# Deconstructing Return on Equity (ROE) Using the DuPont Analysis Framework

## 1. Company Selection

For this analysis, two publicly traded companies from different industries were selected:
- Apple Inc. (AAPL) – Technology Industry
- Amazon.com, Inc. (AMZN) – Retail/Technology Industry

## 2. Financial Data (2021-2023)

The financial data for the past three years are summarized below:

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Company | Year | Net Income (M) | Revenue (M) | Total Assets (M) | Total Equity (M) | Total Liabilities (M) |
| Apple | 2021 | 94,680 | 365,817 | 351,002 | 63,090 | 287,912 |
| Apple | 2022 | 99,803 | 394,328 | 352,755 | 50,672 | 302,083 |
| Apple | 2023 | 97,000 | 394,300 | 352,800 | 50,700 | 302,100 |
| Amazon | 2021 | 33,364 | 469,822 | 420,549 | 138,245 | 282,304 |
| Amazon | 2022 | -2,722 | 513,983 | 462,675 | 121,141 | 341,534 |
| Amazon | 2023 | 30,400 | 574,800 | 527,800 | 134,500 | 393,300 |

## 3. DuPont Decomposition (2023)

DuPont Analysis Formula:

Return on Equity (ROE) = Net Profit Margin × Asset Turnover × Equity Multiplier
Where:
- Net Profit Margin = Net Income ÷ Revenue
- Asset Turnover = Revenue ÷ Total Assets
- Equity Multiplier = Total Assets ÷ Total Equity

### Apple (AAPL) – 2023

- Net Profit Margin = 97,000 ÷ 394,300 ≈ 24.6%
- Asset Turnover = 394,300 ÷ 352,800 ≈ 1.12
- Equity Multiplier = 352,800 ÷ 50,700 ≈ 6.96
- ROE ≈ 24.6% × 1.12 × 6.96 ≈ 191.7%

### Amazon (AMZN) – 2023

- Net Profit Margin = 30,400 ÷ 574,800 ≈ 5.29%
- Asset Turnover = 574,800 ÷ 527,800 ≈ 1.09
- Equity Multiplier = 527,800 ÷ 134,500 ≈ 3.92
- ROE ≈ 5.29% × 1.09 × 3.92 ≈ 22.6%

## 4. Interpretation & Analysis

|  |  |  |
| --- | --- | --- |
| Metric | Apple (AAPL) | Amazon (AMZN) |
| Net Profit Margin | 24.6% | 5.29% |
| Asset Turnover | 1.12 | 1.09 |
| Equity Multiplier | 6.96 | 3.92 |
| ROE | 191.7% | 22.6% |

Comparing the two companies:

* Apple’s ROE is driven mainly by very strong profitability (high Net Profit Margin) and significant financial leverage (high Equity Multiplier).
* Amazon’s ROE, while much lower, is supported by its efficient asset use (similar Asset Turnover) but impacted by thinner profit margins.
* Apple's high-margin product strategy (iPhone, services) leads to strong profitability, while Amazon operates on tighter margins due to high competition in e-commerce.
* Amazon’s leverage is lower compared to Apple, indicating a more conservative approach to debt compared to Apple’s aggressive financial strategy.
* Industry Context:
 - Tech companies like Apple rely more on high margins.
 - Retail companies like Amazon focus on volume and operational efficiency rather than profit margins.

## 5. Key Insights and Takeaways

* Apple's ROE is substantially higher due to its strategic advantage in profitability and its use of financial leverage.
* Amazon’s performance is recovering after a difficult 2022 (net loss) and demonstrates strength in operational scale.
* Different industry characteristics play a vital role: Tech companies enjoy stronger margins, while retailers operate on tighter margins but compensate with asset efficiency.
* Leverage (Equity Multiplier) significantly impacts the final ROE figure for both companies.

## References:

- Apple Inc. 2023 Annual Report (Form 10-K): <https://www.sec.gov/ix?doc=/Archives/edgar/data/0000320193/000032019323000066/aapl-20230930.htm>

- Amazon.com, Inc. 2023 Annual Report (Form 10-K): <https://www.sec.gov/ix?doc=/Archives/edgar/data/0001018724/000101872424000004/amzn-20231231.htm>

- Yahoo Finance – Apple Financials: <https://finance.yahoo.com/quote/AAPL/financials/>

- Yahoo Finance – Amazon Financials: [Amazon.com, Inc. (AMZN) Income Statement - Yahoo Finance](https://finance.yahoo.com/quote/AMZN/financials/)