to innovate and offer new services offerings.

This graph shows the historical average growth for the wearables and services revenue segments compared to Apple’s other business segments and shows those segments have been the largest growing segments each year.

Product Revenue Growth rate



Threats to Growth

Market uncertainty

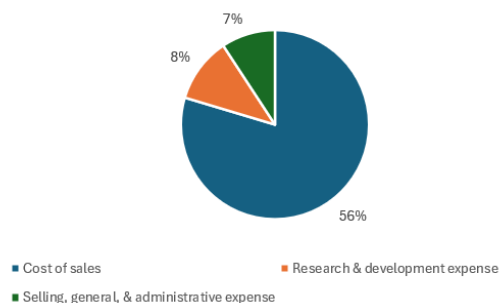
The United States being in an election year and with federal rates cuts there is uncertainty in the direction of the market. The market reacted strongly after the election and the second rate cut with the S&P 500 jumping 3.29% from November 5th to November 8th. The fed cut rates by .25 bases points at the same time, which could have also led to an increase in the S&P 500. We can see from Apple in the weeks following the election there has been no effect on their share price as it has changed 6\$ from the 5th to today. The imposed tariffs by new President Donald Trump as explained by the tax foundation could lead to a global trade war and decrease GDP 0.8% well increasing spending on imports for American companies. Apple’s direct spending goes mostly to manufacturing, materials, and assembly from over two hundred different suppliers worldwide with 85% of these supplies located in Asia where proposed traffic will be the highest. China could be a 60% import tariff leading to much higher spending to import any good from Asia and specifically China. Apple and other major tech companies are resilient to market uncertainty as seen with the largest companies in the world that are driving most market growth being the major technologies companies. However, increased import cost for all of Apple’s products sold in the United States could lead to drop Apple’s gross margin as American is the largest revenue generating segment for Apple.

Cost and Expense Analysis

Cost Drivers

Apple’s major cost and expense categories are cost of sales, research and development, and selling general and administrative. R&D expenses are on average 6.7% of revenue, SG&A expenses are on average 6.54% of revenue, and the cost of sales on average is 60.02% of revenue. Below is a graph showing the breakdown of their major expenses as cost percentage of sales in 2023. Their cost of sales being the largest expense each year and their research and development being their second largest expense. Apple is continuously driving innovation and creation of new products and services and that is show with their largest non-sales related expense being R&D. SG&A is Apple’s third largest expenditure as Apple has to pay for employees, offices and all other expenses that go along with running the business.

Major Expenses as Percentage of Revenues



Historical

As seen in the graph above, Apple spends much of its money on cost of sales or cost of goods sold (COGS) with SG&A and R&D following behind. Apple does not have much debt and has a lot of money in securities so most of their spending comes from revenue and Apple easily covers all their spending each year from revenue alone. The most spent on SG&A and R&D as a percentage of revenue from 2014-2024 is 7.8% on R&D and 7.25% on SG&A. Cost of sales has been consistent ranging from at lowest 56.69% and at highest 62.18%. This led to our assumptions for forecasting the cost.

Forecast

To forecast Apple's cost, we forecasted SG&A, R&D and Cost of sales as a percentage of revenue as the ranges for these expenses where close year to year which led us to find a historical average and use the for our future forecast. SG&A was highest at 7.01% and lowest 6.01%, R&D was lowest at 3.30% and highest 7.80% these were outliers and 7 out of the 10 years were in the 6% range. Cost of sales ranged from 56.69% at the lowest and 62.18% at the highest.

Debt Maturity

Apple uses minimal debt to finance their company. They hold on to a lot of cash and marketable securities and believe if anything happens to them their cash and securities can cover any expense they have for at least one year. The term debt Apple does have totals \$97,341 billion and is spread out from 2025-2029, with some left over after that period. Apple also has \$38.5 billion in interest payable on the notes, and another \$2.6 billion due in 12 months on a different payable.

The future principal payments for the Company's Notes as of September 28, 2024, are as follows (in millions):

2025	\$	10,930
2026		12,342
2027		9,936
2028		7,800
2029		5,153
Thereafter		51,180
Total term debt principal	\$	97,341

Above is the amount due per period for Apple's term debt. As explained above Apple uses minimal debt to finance their activities and small portions of debt due each year. Apple plans to continue to do this into the future and will continue to be a company with minimal debt.

Debt Rating

According to S&P Global Ratings Apple holds an AA+ bond rating. Apple, as examined above, carries a lot of cash, and has a lot of cash equivalents. In 2023 Apple had \$29.9 Billion in cash on their balance sheet, and \$132.1 billion in marketable securities on there too. Apple can cover any debt they undertake and from that have a high debt rating. Looking at Apple's financial metrics you can also see their debt to

assets being 48% meaning their total debt is covered over two times by their assets. To get our debt rating for forecasting or expenses and debt based on Apple have an AA+ rating we used the 30-year treasury yield for our pre-tax cost of debt to forecast Apple's debt.

Capex Assumptions

To forecast Apple's CapEx, we did not single out any items to create a CapEx portion on any of the statements. Instead, we forecasted property plant and equipment by taking gross PP&E, removing depreciation, and multiplying by 1.03% to add a buffer for inflation. We were given gross and net PP&E which allowed us to forecast CapEx as we did.

Payout Policy and Share Repurchase

Apple's capital return policy involves share repurchases along with a quarterly cash dividend. As of 2023, Apple paid \$0.25 per share quarterly dividend with plans to increase the dividend on an annual basis. Apple also announced a plan to repurchase \$110 billion in shares over an undisclosed timeline. In 2024 alone Apple repurchased \$15.2 billion in shares. We used these metrics when forecasting Apple's dividend payment growth and forecasting shares outstanding and yearly share repurchases. We had to first find Apple's dividend yield in order to forecast in order to understand the average dividend return per share an investor received from Apple stock. Then we created a dividend growth assumption by comparing passed dividend payment increases over a yearly basis. We found that each year dividends paid increased on average \$.05 per share each year from that we forecasted our dividends per year increase along with the dividend yield. To account for the share, the repurchase program we first found the historical average share repurchase in dollars for Apple and from that we removed it yearly from the share outstanding to removed repurchased share from the market.

Industry Analysis

Outlook: **positive**

Industry Description

How do firms make money in this industry?

- Cloud Services
- Streaming services
- Advertising (social media, search engines)
- Products
 - smartphones, semiconductors, tablets, wearables, laptops, gaming consoles, computers
- Operating systems
- Data Collection
- App store revenue

How do firm Differentiate themselves?

Firms differentiate themselves in this industry through product offerings, related services offerings, and product features.

Product offerings Apple sells smartphones, tablets, computers, wearables, and services to go along with their products. Their competitors sell a wide variety of other products, for example Microsoft selling mainly computers, hardware and game consoles. For a company to differentiate themselves from the others in the industry their products need to stand out compared to the others. Apple does this with their seamless integration of devices and their services that go along with the products.

Services Offerings All technology companies offer different services to go along with their products. Microsoft has Xbox live, game pass, and many other features just for their gaming consoles. Apple has iTunes, FaceTime, Apple Pay, Apple TV, and the ability to easily connect all your devices. To differentiate your services from others in the industry companies most constantly innovate well keeping their services easy to use.

Product Features

Technology companies are constantly innovating and striving to create the next

breakthrough in consumer technology. The newly expanded market of AI, quantum computing and many other fields continue to push innovation and push industry to create new and exciting features for users.

The technology industry is constantly innovating and changing industry with new products, features and services coming out yearly. The new push for AI to be integrated into all devices and the attempted creation of quantum computing will continue to push innovation in the industry. We live in a consumption-focused economy and for a technological company to stay atop the market, they need to innovate and keep consumers engaged with new and innovative products and services.

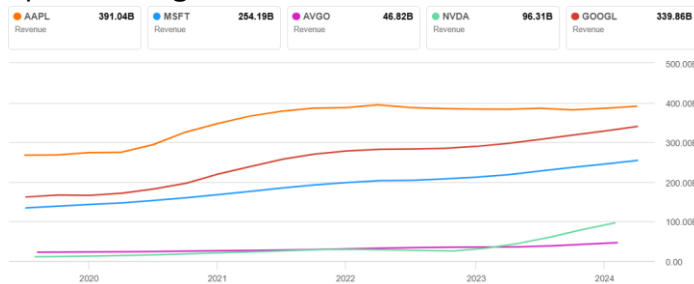
Industry Trends

Artificial Intelligence is a new and growing part of the technology industry with advancements happening daily. Innovation and new developments are happening daily in the AI space as the models learn more and grow. AI has become an essential part of the technology industry and for any technology company to hold their market share they must integrate AI into their services. Since the release of open AI companies across the technology industry have tried to catch up by releasing their own AI's including googles AI, X's AI, Meta's AI, and many other companies have attempted to integrate Ai into their services. We have seen, along with the integration of AI into many services, the investments into semiconductor companies which are essential for AI systems to run. We have seen this in the past few years with the explosion of Nvidia which is now on pace to overtake Apple for the largest market cap in the world. Nvidia has grown 873% from 2023-2024 and continues their upward growth path each month. The industry is trending towards AI and if the current technology companies plan to stay where they are currently, they have

to invest in AI and integrate it into their products and services.

Key Players and Peers

Apple faces pressure from many of its peers. No company will ever be totally safe in a competitive market, so it is important to understand corporations that pose a threat. Within the industry, major players include Microsoft (NASDAQ:MSFT), Nvidia (NASDAQ:NVDA), Taiwan Semiconductor Mfg. Co. (TPE:2330), and Broadcom Inc. (NASDAQ:AVGO) among others. As the industry grows larger, Apple will have to keep up with this growth.



Shown above is a five-year historical graph of total revenue for Apple, Microsoft, Broadcom, Nvidia, and Alphabet. Apple continues to have levels of revenue that no other company can equal. A new player to watch in this industry, however, is Nvidia, who has come into the market and exploded over the past six months. This is a player to watch, along with the other established companies that have been trying to emulate Apple for some time now.

Market Share

The technologies industry is the fastest industry in the world and is home to the largest companies in the world. Apple, NVIDIA, Microsoft, Amazon, Google being the top 5 largest companies make it clear the technologies industry is large and growing.

Company	Mkt Cap
AAPL	3,296,104.86
MSFT	3,234,486.65
NVDA	2,835,422.7
2330	770,068.06
AVGO	758,828.5
ORCL	464,054.01
A005930	322,015.22
ASML	317,218.74
SAP	259,911.04
AMD	244,099.43

The table above shows Apple boasts the largest market cap, with only Microsoft coming close. Nvidia has shown extraordinary growth this year, and may become more of a challenger to Apple's dominance. Nvidia is growing at a rapid rate and is on pace to pass able within the year.

Financial Metrics

Major Players

	MSFT	AAPL	NVDA	AVGO	ORCL
Revenues	245.1B	385.6B	96.31B	46.81B	53.82B
Profit Margin	35.96%	26.44%	55.04%	10.88%	20.40%
D/E Ratio	36.4%	151.86%	17.22%	166.03%	749.98%
Net Income	88.1B	101.96B	53.01B	5.49B	10.98B
Gross Profit	69.76%	6.24%	75.15%	63.92%	3.92%
P/B ratio	11.94%	4.38%	48.75%	11.67%	42.90%
P/E ratio	32.57%	28.49%	41.15%	26.81%	26.60%
Operation Margin	43.14%	29.56%	62.06%	31.72%	30.52%
P/S Ratio	13.14%	8.70%	29.89%	16.24%	8.81%
Market Cap	3234.49B	3296.10B	2835.42B	758.83B	464.05B
Gross Margin	69.67%	45.96%	75.98%	31.14%	65.98%

The table above shows a majority of key financial metrics across the major competitors for Apple. We believe the most important metrics are revenues, net income, operation margin, and market capitalization. We believe revenues are important because they paint a picture of how well known and established a company is. We believe net income is important because the more of that revenue a company can 'take home,' the more profitable it is. We also believe that operation margin is important because it shows how costly the day-to-day operations are for a company. Lastly, market capitalization is a key metric

because it shows the total size of a company, which plays into how well it is established.

Operating Metrics

We found key operating metrics important to each peer company from their 10-K reports. All changes are shown as a growth percentage from 2023-2024.

Microsoft used these key metrics:

- Search and news advertising revenue, 3%
- Windows commercial products and cloud service revenue, 14%
- Xbox content and gaming revenue, 39%

Nvidia used these key metrics:

- Gaming revenue, 15%
- Data Center revenue, 217%
- Professional visualization revenue, 1%

Apple used these key metrics:

- Net sales across all devices, -3%

Broadcom used these key metrics:

- Semiconductor solutions revenue, 9%
- Infrastructure software, 3%

Oracle used these key metrics:

- Cloud services revenue, 8%
- Hardware revenue, -6%
- Services revenue, -3%

We examined the company's 10-k's to find their given operating metrics. The metrics reported do not correlate for every company but can be compared when examining them. We can look at specific metrics across all the companies and compare those, one of those metrics being gaming revenue and another being services revenue. These companies are product and services companies that sell products and services that relate to these products. Microsoft say an increase of 39% in gaming revenue, Nvidia a 15% increase on gaming revenue, Apple say a services revenue increase of 16%, and Oracle say a 11% increase in services revenue. Gaming and services go together as the services offered for the products are the continued revenue stream for the companies. The companies may have different business models but the main growth

driver in this age of technologies is services provided, and we can see that services is the largest growing segment for almost all of Apple's competitors including themselves.

Industry outlook

The more services offered by a company to go along with their product offerings the better off companies in the consumer electronics industry will be. The integration of AI into those services will be a driver of more innovation and continued further revenue growth in the industry. We believe the way these companies will stay atop the market is to continue to innovate and also integrate AI into their services. The industry will continue to grow as we are a consumption-based world that drive for new and better technology.

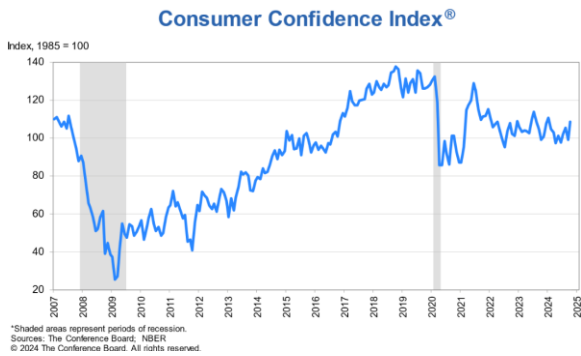
Economic Outlook

Economic outlook: **Positive**

Our economic outlook features numerous metrics that point to the steady growth of Apple and the consumer technologies industry. We used metrics like the Consumer Confidence Index, the 10-year Treasury yield, Apple's foreign currency risk, and the forecasted growth of the technology industry. Using these metrics, we can understand why Apple is poised for continued growth.

Consumer Confidence Index

The consumer confidence index measures the level of confidence that consumers have in the performance of the economy. This index is based upon a benchmark value of 100. A value above 100 signals a boost in the confidence of consumers towards the future economic situation, and values below 100 signal the opposite (OECD link).



As of the last few years in the graph, there looks to be an upward trend in consumer confidence with levels eclipsing 100. Higher index levels point to increased spending on discretionary items like electronics and other gadgets, providing a sturdy foundation for increases in revenues for Apple. With greater forecasted spending on discretionary items, Apple is sure to directly benefit from these lower rates as consumers are more willing to spend money.

10-year Treasury Yield (Interest Rates)

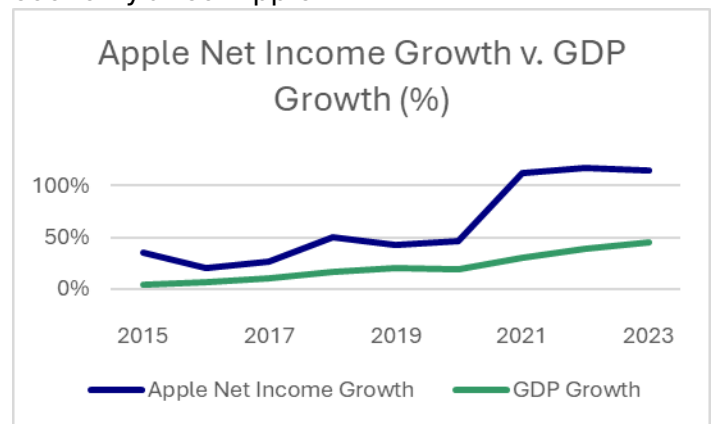
The 10-year Treasury yield is a key metric in understanding how an industry may be affected in the future. In general, lower 10-year Treasury yields decrease the cost of borrowing, allowing businesses to borrow more capital for investment into their growth strategy and worry less about more of their profits being used to pay these higher rates of interest. When the cost of capital decreases, companies like Apple can realize more returns because the cost of their sales are likely to decrease, given that revenues are the same. Analysts from Morgan Stanley believe the 10-year Treasury yield will drop to 3.75% mid-year 2025, and then to 3.5% by the end of 2025.



As shown by the chart above, the 10-year Treasury Yield is high compared to what analysts believe the yield will fall next year. If prices are the way that they are right now, then prices will rise as the yield goes down next year, holding everything else constant. Lower rates for borrowing will encourage borrowing, and higher levels of borrowing allow companies to allocate more capital to operations that increase revenues.

Real Gross Domestic Product (GDP)

The Real Gross Domestic Product (GDP) is the inflation adjusted value of the goods and services produced by labor and property located in the United States, per the Federal Reserve Bank of St. Louis. The graph we built shows percentages on the y-axis and the year on the x-axis. The real GDP of a country is a good indicator of the rate at which the economy is growing, so it is important to understand how rates of growth in the overall economy affect Apple.



Shown by the graph above, Apple’s net income grows at a faster rate than the real GDP from 2014 to 2023. The blue line shows the percentage change in Apple’s net income from one year to the next, plus the change from the previous period to show overall growth from the beginning of the graph to the end. The green line shows the same for real GDP growth. Overall, this shows that Apple likely has a positive relationship with the entire economy but most importantly shows that Apple has had stronger growth that outpaces the overall economy. This demonstrates

Apple's ability to prosper in times of an uncertain market, showing robust growth after the pandemic.

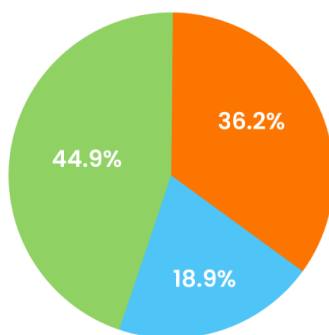
Foreign Currency Risk

Protecting yourself from foreign exchange rates is important for companies that do a significant amount of overseas business, like Apple. Different mixes of financial instruments are used primarily to create a forward contract with an investment dealer to sell off the currency at a future date, at today's foreign exchange rate. According to an article by HighRadius, Apple can effectively mitigate 96% of its foreign exchange risk. Apple generated around 63.8% of its net sales revenue from outside the United States.

Geo-wise Segregation of Net Sales in 2023

(In USD millions)

U.S. China Other countries



63.8% of Apple's net sales revenue is susceptible to fluctuations in foreign exchange rates. Apple uses Foreign Exchange Contracts (FECs) to create agreements that lock their exchange rates to mitigate these risks.

Technology industry growth prediction

Our prediction for the technology industry is that it will continue to grow. Our prediction is based on factors including a decrease in total hardware sales but a larger increase in growing service revenue. When comparing this to the global development of the entertainment and media industry, PwC forecasts a 3.9% CAGR through 2028. As E&M is a type of service, tying it in with Apple's growing focus on services, we can predict that Apple will grow at a similar

pace. With positive growth forecasted for the considerable future, and Apple's growing focus on services, Apple will be sure to capitalize on this growth.

How is Apple Affected?

These ideas that we touched on allow us to find a pathway for Apple's safety as an investment. With hedging 96% of its foreign currency risk hedged, this demonstrates that Apple is more than proactive regarding its financial health. The projected rise in the Consumer Confidence Index and the projected lowering of the 10-year Treasury yield signals a positive environment for Apple, since consumers are willing to spend more on discretionary items, like electronics, and lower rates mean that borrowing is less costly for Apple and for the consumer in terms of financing. These together show that consumers will be more willing to spend, and more willing to finance larger purchases like laptops or phones.

Valuation Analysis

Cost of Equity

We used the Capital Asset Pricing Model (CAPM) to predict Apple's cost of equity, which we found to be 10.05%. To calculate cost of equity we had to find all the variables needed to calculate CAPM:

- Risk-Free Rate (Rf) = 4.25%
 - o We used the 10-year US treasury yield
- Beta = 1.10
 - o Historical Raw Average from Bloomberg
- Equity risk premium = 5.26%
 - o 1928-2023 geometric average of expected return less the risk-free rate.

Cost of debt

To calculate the pretax cost of debt we used Bloomberg terminal, and it gave us the pretax cost of debt to be 4.98 for Apple. It does this by

showing you the yield to maturity for Apple bonds and we used the latest maturing bond we could find. For after tax cost of debt we used the pre-tax cost of debt * (1+ the marginal tax rate).

WACC

To calculate Weighted Average Cost of Capital (WACC), we first had to calculate the cost of debt and cost of equity as explained above. Then we had to find the Market value for equity and debt. To calculate MV of equity we had to take shares outstanding times the current stock price which was 15744 times \$222.01 which equaled 3,495,325.44 or 97.08%. To calculate MV of debt we had to add up all outstanding debt which was short term debt of 9822, and long-term debt of 95281 to equal 105,103.00 or 2.92%. Then we computed WACC which equaled 9.87%.

Valuation Models

Key inputs for DCF and EP

The key inputs needed to compute the DCF and EP models were CV growth NOPLAT 4.25% or the 10-year treasury. The CV ROIC equaled 122.26%. WACC which was 9.87, and cost of equity 10.05%

DCF

To calculate or DCF and later our intrinsic value we first had to find the FCF for each year for Apple so we could discount them back. To do that we first had to calculate NOPLAT and Invest capital for 2014-2033. Ones we had calculated we found a change in invest capital and added that to NOPLAT to give us free cash flow. We then discounted the FCF back from 2033 to 2023, for year 2033 we calculated to CV and discounted that to account for the years after our forecast model ended. Then we summed up the discounted cash flows, and added back non-operating adjustments including excess cash, marketable securities, and other non-current assets. Then we divided by the outstanding shares and got an intrinsic

value of 191.92 FYE and Implied price as of today of 210.39.

EP

To calculate the Economic profit model, we first had to find the economic profit for the forecasted years. We found this by calculating the ROIC from NOPLAT and Beginning IC. Then we took Beginning IC times ROIC minus WACC to get Economic Profit. After we calculated Economic profit, we then discounted the EP back to present day and summed the present value of each year's EP. Then we added back last the forecasted years invest capital to economic profit, as well as excess cash, marketable securities and subtracted value of debt. Then summed all of the accounts together and divided by shares outstanding to get the same values as we did for the DCF model of intrinsic value of last FYE of \$191.92 and Implied price today of \$210.39.

DDM

In our Dividend Discount Model, we used our forecasted dividends (multiplying the previous-year dividend by one minus the dividend yield of 0.42%) and then discounted them by the cost of equity. We added them to our continuing value and then produced a price as of the last fiscal year end, and an implied price as of today. Our price as of the last fiscal year end was \$107.65, and our implied price as of today was \$118.01. We ran into some trouble as both of these prices seem low compared to what we gathered from our DCF_EP sheet. Both of our formulas are correct, leading us to believe that one of our values is off and it looks to be our CV year return on equity.

Relative Valuation

We decided to compare the largest technology companies to calculate the industry P/E ratios and compare them to Apple's ratios. We see that Apple is like many of these companies and when valuating them we find to be lower in forward P/E for 2025 and similar for the other variables.

Ticker	Company	Price	EPS		P/E		Est. Yr			BV		Tangible	
			2024E	2025E	P/E 24	P/E 25	EPS gr.	PEG 24	PEG 25	Equity	BV Equity	P/B	Tangible P/B
MSFT	Microsoft	\$414.88	\$13.09	\$15.12	31.69	27.44	2.26	14.02	12.14	20.00	16.00	20.74	25.93
GOOG	Alphabet	\$172.43	\$8.01	\$8.98	21.53	19.20	1.09	19.75	17.62	20.00	16.00	8.62	10.78
AMZN	Amazon	\$202.58	\$5.12	\$6.16	39.57	32.89	1.76	22.48	18.69	20.00	16.00	10.13	12.66
META	Meta Platforms	\$554.84	\$22.60	\$25.29	24.55	21.94	0.93	26.40	23.59	20.00	16.00	27.74	34.68
NVDA	NVIDIA Corporation	\$141.62	\$1.19	\$2.88	119.01	49.52	1.13	-	43.82	-	-	-	-
TSLA	Tesla, Inc.	\$319.61	\$2.49	\$3.26	128.36	98.04	8.87	14.47	11.05	-	-	-	-
			Average		60.78	41.50	16.19		21.15			16.81	21.01

AAPL	Apple Inc.	\$222.01	\$1.00	\$1.20	222.0	185.0	10.0	22.2	18.5	30.00	20.00	7.40	11.10
------	------------	----------	--------	--------	-------	-------	------	------	------	-------	-------	------	-------

Implied Relative Value:

P/E (EPS24)	\$ 60.78
P/E (EPS25)	\$ 49.80
PEG (EPS24)	\$ 161.87
PEG (EPS25)	\$ 253.81
P/B	\$ 504.27
P/Tangible BV	\$ 420.23

Sensitivity Tables

CV EPS growth% to Cost of Equity

The two largest factors when creating our Discounted Dividend model leading to the implied stock price were the two compared in this sensitivity table. CV of Eps growth is critical to the CV calculation which makes up a major portion of the value of the stock. Cost of equity is the discount factor for the model and without it we would not have gotten to the intrinsic value of the stock. We can see how minor changes to these values can change the stock price in major ways and without proper calculations of these metrics could have completely changed or model.

Cost of Equity	Cv EPS Growth							
	191.92	3.50%	3.75%	4.00%	4.25%	4.50%	4.75%	5.00%
8.55%	193.34	193.34	193.34	193.34	193.34	193.34	193.34	193.34
9.05%	192.85	192.85	192.85	192.85	192.85	192.85	192.85	192.85
9.55%	192.37	192.37	192.37	192.37	192.37	192.37	192.37	192.37
10.05%	191.92	191.92	191.92	191.92	191.92	191.92	191.92	191.92
10.55%	191.48	191.48	191.48	191.48	191.48	191.48	191.48	191.48
11.05%	191.05	191.05	191.05	191.05	191.05	191.05	191.05	191.05
11.55%	190.64	190.64	190.64	190.64	190.64	190.64	190.64	190.64

Beta to Equity Risk Premium

Beta was used in calculation of our WACC which is used in the DCF model and the EP model. Beta affects the price of the stock, so we chose to analyze it compared to the variable in the WACC calculations with which it is multiplied. When comparing the two variables we see that changes to Ethier variable can greatly impact the value of the stock in the final calculations.

Beta	Equity Risk premium							
	191.92	4.51%	4.76%	5.01%	5.26%	5.51%	5.76%	6.01%
0.80	308.04	291.78	277.16	263.95	251.96	241.03	231.02	
0.90	273.66	259.26	246.31	234.63	224.02	214.35	205.51	
1.00	246.26	233.35	221.75	211.28	201.78	193.12	185.20	
1.10	223.93	212.24	201.74	192.26	183.67	175.84	168.69	
1.20	205.39	194.72	185.14	176.50	168.66	161.52	155.00	
1.30	189.77	179.97	171.16	163.22	156.03	149.48	143.49	

Risk Free Rate to Equity Risk Premium

The other two variables needed to calculate WACC and later calculate our intrinsic value are the Risk-free rate and the Equity risk

Premium. We see that an increase in risk free or equity risk premium can change the ending price greatly and lead us to realize the importance of proper calculations for these variables.

Equity Risk Pre	Risk free Rate							
	191.92	3.50%	3.75%	4.00%	4.25%	4.50%	4.75%	5.00%
4.76%	247.05	234.06	222.39	211.86	202.30	193.60	185.64	
5.01%	232.81	221.26	210.84	201.38	192.76	184.87	177.63	
5.26%	220.15	209.83	200.46	191.92	184.10	176.92	170.31	
5.51%	208.83	199.55	191.09	183.34	176.22	169.66	163.60	
5.76%	198.66	190.27	182.59	175.53	169.02	163.00	157.42	

CV NOPLAT Growth to WACC

The CV NOPLAT Growth and WACC were both used in the calculations of the intrinsic value in the DCF model and the EP model. We chose to compare them to see what slight changes in each variable would do to the model. We see that slight changes in Ethier variables can impact the final value of the model and that the proper combination of these variables lead to the calculation of our intrinsic values.

W a c c	Cv Noplat Growth							
	191.92	3.50%	3.75%	4.00%	4.25%	4.50%	4.75%	5.00%
9.12%	201.88	207.40	213.46	220.14	227.55	235.80	245.05	
9.37%	193.51	198.44	203.84	209.76	216.29	223.53	231.60	
9.62%	185.83	190.26	195.09	200.36	206.15	212.54	219.61	
9.87%	178.77	182.76	187.09	191.81	196.97	202.63	208.87	
10.12%	172.25	175.86	179.76	183.99	188.61	193.65	199.18	
10.37%	166.21	169.48	173.01	176.83	180.97	185.47	190.40	
10.62%	160.61	163.58	166.78	170.23	173.96	178.01	182.41	

Risk Free Rate to CV NOPLAT Growth

When comparing the Risk-free rate to the CV NOPLAT growth we did this to see what changes in either variable would do to the value of WACC and later to the intrinsic value of stock. Both are critical in computing the final values of the stock price and changes in either viable lead to changes in the price of the stock.

Cv Noplat Growth	Risk Free Rate							
	191.92	3.50%	3.75%	4.00%	4.25%	4.50%	4.75%	5.00%
3.75%	207.47	198.54	190.36	182.86	175.94	169.55	163.63	
4.00%	213.50	203.92	195.19	187.20	179.85	173.09	166.84	
4.25%	220.15	209.83	200.46	191.92	184.10	176.92	170.31	
4.50%	227.52	216.35	206.25	197.08	188.73	181.08	174.06	
4.75%	235.73	223.57	212.63	202.75	193.79	185.61	178.13	
5.00%	244.93	231.61	219.70	209.00	199.34	190.57	182.57	

Cost of Equity to Pre-tax Cost of Debt

These are the single most important variables in the calculation of WACC which directly affects our intrinsic value of stocks. We choose to compare these variables to see what

changes in either variable does to the future value of the stock.

		Cost of Equity						
		8.55%	9.05%	9.55%	10.05%	10.55%	11.05%	11.55%
Pre-tax Cost of	191.92							
	4.48%	191.83	191.34	190.87	190.41	189.98	189.55	189.15
	4.73%	192.58	192.09	191.62	191.16	190.73	190.30	189.90
	4.98%	193.34	192.85	192.37	191.92	191.48	191.05	190.64
	5.23%	194.10	193.61	193.13	192.67	192.23	191.80	191.39
	5.48%	194.87	194.37	193.89	193.42	192.98	192.55	192.14

Important Disclaimer

This report was created by students enrolled in the Security Analysis (6F:112) class at the University of Iowa. The report was originally created to offer an internal investment recommendation for the University of Iowa Krause Fund and its advisory board. The report also provides potential employers and other interested parties an example of the students' skills, knowledge and abilities. Members of the Krause Fund are not registered investment advisors, brokers or officially licensed financial professionals. The investment advice contained in this report does not represent an offer or solicitation to buy or sell any of the securities mentioned. 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 Krause Fund may hold a financial interest in the

- Apple. (2024, June). Introducing Apple Intelligence for iPhone, iPad, and Mac. Apple Newsroom.
<https://www.apple.com/newsroom/2024/06/introducing-apple-intelligence-for-iphone-ipad-and-mac/#:~:text=In%20Mail%2C%20staying%20on%20top,to%20ensure%20everything%20is%20answered>
- Barron's. (2024, November 18). U.S. 10-year treasury yield to fall to 3.75% by mid-2025, Morgan Stanley says.
<https://www.barrons.com/livecoverage/stock-market-today-111824/card/u-s-10-year-treasury-yield-to-fall-to-3-75-by-mid-2025-morgan-stanley-says-hukHV3Wjfrt7CzCgJZ8V>
- Bloomberg. (2024, June 24). Despite stagnant unit sales, Apple loyalty and high-end adoption may see Apple revenue in the U.S. grow in FY24, finds Bloomberg Intelligence.
<https://www.bloomberg.com/company/press/despite-stagnant-unit-sales-apple-loyalty-and-high-end-adoption-may-see-apple-revenue-in-the-us-grow-in-fy24-finds-bloomberg-intelligence/>
- Capital IQ. (n.d.). Profile for Apple Inc.
<https://www-capitaliq-com.proxy.lib.uiowa.edu/CIQDotNet/Lists/Profile.aspx?subTypeId=8000000&listObjectId=100886794>
- Capital IQ. (n.d.). Financial ratios for Apple Inc.
<https://www-capitaliq-com.proxy.lib.uiowa.edu/CIQDotNet/Financial/Ratios.aspx?CompanyId=2671648&mode=aggregate>
- Capital IQ. (n.d.). Key statistics for Apple Inc.
<https://www-capitaliq-com.proxy.lib.uiowa.edu/CIQDotNet/Financial/KeyStats.aspx?companyId=22247&statekey=a4a65103bdc744b0b6bcd37dab1ae254>
- Conference Board. (n.d.). Consumer confidence.
<https://www.conference-board.org/topics/consumer-confidence>
- Deloitte. (2024). Executives expect tech industry growth in 2024.
<https://www2.deloitte.com/us/en/insights/industry/technology/executives-expect-tech-industry-growth-in-2024.html>
- eMarketer. (2024). Apple services revenues, including media and advertising, soar to record heights amidst hardware slump.
<https://www.emarketer.com/content/apple-services-revenues-including-media-advertising-soar-record-heights-amidst-hardware-slump>
- Eaton SQ. (2024). Key software M&A trends driving strategic growth in 2024.
<https://eatonsq.com/blog/key-software-ma-trends-driving-strategic-growth-in-2024/#:~:text=According%20to%20PwC%2C%20over%2060,AI%2C%20robotics%2C%20and%20automation>
- FRED. (2024). Real gross domestic product. Federal Reserve Economic Data.
[https://fred.stlouisfed.org/series/GDPC1#:~:text=Real%20gross%20domestic%20product%20is,the%20United%20States%20\(NIPA\)](https://fred.stlouisfed.org/series/GDPC1#:~:text=Real%20gross%20domestic%20product%20is,the%20United%20States%20(NIPA))
- FRED. (2024). 10-year treasury yield. Federal Reserve Economic Data.
<https://fred.stlouisfed.org/series/DGS10>
- Fortune Business Insights. (2024). Green technology and sustainability market.
<https://www.fortunebusinessinsights.com/green-technology-and-sustainability-market-102221>
- Global 5G Americas. (2024). Global 5G connections surge to 1.76 billion, 66% growth year-over-year, as North America leads charge.
<https://www.5gamericas.org/global-5g-connections-surge-to-1-76-billion-66-percent-growth-year-over-year-as-north-america-leads-charge/#:~:text=Additionally%2C%205G%20data%20traffic%20is,growth%20trajectory%20of%205G%20connectivity>
- HighRadius. (2024). Apple treasury management.
<https://www.ighradius.com/finsider/apple-treasury-management/>
- Investopedia. (2024, September 22). Why 10-year U.S. treasury rates matter.
<https://www.investopedia.com/articles/investing/100814/why-10-year-us-treasury-rates-matter.asp#:~:text=The%2010%2Dyear%20Treasury%20yield%20plays%20a%20part%20in%20the,of%20future%20earnings%20is%20higher.>
- Macrotrends. (2024). United States GDP (gross domestic product).
<https://www.macrotrends.net/global-metrics/countries/USA/united-states/gdp-gross-domestic-product>

- OECD. (2024). Consumer Confidence Index (CCI). <https://www.oecd.org/en/data/indicators/consumer-confidence-index-cci.html>
- Panmore Institute. (n.d.). Apple Inc. generic strategy & intensive growth strategies. <https://panmore.com/apple-inc-generic-strategy-intensive-growth-strategies>
- PwC. (2024). Business model reinvention outlook: Insights and perspectives. <https://www.pwc.com/gx/en/issues/business-model-reinvention/outlook/insights-and-perspectives.html>
- PwC. (2024). Future of tech regulation. <https://www.pwc.com/us/en/industries/tmt/library/future-of-tech-regulation.html#:~:text=Scrutiny%20of%20the%20tech%20sector,content%20moderation%2C%20a mong%20other%20issues>
- PwC. (2024). Telecommunications, media, and technology sector trends. <https://www.pwc.com/gx/en/services/deals/trends/telecommunications-media-technology.html#:~:text=Within%20the%20techno logy%20sector%2C%20software,because%20of%20one%20large%20megadeal>
- Seeking Alpha. (2024). Apple revenue comparison. https://seekingalpha.com/comparison/new/MCUyQ2FhcGwlMkNtc2Z0JTJDYXZnbyUyQ252ZGElMkNnb29nbA==?axis=linear&interval=5Y&metric=total_revenue
- SEC. (2024). Form 10-K for Apple Inc. (Q3 2023). <https://www.sec.gov/Archives/edgar/data/320193/000032019323000106/aapl-20230930.htm>
- SEC. (2024). Form 10-K for Oracle Corporation. (Q1 2024). <https://www.sec.gov/ix?doc=/Archives/edgar/data/1341439/000095017024075605/orcl-20240531.htm>
- SEC. (2024). Form 10-Q for Microsoft Corporation. (Q2 2024). <https://www.sec.gov/ix?doc=/Archives/edgar/data/789019/000095017024087843/msft-20240630.htm>
- Statista. (2024). Global AI market size forecast. <https://www-statista-com.proxy.lib.uiowa.edu/forecasts/1474143/global-ai-market-size>
- Statista. (2024). Tech companies loyalty statistics. <https://www-statista-com.proxy.lib.uiowa.edu/statistics/1478540/tech-companies-loyalty/>
- Sellers Commerce. (2024). Ecommerce sales in the United States. <https://www.sellerscommerce.com/blog/ecommerce-statistics/#:~:text=Ecommerce%20sales%20in%20the%20United,online%20sales%20in%20the%20country>
- Verdict. (2024, November 18). Apple's supply chain in China. <https://www.verdict.co.uk/apple-supply-chain-china/#:~:text=In%202020%2C%20the%20vast%20majority,these%20suppliers%20were%20in%20Asia>
- Verdict. (2024, October 1). Global M&A activity in the technology industry. <https://www.verdict.co.uk/global-ma-activity-technology-industry/#:~:text=In%20the%20global%20technol ogy%20industry,the%20industry's%20largest%20disclosed%20deal>
- World Economic Forum. (2024, June 4). AI is already helping businesses to buy and sell internationally: Here's how technology can disrupt global trade even more. <https://www.weforum.org/agenda/2024/06/ai-is-already-helping-businesses-to-buy-and-sell-internationally-heres-how-technology-can-disrupt-global-trade-even-more/#:~:text=Between%202013%20and%202021%2C%20the,is%20the%20only%20way%20forward>

Revenue Decomposition

Apple Inc. Revenue Decomposition													
Fiscal Years Ending 09/30/24	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Net Sales by Segment													
Americas	153306	169658	162560	178584	196187	215525	236770	260109	285748	313915	344858	378851	416195
Europe	89307	95118	94294	103858	114392	125995	138774	152850	168353	185429	204237	224953	247769
Greater China	68366	74200	72559	78882	85756	93229	101353	110185	119787	130226	141574	153911	167324
Japan	28482	25977	24257	25782	27402	29125	30955	32901	34969	37167	39504	41987	44626
Rest of Asia Pacific	26356	29375	29615	33211	37244	41766	46838	52525	58904	66056	74077	83072	93160
Total Net Segment Sales	365817	394328	383285	420317	460981	505640	554691	608571	667762	732794	804250	882774	969073
Net Sales by Category													
iPhone	191973	205489	200583	198004	195458	192945	190465	188016	185598	183212	180857	178531	176236
Mac	35190	40177	29357	29902	30458	31023	31599	32186	32784	33393	34013	34645	35288
iPad	31862	29292	28300	29392	30525	31703	32925	34195	35514	36884	38307	39784	41319
Wearables, Home and Accessories	38367	42241	39845	45025	50878	57492	64966	73412	82955	93740	105926	119696	135257
Services	68425	78129	85200	98832	114645	132988	154266	178949	207581	240794	279321	324012	375854
Total Net Sales by Category	365817	395328	383285	401155	421964	446152	474222	506758	544433	588023	638423	696669	763954

Apple Inc. Revenue Decomposition									
Fiscal Years Ending 09/30/24	2016	2017	2018	2019	2020	2021	2022	2023	
	% Change	% Change	% Change	% Change	% Change	% Change	% Change	% Change	Ave. % Change
Net Sales by Segment									
Americas	12%	16%	4%	7%	23%	11%	-4%	10%	
Europe	10%	14%	-3%	14%	30%	7%	-1%	10%	
Greater China	-8%	16%	-16%	-8%	70%	9%	-2%	9%	
Japan	5%	23%	-1%	0%	33%	-9%	-7%	6%	
Rest of Asia Pacific	11%	15%	2%	10%	35%	11%	1%	12%	
Total Net Segment Sales	6%	16%	2%	6%	33%	8%	-3%	10%	
Net Sales by Category									
iPhone	3%	0%	-14%	-3%	0%	7%	-2%	-1%	
Mac	-7%	-1%	2%	11%	21%	14%	-27%	2%	
iPad	13%	-2%	16%	11%	0%	-8%	-3%	4%	
Wearables, Home and Accessories	23%	0%	14%	25%	25%	7%	-3%	13%	
Services	16%	41%	16%	16%	0%	14%	9%	16%	
Total Net Sales by Category	6%	16%	-2%	6%	33%	8%	-3%	9%	

Income Statement

Apple Inc.													
Income Statement													
Fiscal Years Ending 09/30/24	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Net sales	365,817	394,328	383,285	401,155	421,964	446,152	474,222	506,758	544,433	588,023	638,423	696,669	763,954
Cost of sales	212,981	223,546	214,137	240,770	253,259	267,776	284,624	304,152	326,764	352,926	383,176	418,135	458,518
Depreciation and amortization	11,284	11,104	11,519	11,956	12,135	12,000	12,002	12,104	12,283	12,518	12,798	13,114	13,458
Gross margin	152,836	170,782	169,148	148,429	156,570	166,375	177,596	190,502	205,386	222,578	242,449	265,420	291,977
Research & development expense	21,914	26,251	29,915	26,891	28,286	29,907	31,789	33,970	36,495	39,417	42,795	46,700	51,210
Selling, general, & administrative expense	21,973	25,094	24,932	26,221	27,581	29,162	30,997	33,124	35,586	38,435	41,730	45,537	49,935
Total operating expenses	43,887	51,345	54,847	53,112	55,867	59,069	62,786	67,093	72,081	77,852	84,525	92,237	101,145
Operating income (loss)	97,665	108,333	102,782	95,317	100,703	107,306	114,811	123,409	133,305	144,726	157,923	173,183	190,832
Interest & dividend income	2,843	2,825	3,750	6,761	5,055	6,666	7,346	8,487	9,826	11,348	12,769	14,080	15,021
Interest expense	2,645	2,931	3,933	4,745	4,542	4,719	4,922	5,154	5,415	5,708	6,036	6,404	6,816
Other income (expense), net	258	(334)	(565)	1,451	(938)	2,886	(462)	3,795	616	5,024	1,709	5,967	2,237
Income (loss) before provision for income taxes	109,207	119,103	113,736	98,785	100,278	112,139	116,773	130,537	138,332	155,390	166,366	186,827	201,274
Provision for (benefit from) income taxes	14,527	19,300	16,741	16,719	16,972	18,980	19,764	22,093	23,413	26,300	28,158	31,621	34,066
Net income (loss)	94,680	99,803	96,995	82,065	83,306	93,160	97,009	108,444	114,920	129,090	138,208	155,207	167,208
Weighted average shares outstanding - basic	16,701	16,216	15,744	15,369	15,023	14,707	14,419	14,156	13,916	13,698	13,498	13,316	13,150
Year end shares outstanding	16,427	15,943	15,550	15,188	14,858	14,556	14,281	14,031	13,802	13,593	13,403	13,229	13,071
Net earnings (loss) per share - basic	6.00	6.00	6.00	5.34	5.55	6.33	6.73	7.66	8.26	9.42	10.24	11.66	12.72
Cash dividends declared per share	0.85	0.90	0.94	1.14	1.39	1.70	2.07	2.52	3.07	3.74	4.55	5.55	6.75
Dividends paid	14,196	14,594	14,799	17,596	20,949	24,979	29,828	35,668	42,707	51,200	61,452	73,839	88,813

Balance Sheet

Apple Inc.

<i>Fiscal Years Ending 09/30/24</i>	2021	2022	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Marketable securities	27,699	24,658	31,590	32,908	34,280	35,710	37,199	38,751	40,367	42,051	43,805	45,632	47,535
Accounts receivable, net allowances	26,278	28,184	29,508	31,012	32,621	34,491	36,661	39,176	42,089	45,458	49,355	53,857	59,059
Inventories	6,580	4,946	6,331	5,824	6,126	6,477	6,885	7,357	7,904	8,537	9,269	10,114	11,091
Vendor non-trade receivables	25,228	32,748	31,477	30,027	31,584	33,395	35,496	37,931	40,751	44,014	47,787	52,146	57,183
Right to use lease Asset	10,948	11,369	11,676	12,309	12,947	13,689	14,551	15,549	16,705	18,042	19,589	21,376	23,440
Other current assets	3,163	9,854	3,019	1,158	1,218	1,287	1,368	1,462	1,571	1,697	1,842	2,010	2,204
Total current assets	134,836	135,405	143,566	113,237	118,776	125,050	132,160	140,227	149,387	159,800	171,646	185,136	200,513
Marketable securities	127,877	120,805	100,544	104,738	109,106	113,657	118,398	123,336	128,480	133,839	139,422	145,237	151,295
Gross property, plant & equipment	109,723	114,457	114,599	125,916	137,572	149,578	161,944	174,682	187,801	201,314	215,232	229,568	244,334
Accumulated depreciation & amortization	70,283	72,340	70,884	82,840	94,975	106,975	118,976	131,081	143,363	155,881	168,680	181,794	195,252
Property, plant & equipment, net	39,440	42,117	43,715	44,368	43,875	43,882	44,257	44,909	45,771	46,795	47,949	49,207	50,554
Other Non-Current Assets	48,849	54,428	64,758	59,713	62,811	66,411	70,590	75,433	81,041	87,529	95,032	103,702	113,717
Total non-current assets	216,166	217,350	209,017	208,819	215,793	223,950	233,245	243,678	255,292	268,164	282,402	298,146	315,566
Total assets	351,002	352,755	352,583	322,056	334,569	349,000	365,405	383,905	404,679	427,964	454,048	483,282	516,080
Accounts payable	54,763	64,115	62,611	69,072	72,655	76,819	81,652	87,255	93,741	101,247	109,925	119,954	131,539
Deferred revenue	7,612	7,912	8,061	8,278	8,707	9,206	9,785	10,457	11,234	12,134	13,174	14,376	15,764
Other current liabilities	47,493	60,845	58,829	57,576	60,563	64,034	68,063	72,733	78,140	84,396	91,630	99,990	109,647
Commercial paper	6,000	9,982	5,985	2,971	3,116	3,280	3,467	3,679	3,919	4,192	4,503	4,857	5,260
Term debt	9,613	11,128	9,822	2,841	2,980	3,138	3,316	3,519	3,748	4,010	4,307	4,645	5,031
Total current liabilities	125,481	153,982	145,308	140,737	148,020	156,478	166,284	177,641	190,783	205,978	223,538	243,821	267,241
Total debt	118,063	111,824	95,281	91,212	94,756	98,843	103,489	108,728	114,612	121,206	128,594	136,874	146,162
Other non-current liabilities	81,961	81,627	60,256	60,173	63,295	66,923	71,133	76,014	81,665	88,203	95,763	104,500	114,593
Total non-current liabilities	162,431	148,101	145,129	151,385	158,050	165,765	174,622	184,742	196,277	209,410	224,357	241,374	260,755
Total liabilities	287,912	302,083	290,437	292,122	306,071	322,243	340,906	362,383	387,060	415,388	447,896	485,195	527,996
Common Equity	57,365	64,849	73,812	73,962	74,113	74,263	74,414	74,564	74,714	74,865	75,015	75,166	75,316
Retained earnings	5,562	(3,068)	(214)	(16,134)	(34,166)	(46,375)	(59,584)	(67,198)	(75,375)	(77,874)	(81,508)	(80,529)	(82,524)
Accumulated other comprehensive income (lo	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 Equity	63,090	50,672	62,146	46,376	28,494	16,436	3,378	(4,086)	(12,113)	(14,461)	(17,944)	(16,816)	(18,660)

Cash Flows Statement

Apple Inc.

Historical Cash Flow Statement

Fiscal Years Ending 09/30/24	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Net income (loss)	\$39,510	\$53,394	\$45,687	\$48,351	\$59,531	\$55,256	\$57,411	\$94,680	\$99,803	\$96,995
Depreciation & amortization	\$7,946	\$11,257	\$10,505	\$10,157	\$10,903	\$12,547	\$11,056	\$11,284	\$11,104	\$11,519
Share-based compensation expense	\$2,863	\$3,586	\$4,210	\$4,840	\$5,340	\$6,068	\$6,829	\$7,906	\$9,038	\$10,833
Deferred income tax expense (benefit)	\$2,347	\$1,382	\$4,938	\$5,966	(\$32,590)	(\$340)	(\$215)	(\$4,774)	\$895	\$895
Other adjustments	-	-	-	(\$166)	(\$444)	(\$652)	(\$97)	(\$147)	\$111	(\$2,227)
Accounts receivable, net	(\$4,232)	\$611	\$1,095	(\$2,093)	(\$5,322)	\$245	\$6,917	(\$10,125)	(\$1,823)	(\$1,688)
Inventories	(\$76)	(\$238)	\$217	(\$2,723)	\$828	(\$289)	(\$127)	(\$2,642)	\$1,484	(\$1,618)
Vendor non-trade receivables	(\$2,220)	(\$3,735)	(\$51)	(\$4,254)	(\$8,010)	\$2,931	\$1,553	(\$3,903)	(\$7,520)	\$1,271
Other current & non-current assets	\$167	(\$179)	\$1,090	(\$5,318)	(\$423)	\$873	(\$9,588)	(\$8,042)	(\$6,499)	(\$5,684)
Accounts payable	\$5,938	\$5,400	\$1,791	\$9,618	\$9,175	(\$1,923)	(\$4,062)	\$12,326	\$9,448	(\$1,889)
Deferred revenue	\$1,460	\$1,042	(\$1,554)	(\$626)	(\$44)	(\$625)	\$2,081	\$1,676	\$478	-
Other current & non-current liabilities	\$6,010	\$8,746	(\$2,104)	(\$154)	\$38,490	(\$4,700)	\$8,916	\$5,799	\$5,632	\$3,031
Net cash flows from operating activities	\$59,713	\$81,266	\$65,824	\$63,598	\$77,434	\$69,391	\$80,674	\$104,038	\$122,151	\$110,543
Purchases of marketable securities	(\$217,128)	(\$166,402)	(\$142,428)	(\$159,486)	(\$71,356)	(\$39,630)	(\$114,938)	(\$109,558)	(\$76,923)	-
Proceeds from maturities of marketable securities	\$18,810	\$14,538	\$21,258	\$31,775	\$55,881	\$40,102	\$69,918	\$59,023	\$29,917	\$39,686
Proceeds from sales of marketable securities	\$189,301	\$107,447	\$90,536	\$94,564	\$47,838	\$56,988	\$50,473	\$47,460	\$37,446	\$5,828
Payments made in connection with business acquisitions, net	(\$3,765)	(\$343)	(\$297)	(\$329)	(\$721)	(\$624)	(\$1,524)	(\$33)	(\$306)	-
Purchases of non-marketable securities	-	-	-	-	(\$1,871)	(\$1,001)	(\$210)	(\$131)	-	(\$29,513)
Proceeds from non-marketable securities	-	-	-	-	\$353	\$1,634	\$92	\$387	-	-
Payments for acquisition of property, plant & equipment	(\$9,571)	(\$11,247)	(\$12,734)	(\$12,451)	(\$13,313)	(\$10,495)	(\$7,309)	(\$11,085)	(\$10,708)	(\$10,959) †
Other cash flow from investing activities	\$16	(\$26)	(\$110)	\$220	(\$745)	(\$1,078)	(\$791)	(\$608)	(\$1,780)	(\$1,337)
Net cash flows from investing activities	(\$22,579)	(\$56,274)	(\$45,977)	(\$46,446)	\$16,066	\$45,896	(\$4,289)	(\$14,545)	(\$22,354)	\$3,705
Payments for taxes related to net share settlement of equity awards	(\$1,158)	(\$1,499)	(\$1,570)	(\$1,874)	(\$2,527)	(\$2,817)	(\$3,634)	(\$6,556)	(\$6,223)	(\$5,431)
Payments for dividends & dividend equivalents	(\$11,126)	(\$11,561)	(\$12,150)	(\$12,769)	(\$13,712)	(\$14,119)	(\$14,081)	(\$14,467)	(\$14,841)	(\$15,025)
Repurchases of common stock	(\$45,000)	(\$35,253)	(\$29,722)	(\$32,900)	(\$72,738)	(\$66,897)	(\$72,358)	(\$85,971)	(\$89,402)	(\$77,550)
Proceeds from issuance of term debt, net	\$11,960	\$27,114	\$24,954	\$28,662	\$6,969	\$6,963	\$16,091	\$20,393	\$5,465	-
Repayments of term debt	-	-	(\$2,500)	(\$3,500)	(\$6,500)	(\$8,805)	(\$12,629)	(\$8,750)	(\$9,543)	(\$11,151)
Proceeds from/(repayments of) commercial paper, net	\$6,306	\$2,191	(\$397)	\$3,852	(\$37)	(\$5,977)	(\$963)	\$1,022	\$3,955	(\$3,978)
Net cash flows from financing activities	(\$37,549)	(\$17,716)	(\$20,483)	(\$17,347)	(\$87,876)	(\$90,976)	(\$86,820)	(\$93,353)	(\$110,749)	(\$108,488)
Increase (decrease) in cash & cash equivalents & restricted cash	(\$415)	\$7,276	(\$636)	(\$195)	\$5,624	\$24,311	(\$10,435)	(\$3,860)	(\$10,952)	\$5,760

Important disclosures appear on the last page of this report.

Common Size Income Statement

Apple Inc.

Common Size Income Statement

Fiscal Years Ending 09/30/24	2021	2022	2023	Average	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
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	58.22%	56.69%	55.87%	60.02%	60.02%	60.02%	60.02%	60.02%	60.02%	60.02%	60.02%	60.02%	60.02%	60.02%
Gross margin	41.78%	43.31%	44.13%	39.98%	37.00%	37.11%	37.29%	37.45%	37.59%	37.72%	37.85%	37.98%	38.10%	38.22%
Research & development expense	5.99%	6.66%	7.80%	6.70%	6.70%	6.70%	6.70%	6.70%	6.70%	6.70%	6.70%	6.70%	6.70%	6.70%
Selling, general & administrative expense	6.01%	6.36%	6.50%	6.54%	6.54%	6.54%	6.54%	6.54%	6.54%	6.54%	6.54%	6.54%	6.54%	6.54%
Total operating expenses	12.00%	13.02%	14.31%	12.07%	13.24%	13.24%	13.24%	13.24%	13.24%	13.24%	13.24%	13.24%	13.24%	13.24%
Operating income (loss)	26.70%	27.47%	26.82%	23.88%	23.76%	23.87%	24.05%	24.21%	24.35%	24.49%	24.61%	24.74%	24.86%	24.98%
Interest & dividend income	0.78%	0.72%	0.98%	1.42%	1.69%	1.20%	1.49%	1.55%	1.67%	1.80%	1.93%	2.00%	2.02%	1.97%
Interest expense	0.72%	0.74%	1.03%	0.83%	1.69%	1.20%	1.49%	1.55%	1.67%	1.80%	1.93%	2.00%	2.02%	1.97%
Other income (expense), net	0.07%	-0.08%	-0.15%	0.45%	1.18%	1.08%	1.06%	1.04%	1.02%	0.99%	0.97%	0.95%	0.92%	0.89%
Income (loss) before provision for income taxes	29.85%	30.20%	29.67%	28.36%	0.36%	-0.22%	0.65%	-0.10%	0.75%	0.11%	0.85%	0.27%	0.86%	0.29%
Provision for (benefit from) income taxes	3.97%	4.89%	4.37%	5.58%	24.63%	23.76%	25.13%	24.62%	25.76%	25.41%	26.43%	26.06%	26.82%	26.35%
Net income (loss)	25.88%	25.31%	25.31%	22.78%	4.17%	4.02%	4.25%	4.17%	4.36%	4.30%	4.47%	4.41%	4.54%	4.46%

Common Size Balance Sheet

Apple Inc.

Common Size Balance Sheet

Fiscal Years Ending 09/30/24	2021	2022	2023	AVERAGE	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
Cash & cash equivalents	9.55%	6.00%	7.82%	10.07%										
Marketable securities	7.57%	6.25%	8.24%	13.65%	8.20%	8.12%	8.00%	7.84%	7.65%	7.41%	7.15%	6.86%	6.55%	6.22%
Accounts receivable, net allowances	7.18%	7.15%	7.70%	7.73%	7.73%	7.73%	7.73%	7.73%	7.73%	7.73%	7.73%	7.73%	7.73%	7.73%
Inventories	1.80%	1.25%	1.65%	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%	1.45%
Vendor non-trade receivables	6.90%	8.30%	8.21%	7.49%	7.49%	7.49%	7.49%	7.49%	7.49%	7.49%	7.49%	7.49%	7.49%	7.49%
Right to use lease Asset	2.99%	2.88%	3.05%	3.07%	3.07%	3.07%	3.07%	3.07%	3.07%	3.07%	3.07%	3.07%	3.07%	3.07%
Other current assets	0.86%	2.50%	0.79%	3.36%	0.29%	0.29%	0.29%	0.29%	0.29%	0.29%	0.29%	0.29%	0.29%	0.29%
Total current assets	36.86%	34.34%	37.46%	44.97%	28.23%	28.15%	28.03%	27.87%	27.67%	27.44%	27.18%	26.89%	26.57%	26.25%
Marketable securities	34.96%	30.64%	26.23%	53.88%	26.11%	25.86%	25.47%	24.97%	24.34%	23.60%	22.76%	21.84%	20.85%	19.80%
Gross property, plant & equipment	29.99%	29.03%	29.90%	30.11%	31.39%	32.60%	33.53%	34.15%	34.47%	34.49%	34.24%	33.71%	32.95%	31.98%
Accumulated depreciation & amortization	19.21%	18.35%	18.49%	17.68%	20.65%	22.51%	23.98%	25.09%	25.87%	26.33%	26.51%	26.42%	26.09%	25.56%
Property, plant & equipment, net	10.78%	10.68%	11.41%	12.43%	11.06%	10.40%	9.84%	9.33%	8.86%	8.41%	7.96%	7.51%	7.06%	6.62%
Other Non-Current Assets	13.35%	13.80%	16.90%	14.89%	14.89%	14.89%	14.89%	14.89%	14.89%	14.89%	14.89%	14.89%	14.89%	14.89%
Total non-current assets	59.09%	55.12%	54.53%	65.03%	52.05%	51.14%	50.20%	49.18%	48.09%	46.89%	45.60%	44.23%	42.80%	41.31%
Total assets	95.95%	89.46%	91.99%	122.72%	80.28%	79.29%	78.22%	77.05%	75.76%	74.33%	72.78%	71.12%	69.37%	67.55%
Accounts payable	14.97%	16.26%	16.34%	17.22%	17.22%	17.22%	17.22%	17.22%	17.22%	17.22%	17.22%	17.22%	17.22%	17.22%
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%	2.06%
Other current liabilities	12.98%	15.43%	15.35%	14.35%	14.35%	14.35%	14.35%	14.35%	14.35%	14.35%	14.35%	14.35%	14.35%	14.35%
Commercial paper	1.64%	2.53%	1.56%	3.04%	0.74%	0.74%	0.74%	0.73%	0.73%	0.72%	0.71%	0.71%	0.70%	0.69%
Term debt	2.63%	2.82%	2.56%	2.40%	0.71%	0.71%	0.70%	0.70%	0.69%	0.69%	0.68%	0.67%	0.67%	0.66%
Total current liabilities	34.30%	39.05%	37.91%	38.41%	35.08%	35.08%	35.07%	35.06%	35.05%	35.04%	35.03%	35.01%	35.00%	34.98%
Total debt	32.27%	28.36%	24.86%	30.80%	22.74%	22.46%	22.15%	21.82%	21.46%	21.05%	20.61%	20.14%	19.65%	19.13%
Other non-current liabilities	22.40%	20.70%	15.72%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%	15.00%
Total non-current liabilities	44.40%	37.56%	37.86%	37.71%	37.74%	37.46%	37.15%	36.82%	36.46%	36.05%	35.61%	35.14%	34.65%	34.13%
Total liabilities	78.70%	76.61%	75.78%	85.19%	72.82%	72.53%	72.23%	71.89%	71.51%	71.09%	70.64%	70.16%	69.65%	69.11%
Common Equity	15.68%	16.45%	19.26%	15.70%	18.44%	17.56%	16.65%	15.69%	14.71%	13.72%	12.73%	11.75%	10.79%	9.86%
Retained earnings	1.52%	-0.78%	-0.06%	22.50%	-4.02%	-8.10%	-10.39%	-12.56%	-13.26%	-13.84%	-13.24%	-12.77%	-11.56%	-10.80%
Accumulated other comprehensive income (loss)	0.04%	-2.82%	-2.99%	-0.68%	-2.85%	-2.71%	-2.57%	-2.41%	-2.26%	-2.10%	-1.95%	-1.79%	-1.64%	-1.50%
Total Equity	17.25%	12.85%	16.21%	37.53%	11.56%	6.75%	3.68%	0.71%	-0.81%	-2.22%	-2.46%	-2.81%	-2.41%	-2.44%

Cost of Capital Estimate (WACC)

Apple Inc.

Weighted Average Cost of Capital (WACC) Estimation

Cost of Equity:

Risk-Free Rate	4.25%
Beta	1.10
Equity Risk Premium	5.26%
Cost of Equity	10.05%

ASSUMPTIONS:

10-year treasury yield as of 11/04/2024
Historic Raw Average
1928-2023 geometric average of expected return less the risk free rate

Cost of Debt:

Risk-Free Rate	4.25%
Implied Default Premium	0.73%
Pre-Tax Cost of Debt	4.98%
Marginal Tax Rate	22%
After-Tax Cost of Debt	3.88%

10-year treasury yield as of 11/04/2024

From Bloomberg: 30Y YTM on AAPL corporate bond

Market Value of Common Equity:

Total Shares Outstanding	15744.00
Current Stock Price	\$222.01
MV of Equity	3,495,325.44

MV Weights

97.08%

Market Value of Debt:

Short-Term Debt	9822
Current Portion of LTD	0
Long-Term Debt	95281
PV of Operating Leases	0
MV of Total Debt	105,103.00

Include all sources of debt.

2.92%

Market Value of the Firm

3,600,428.44

100.00%

Estimated WACC

9.87%

Enterprise DCF and EP Valuation

DCF

Key Inputs:

CV Growth of NOPLAT	4.25%
CV Year ROIC	122.26%
WACC	9.87%
Cost of Equity	10.05%

Fiscal Years Ending 09/30/24	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
------------------------------	-------	-------	-------	-------	-------	-------	-------	-------	-------	-------

DCF Model:

Free Cash Flow (FCF)	78,729	92,992	101,547	110,984	122,387	135,508	151,510	170,314	193,339	220,815
Continuing Value (CV)										3,570,151
PV of FCF	71,659	77,040	76,572	76,172	76,455	77,049	78,412	80,228	82,895	1,530,714
Value of Operating Assets:	2,227,196									
Non-Operating Adjustments										
Excess Cash	130,189									
Marketable securities	198,830									
Other non current assets	113,717									
value of debt	(146,162)									
Value of Equity	2,523,770									
Shares Outstanding	13,150									
Intrinsic Value of Last FYE	191.92									
Implied Price as of Today	210.39									

Economic Profit

Ticker	Company	Price	EPS 2024E	EPS 2025E	P/E 24	P/E 25	Est. 5yr EPS gr.	PEG 24	PEG 25	BV Equity	Tangible BV Equity	P/B	Tangible P/B
MSFT	Microsoft	\$414.88	\$13.09	\$15.12	31.69	27.44	2.26	14.02	12.14	20.00	16.00	20.74	25.93
GOOGL	Alphabet	\$172.43	\$8.01	\$8.98	21.53	19.20	1.09	19.75	17.62	20.00	16.00	8.62	10.78
AMZN	Amazon	\$202.58	\$5.12	\$6.16	39.57	32.89	1.76	22.48	18.69	20.00	16.00	10.13	12.66
META	Meta Platforms	\$354.84	\$22.60	\$25.29	24.55	21.94	0.93	26.40	23.59	20.00	16.00	27.74	34.68
NVDA	NVIDIA Corporation	\$341.62	\$1.19	\$2.86	119.01	49.52	1.13	43.82	43.82				
TSLA	Tesla, Inc.	\$119.61	\$2.49	\$3.26	128.36	98.04	8.87	14.47	11.05				
			Average	60.78	41.50			16.19	21.15			16.81	21.01

AAPL	Apple Inc.	\$222.01	\$1.00	\$1.20	222.0	185.0	10.0	22.2	18.5	30.00	20.00	7.40	11.10
------	------------	----------	--------	--------	-------	-------	------	------	------	-------	-------	------	-------

Implied Relative Value:

P/E (EPS24)	\$ 60.78
P/E (EPS25)	\$ 49.80
PEG (EPS24)	\$ 161.87
PEG (EPS25)	\$ 253.81
P/B	\$ 504.27
P/Tangible BV	\$ 420.23

Fundamental P/E Valuation (DDM)

Apple Inc.

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

Fiscal Years Ending	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E
EPS	\$ 5.34	\$ 5.55	\$ 6.33	\$ 6.73	\$ 7.66	\$ 8.26	\$ 9.42	\$ 10.24	#####	\$ 12.72
Key Assumptions										
CV growth of EPS	4.25%									
CV Year ROE	-896.08%									
Cost of Equity	10.05%									
Future Cash Flows										
P/E Multiple (CV Year)										17.33
EPS (CV Year)										\$ 12.72
Future Stock Price										\$ 220.40
Dividends Per Share	1.14	1.39	1.70	2.07	2.52	3.07	3.74	4.55	5.55	
Discounted Cash Flows	1.04	1.15	1.27	1.41	1.56	1.73	1.91	2.12	2.34	\$ 93.12
Intrinsic Value as of Last FYE	\$ 107.65									
Implied Price as of Today	\$ 118.01									

Relative Multiple Valuation

Ticker	Company	Price	EPS		P/E		Est. 5yr			BV		Tangible	
			2024E	2025E	P/E 24	P/E 25	EPS gr.	PEG 24	PEG 25	Equity	BV Equity	P/B	Tangible P/B
MSFT	Microsoft	\$414.88	\$13.09	\$15.12	31.69	27.44	2.26	14.02	12.14	20.00	16.00	20.74	25.93
GOOGL	Alphabet	\$172.43	\$8.01	\$8.98	21.53	19.20	1.09	19.75	17.62	20.00	16.00	8.62	10.78
AMZN	Amazon	\$202.58	\$5.12	\$6.16	39.57	32.89	1.76	22.48	18.69	20.00	16.00	10.13	12.66
META	Meta Platforms	\$554.84	\$22.60	\$25.29	24.55	21.94	0.93	26.40	23.59	20.00	16.00	27.74	34.68
NVDA	NVIDIA Corporation	\$141.62	\$1.19	\$2.86	119.01	49.52	1.13	-	43.82				
TSLA	Tesla, Inc.	\$319.61	\$2.49	\$3.26	128.36	98.04	8.87	14.47	11.05				
			Average		60.78	41.50		16.19	21.15			16.81	21.01
AAPL	Apple Inc.	\$222.01	\$1.00	\$1.20	222.0	185.0	10.0	22.2	18.5	30.00	20.00	7.40	11.10
Implied Relative Value:													
	P/E (EPS24)		\$ 60.78										
	P/E (EPS25)		\$ 49.80										
	PEG (EPS24)		\$ 161.87										
	PEG (EPS25)		\$ 253.81										
	P/B		\$ 504.27										
	P/Tangible BV		\$ 420.23										

Historical and Forecasted Key Management Assumptions

The area below is for calculating HISTORICAL metrics to referenced when building forecasts.

	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
Depreciation Rate:											
Depreciation Expense	7946.00	11257.00	10505.00	10157.00	10903.00	12547.00	11056.00	11284.00	11104.00	11519.00	
Beginning Net PPE	0	20624	22471	27010	33783	41304	37378	36766	39440	42117	
Implied Depreciation Rate (%)	#DIV/0!	54.58%	46.75%	37.60%	32.27%	30.38%	29.58%	30.69%	28.15%	27.35%	35.26% Average
Marginal Tax Rate (%)											
US Statutory (Federal) Tax (%)	35.00%	35.00%	35.00%	35.00%	24.50%	21.00%	21.00%	21.00%	21.00%	21.00%	
State and Local Tax (%)	0.88%	0.94%	0.90%	0.29%	0.37%	0.64%	0.63%	1.05%	1.27%	0.99%	
Foreign Income Tax (%)	-8.87%	-8.92%	-9.10%	-8.75%	-7.69%	-3.99%	-3.78%	-4.32%	-3.67%	-5.07%	
Implied Marginal Tax Rate	27.01%	27.02%	26.81%	26.54%	17.18%	17.65%	17.85%	17.74%	18.61%	16.93%	21.33% Average
Normal Cash Calculation (%)											
Cash from B/S	13844	21120	20484	20289	25913	48844	38016	34940	23646	29965	
Revenue	182795	233715	215639	229234	265595	260174	274515	365817	394328	383285	
Cash as a % of Sales	7.57%	9.04%	9.50%	8.85%	9.76%	18.77%	13.85%	9.55%	6.00%	7.82%	6.00% Minimum
Dividend Payout Ratio (%)											
Total Dividends	11075.6	11391.9	11926.2	12521.4	13479	13853.3	13794.8	14195.9	14594.4	14799.4	
Net Income	39510.00	53394.00	45687.00	48351.00	59531.00	55256.00	57411.00	94680.00	99803.00	96995.00	
Implied Payout Ratio (%)	28.03%	21.34%	26.10%	25.90%	22.64%	25.07%	24.03%	14.99%	14.62%	15.26%	21.80% Average
Short Term Debt (%)											
Non Cash Assets	217995	269359	301202	355030	339812	289672	285872	316062	329109	322618	
S-T Debt	-	2500	3500	6496	8784	10260	8773	9613	11128	9822	
Short Term Debt	#VALUE!	0.00928	0.01162	0.0183	0.02585	0.03542	0.03069	0.03041	0.03381	0.03044	2.51% Average
Short Term Debt (%)											
Non Cash Assets	217995	269359	301202	355030	339812	289672	285872	316062	329109	322618	
S-T Debt	-	2500	3500	6496	8784	10260	8773	9613	11128	9822	
Short Term Debt	#VALUE!	0.00928	0.01162	0.0183	0.02585	0.03542	0.03069	0.03041	0.03381	0.03044	2.51% Average
Balance Sheet Balance											
Total Equity	46376	28494	16436	3378	-4086	-12113	-14461	-17944	-16816	-18660	
Total Liabilities	292122	306071	322243	340906	362383	387060	415388	447896	485195	527996	
Total Assets	322056	334569	349000	365405	383905	404679	427964	454048	483282	516080	
Total Equity + Total Liabilities	338498	334565	338679	344283	358297	374947	400927	429951	468379	509336	
Cash value	16442	-4	-10321	-21121	-25608	-29732	-27037	-24097	-14903	-6743	
Cash Value	152093	251866	361023	478181	604355	740390	887009	1044844	1214444	1396275	
Commercial paper (%)											
Non cash Assets	217995	269359	301202	355030	339812	289672	285872	316062	329109	322618	
Commercial paper	6308	8499	8105	11977	11964	5980	4996	6000	9982	5985	
Commercial paper	0.02894	0.03155	0.026908852	0.03374	0.03521	0.02064	0.01748	0.01898	0.03033	0.01855	2.62% Average
L-T Debt (%)											
Non cash assets total	231839	290479	321686	375319	365725	338516	323888	351002	352755	352583	
L-t debt	-	55701	78384	104021	104193	101679	106078	118063	111824	95281	
L-T Debt (%)	#VALUE!	0.19176	0.243666184	0.27715	0.28489	0.30037	0.32751	0.33636	0.317	0.27024	28.32% Average
Deferred tax											
	\$2,347	\$4,938	\$5,966	(\$32,590)	(\$340)	(\$215)	(\$4,774)	\$895	\$0	\$895	\$895
	(\$2,591)	\$37,528	\$6,306	(\$32,375)	\$4,434	(\$1,110)	(\$4,774)	(\$0)			(\$2,488)
	0.90582787	0.13158	0.85	0.45	-0.0767	0.19369	1	-2910			0.30756

Sensitivity Tables

Apple Inc.

Sensitivity Tables

		Cv EPS Growth							
		191.92	3.50%	3.75%	4.00%	4.25%	4.50%	4.75%	5.00%
Cost of Equity	8.55%	193.34	193.34	193.34	193.34	193.34	193.34	193.34	193.34
	9.05%	192.85	192.85	192.85	192.85	192.85	192.85	192.85	192.85
	9.55%	192.37	192.37	192.37	192.37	192.37	192.37	192.37	192.37
	10.05%	191.92	191.92	191.92	191.92	191.92	191.92	191.92	191.92
	10.55%	191.48	191.48	191.48	191.48	191.48	191.48	191.48	191.48
	11.05%	191.05	191.05	191.05	191.05	191.05	191.05	191.05	191.05
	11.55%	190.64	190.64	190.64	190.64	190.64	190.64	190.64	190.64

		Equity Risk premium							
		191.92	4.51%	4.76%	5.01%	5.26%	5.51%	5.76%	6.01%
Beta	0.80	308.04	291.78	277.16	263.95	251.96	241.03	231.02	
	0.90	273.66	259.26	246.31	234.63	224.02	214.35	205.51	
	1.00	246.26	233.35	221.75	211.28	201.78	193.12	185.20	
	1.10	223.93	212.24	201.74	192.26	183.67	175.84	168.69	
	1.20	205.39	194.72	185.14	176.50	168.66	161.52	155.00	
	1.30	189.77	179.97	171.16	163.22	156.03	149.48	143.49	

		Risk free Rate							
		191.92	3.50%	3.75%	4.00%	4.25%	4.50%	4.75%	5.00%
Equity Risk Pre	4.76%	247.05	234.06	222.39	211.86	202.30	193.60	185.64	
	5.01%	232.81	221.26	210.84	201.38	192.76	184.87	177.63	
	5.26%	220.15	209.83	200.46	191.92	184.10	176.92	170.31	
	5.51%	208.83	199.55	191.09	183.34	176.22	169.66	163.60	
	5.76%	198.66	190.27	182.59	175.53	169.02	163.00	157.42	

		Cv Noplat Growth							
		191.92	3.50%	3.75%	4.00%	4.25%	4.50%	4.75%	5.00%
W a c c	9.12%	201.88	207.40	213.46	220.14	227.55	235.80	245.05	
	9.37%	193.51	198.44	203.84	209.76	216.29	223.53	231.60	
	9.62%	185.83	190.26	195.09	200.36	206.15	212.54	219.61	
	9.87%	178.77	182.76	187.09	191.81	196.97	202.63	208.87	
	10.12%	172.25	175.86	179.76	183.99	188.61	193.65	199.18	
	10.37%	166.21	169.48	173.01	176.83	180.97	185.47	190.40	
	10.62%	160.61	163.58	166.78	170.23	173.96	178.01	182.41	

		Risk Free Rate							
		191.92	3.50%	3.75%	4.00%	4.25%	4.50%	4.75%	5.00%
Cv Noplat Growth	3.75%	207.47	198.54	190.36	182.86	175.94	169.55	163.63	
	4.00%	213.50	203.92	195.19	187.20	179.85	173.09	166.84	
	4.25%	220.15	209.83	200.46	191.92	184.10	176.92	170.31	
	4.50%	227.52	216.35	206.25	197.08	188.73	181.08	174.06	
	4.75%	235.73	223.57	212.63	202.75	193.79	185.61	178.13	
	5.00%	244.93	231.61	219.70	209.00	199.34	190.57	182.57	

		Cost of Equity							
		191.92	8.55%	9.05%	9.55%	10.05%	10.55%	11.05%	11.55%
Pre-tax Cost of	4.48%	191.83	191.34	190.87	190.41	189.98	189.55	189.15	
	4.73%	192.58	192.09	191.62	191.16	190.73	190.30	189.90	
	4.98%	193.34	192.85	192.37	191.92	191.48	191.05	190.64	
	5.23%	194.10	193.61	193.13	192.67	192.23	191.80	191.39	
	5.48%	194.87	194.37	193.89	193.42	192.98	192.55	192.14	

Share Repurchase

Apple Inc.

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

Number of Options Outstanding (shares):	269,805	
Average Time to Maturity (years):	2.50	
Expected Annual Number of Options Exercised:	107,922	As of September 30, 2023, the total unrecognized compensation cost related to outstanding RSUs was \$18.6 billion, which the Company expects to recognize over a weighted-average period of 2.5 years.
Current Average Strike Price:	\$ 139.37	
Cost of Equity:	10.05%	
Current Stock Price:	\$222.01	

Fiscal Years Ending 09/30/24	2023	2024E	2025E	2026E	2027E	2028E	2029E	2030E	2031E	2032E	2033E	2034E
Increase in Shares Outstanding:		107,922	107,922	107,922	107,922	107,922	107,922	107,922	107,922	107,922	107,922	107,922
Average Strike Price:	\$ 139.37	\$ 139.37	\$ 139.37	\$ 139.37	\$ 139.37	\$ 139.37	\$ 139.37	\$ 139.37	\$ 139.37	\$ 139.37	\$ 139.37	\$ 139.37
Increase in Common Stock Account:		15,041,319	15,041,319	15,041,319	15,041,319	15,041,319	15,041,319	15,041,319	15,041,319	15,041,319	15,041,319	15,041,319
Share Repurchases (\$)	100000	80,390	80,390	80,390	80,390	80,390	80,390	80,390	80,390	80,390	80,390	80,390
Expected Price of Repurchased Shares:	\$222.01	\$ 222.01	\$ 243.37	\$ 266.79	\$ 292.47	\$ 320.61	\$ 351.47	\$ 385.29	\$ 422.36	\$ 463.01	\$ 507.57	
Number of Shares Repurchased:	450.43	362	330	301	275	251	229	209	190	174	158	
Shares Outstanding (beginning of the year)	15550.00	15,550	15,188	14,858	14,556	14,281	14,031	13,802	13,593	13,403	13,229	13,070.96
Plus: Shares Issued Through ESOP		0	0	0	0	0	0	0	0	0	0	0
Less: Shares Repurchased in Treasury		362	330	301	275	251	229	209	190	174	158	-
Shares Outstanding (end of the year)		15,188	14,858	14,556	14,281	14,031	13,802	13,593	13,403	13,229	13,071	13,070.96

Inputs worksheet

Apple Inc.

Key Assumptions of Valuation Model

Ticker Symbol	AAPL
Current Share Price	\$222.01
Current Model Date	9/30/2024
FY End (month/day)	09/30/24
Last FYE Date	9/30/2023
Next FYE Date	9/30/2024
Pre-Tax Cost of Debt	4.98%
Beta	1.10
Risk-Free Rate	4.25%
Equity Risk Premium	5.26%
CV Growth of NOPLAT	4.25%
CV Growth of EPS	4.25%
Current Dividend Yield	0.42%
Forecasted Marginal Tax Rate	22.00%
Forecasted Effective Tax Rate	25.00%
Cost of Equity	10.05%
WACC	9.87%
Normal Cash Estimate (% sale	6.00%
Average Revenues growth	1.03
ROI (1 year treasury)	4.17%
Average Share Repurchase \$	(\$60,779)
Share repurchase price 2023	162.632696
share repurchase average	(\$373.72)
Dividen increase per year	0.04
Average CapEx	(\$10,987)
Inflation	3%
Par Value	0.00001
Volility	20.762
