# 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.

It is important to recognize that Apple’s exceptionally high ROE of 191.7% is significantly influenced by its extensive share buyback program. These repurchases have reduced the total equity reported on Apple’s balance sheet, which increases the equity multiplier and thus inflates the ROE. While this can signal effective capital return to shareholders, it also introduces greater financial risk due to increased reliance on liabilities.

It is worth noting that Amazon’s net loss in 2022 was primarily driven by non-operating investment losses, such as the markdown in value of its equity investment in Rivian Automotive. This loss does not reflect a fundamental weakness in its core e-commerce or cloud computing businesses, which continued to perform steadily.

## 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/)