Apple Inc. - Financial Analysis Report

# A. Business Analysis

## 1. Company Overview

Apple Inc. (NASDAQ: AAPL) was founded in 1976 by Steve Jobs, Steve Wozniak, and Ronald Wayne. Headquartered in Cupertino, California, Apple is a global leader in consumer technology, known for innovation in both hardware and software.

## 2. Products and Services

Apple’s core products include the iPhone, Mac, iPad, and Apple Watch. Its service portfolio features the App Store, Apple Music, iCloud, Apple TV+, and Apple Pay. In FY2023, services contributed significantly to recurring revenue and customer stickiness.

## 3. Market Position and Growth

Apple grows through both internal innovation and strategic acquisitions. Despite global macroeconomic pressures, it maintains strong demand, with India and other emerging markets becoming new growth engines.

## 4. Competitors and Market Share

Major competitors include Samsung, Microsoft, Google, Huawei, and Xiaomi. Apple holds approximately 20% of global smartphone unit sales but captures over 80% of industry profits due to its premium pricing and brand loyalty.

Source: Apple FY2023 Annual Report, Yahoo Finance, NASDAQ.

# B. Ratio and Valuation Analysis

## 1. Profitability Ratios (FY2023)

|  |  |
| --- | --- |
| Ratio | Value |
| Gross Profit Margin | 41.7% |
| Operating Profit Margin | 29.8% |
| Net Profit Margin | 25.3% |
| Return on Assets (ROA) | 27.5% |
| Return on Equity (ROE) | 156.1% |
| Earnings Per Share (EPS) | $6.17 |

## 2. Liquidity Ratios

|  |  |
| --- | --- |
| Ratio | Value |
| Current Ratio | 0.99 |
| Quick Ratio | 0.96 |
| Cash Ratio | 0.20 |

## 3. Valuation Ratios

|  |  |
| --- | --- |
| Ratio | Value |
| P/E Ratio | 30.8 |
| Dividend Payout Ratio | 15.7% |
| Debt-to-Equity Ratio | 4.67 |
| Sustainable Growth Rate | 25.1% |

## 4. CAPM and Beta Analysis

Using one year of daily return data, we conducted a regression of Apple’s returns against the S&P500:  
- Beta (β) = 1.28  
This indicates Apple’s stock is slightly more volatile than the overall market.  
  
Applying the Capital Asset Pricing Model (CAPM):  
ROE = Rf + β × (Rm - Rf) = 3.5% + 1.28 × (10% - 3.5%) = 11.82%  
This suggests investors can expect around 11.8% annual return from Apple stock based on market risk.

# C. Technical Analysis

This section evaluates Apple Inc.'s stock trend using quantitative tools to assess short-term movement and volatility.

## 1. Stock Price Trend (Last 1 Year)

The historical daily closing price of Apple stock over the past 12 months was visualized using a line chart. This trend shows seasonal ups and downs, with noticeable peaks around mid-2023 and early 2024. Overall, the stock shows an upward bias with short-term volatility.

Refer to the chart captured from the Jupyter Notebook for detailed visualization.

Apple Stock Price (Last 1 Year)

A graph showing a line graph

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## 2. Monte Carlo Simulation (100 Simulations – 30 Days Forecast)

To estimate potential short-term price paths, we conducted a Monte Carlo simulation using Apple's recent daily returns. The simulation used the average daily return (mean) and standard deviation (volatility) to generate 100 random future paths over a 30-day period.

Results show a range of possible outcomes with predicted stock prices fluctuating between approximately $165 and $205. This indicates moderate risk with a relatively symmetric return distribution.

Refer to the simulation chart for visual results.

Monte Carlo Simulation Chart

A graph of different colored lines

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## 4. Beta Calculation via Regression

To measure Apple's market risk exposure, we performed a linear regression between the daily returns of Apple Inc. and the S&P 500 index.

The scatter plot shows a positive correlation between the two assets. The red line represents the regression line, and its slope (beta) is approximately 1.28, which indicates that Apple’s stock moves slightly more than the overall market.  
A beta greater than 1 suggests moderate volatility relative to the market and implies Apple’s stock is sensitive to market-wide movements, but still within a rational range for a large-cap stock.

A graph with a red line

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**5. Intrinsic Value per Share vs. WACC**

This chart illustrates how Apple’s estimated intrinsic value per share changes as the Weighted Average Cost of Capital (WACC) varies.

Using a perpetuity-based DCF valuation, the model shows that as WACC increases, the intrinsic value of each share declines. For instance:

At 6% WACC, the intrinsic value per share is over $100

At 9% WACC (our base case), the intrinsic value is approximately $70.64

At 12% WACC, the value drops below $60

This visualization demonstrates that Apple’s valuation is highly sensitive to the assumed discount rate, which must be considered carefully in investment decisions.

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## 6. FB Prophet Forecast (30 Days)

We also applied Facebook Prophet, a time-series forecasting tool, to predict Apple’s stock prices over the next 30 days. The model automatically detects trends and seasonality in time series data.

The output shows a stable price projection with narrow confidence intervals. This supports the Monte Carlo result and suggests that Apple's short-term stock movement is likely to remain within a predictable range.

Refer to the Prophet forecast chart from the Jupyter Notebook.

FB Prophet Forecast Chart

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**D. Investment Recommendation**

Based on the financial ratios, intrinsic valuation, and technical analysis, we recommend a HOLD strategy for Apple Inc. (AAPL).

Although the intrinsic valuation model estimates the stock’s fair value at approximately $70.64 per share, well below the current market price of around $190 (as of March 2024), Apple’s strong profitability, loyal customer base, diversified revenue from services, and consistent innovation justify its premium valuation.

The Monte Carlo simulation further indicates stability with moderate upside, suggesting that Apple remains a strong long-term holding. Therefore, we do not advise immediate purchase, but recommend holding existing positions.