

# Profitability Analysis

Gross Profit Margin				
GICS Sector	year 1	year 2	year 3	year 4
Consumer Discretionary	30.04%	29.46%	30.88%	31.36%
Consumer Staples	26.32%	26.24%	26.20%	26.60%
Energy	29.09%	28.58%	28.32%	31.29%
Financials	66.86%	71.07%	70.09%	69.51%
Health Care	35.79%	34.26%	34.09%	34.48%
Industrials	35.62%	36.69%	38.62%	39.88%
Information Technology	46.7%	48.5%	48.8%	49.9%
Materials	30.62%	30.40%	28.53%	26.12%
Real Estate	55.41%	54.81%	54.74%	54.48%
Telecommunications Services	58.62%	61.48%	57.91%	57.55%
Utilities	39.14%	38.51%	38.68%	41.67%

Operating Profit Margin				
GICS Sector	year 1	year 2	year 3	year 4
Consumer Discretionary	10.56%	9.46%	10.51%	10.31%
Consumer Staples	9.61%	9.99%	9.76%	9.85%
Energy	12.16%	11.21%	8.97%	1.01%
Financials	18.45%	21.99%	21.59%	22.99%
Health Care	11.53%	10.67%	10.28%	11.00%
Industrials	11.53%	12.51%	12.93%	13.37%
Information Technology	21.14%	22.24%	23.16%	23.05%
Materials	14.51%	14.30%	12.68%	8.09%
Real Estate	25.47%	24.46%	25.86%	25.27%
Telecommunications Services	11.18%	24.03%	12.52%	20.24%
Utilities	19.19%	19.07%	19.00%	20.23%

Analyze the profitability of sectors based on **Gross Profit Margin (GPM)** and **Operating Profit Margin (OPM)** over four years. Here's a summary:

### **Most Profitable Sectors**

### Gross Profit Margin (GPM):

**Financials**: The highest gross profit margin (ranging from 66.86% to 71.07%)

**Telecommunications Services**: Second highest gross profit margin (ranging from 57.55% to 61.48%).

Real Estate: Maintains a high GPM (above 54% across all years).

## Operating Profit Margin (OPM):

**Financials**: The highest operating profit margin (ranging from 18.45% to 22.99%).

**Real Estate**: Consistently strong operating profit margin (ranging from 24.46% to 25.86%).

**Utilities**: Solid OPM performance (above 19% in all years).

### **Least Profitable Sectors**

## Gross Profit Margin (GPM):

Consumer Staples: Low GPM, ranging from 26.24% to 26.90%. Health Care: Ranges from 34.26% to 35.79%, consistently low. Energy: Fluctuates but remains relatively low, from 28.25% to 31.29%.

### Operating Profit Margin (OPM):

**Energy**: Very low OPM, especially in the last year (declining to just 1.01%).

**Consumer Staples**: Low OPM, hovering around 9.61% to 9.99%. **Health Care**: Margins are relatively low, ranging from 10.28% to 11.53%.

#### Insights

**Financials** dominate both GPM and OPM, making it the most consistently profitable sector.

**Energy** and **Consumer Staples** struggle in terms of operating profitability. Some sectors, such as **Utilities** and **Telecommunications Services**, show strong GPM but lower OPM, indicating potential high operating costs.

GICS Sector Performance: Insights for the S&P 500.



## **Growth Analysis**

Growth Analysis				Growth P	ate Analysi	S
GICS Sector	year 2	year 3	year 4	year 2	year 3	year 4
Consumer Discretionary	\$ 52,869,756,000.00	\$ 74,167,619,000.00	\$ 90,178,005,000.00	4.05%	5.46%	6.29%
Consumer Staples	\$ 39,725,183,000.00	\$ 24,889,694,000.00	\$ 5,684,262,000.00	2.86%	1.74%	0.39%
Energy	\$ 13,541,376,000.00	\$ -94,182,983,000.00	\$-428,153,570,000.00	1.00%	-6.89%	-33.66%
Financials	\$-34,794,786,000.00	\$ 7,119,582,000.00	\$ -7,209,083,000.00	-3.96%	0.84%	-0.85%
Health Care	\$ 75,528,204,000.00	\$131,840,334,000.00	\$ 112,492,395,000.00	7.84%	12.68%	9.61%
Industrials	\$ 18,456,359,000.00	\$ 8,422,968,000.00	\$ -11,581,402,000.00	1.83%	0.82%	-1.12%
Information Technology	\$ -9,176,586,000.00	\$ 47,409,553,000.00	\$ -73,575,708,000.00	-1.0%	5.2%	-7.7%
Materials	\$ 6,331,258,000.00	\$ 3,994,071,000.00	\$ -43,597,920,000.00	2.22%	1.37%	-14.75%
Real Estate	\$ 6,758,714,000.00	\$ 7,904,060,000.00	\$ 5,093,175,000.00	12.29%	12.80%	7.31%
Telecommunications Services	\$ 5,428,147,000.00	\$ 10,634,000,000.00	\$ 21,020,000,000.00	1.99%	3.82%	7.27%
Utilities	\$ 12,788,282,000.00	\$ 13,789,543,000.00	\$ -5,629,637,000.00	5.07%	5.20%	-2.02%

**The Growth Rate Analysis** examines the year-over-year percentage changes across the Global Industry Classification Standard (GICS) sectors over four years. Here's a summary of consistent patterns:

## **Sectors with Consistent Growth:**

Consumer Discretionary: Steady growth over the years, with rates improving from 4.05% in Year 2 to 6.29% in Year 4.

Health Care: Exhibits consistent positive growth, peaking at 12.68% in Year 3 and maintaining 9.61% in Year 4.

Telecommunications Services: Growth has gradually increased, with Year 4 showing the highest growth at 7.27%.

## **Sectors with Consistent Decline:**

**Energy**: Experienced a sharp decline, with the most significant drop of -33.66% in Year 4.

Materials: Showed growth initially but saw a severe decline of -14.75% by Year 4.

Information Technology: Persistent negative growth, with the lowest rate at -7.7% in Year 4.

#### **Mixed Performance:**

Utilities: Growth declined from 5.07% in Year 2 to -2.02% in Year 4.

Industrials: While growth was positive initially, it dipped to -1.12% by Year 4.

**Financials**: Exhibited volatility, with negative growth rates throughout.



## Efficiency Ratios Analysis

Efficiency Ratios				
GICS Sector	year 1	year 2	year 3	year 4
Consumer Discretionary	70%	71%	69%	69%
Consumer Staples	74%	74%	74%	73%
Energy	71%	71%	72%	69%
Financials	33%	29%	30%	30%
Health Care	64%	66%	66%	66%
Industrials	64%	63%	61%	60%
Information Technology	53%	52%	51%	50%
Materials	69%	70%	71%	74%
Real Estate	45%	45%	45%	46%
Telecommunications Services	41%	39%	42%	42%
Utilities	61%	61%	61%	58%

The Efficiency Ratios compare the Cost of Goods Sold (COGS) to total revenue, highlighting how effectively each sector manages its costs. A lower ratio signifies better cost management and higher operational efficiency.

### **Observations by Sector:**

#### **Consumer Discretionary:**

Ratios remain relatively stable (70%-69%) over the four years, suggesting consistent cost management.

#### **Consumer Staples:**

Slight decrease from 74% to 73%, indicating marginal improvements in efficiency.

#### Energy:

Ratios decreased from 71% to 69%, showcasing gradual improvements in cost efficiency.

#### Financials:

Efficiency ratios are relatively low, remaining around 30%, signifying strong cost management and operational efficiency.

#### **Health Care**:

Ratios remain relatively stable (64%-66%) over the four years, suggesting consistent cost management.

#### Industrials:

Declining ratios (64% to 60%), showing consistent improvements in cost control.

### Information Technology:

Efficiency worsened slightly, with ratios declining from 53% to 50%, highlighting a need for better cost management.

#### Materials:

Efficiency increased slightly from 69% to 74%, signaling a need to control costs better **Real Estate**:

Ratios remain stable (45%-46%), maintaining a consistent level of cost efficiency.

#### **Telecommunications Services:**

Minimal changes (41%-42%), indicating steady cost efficiency but room for improvement. **Utilities**:

Efficiency decreased slightly from 61% to 58%.

#### **Key Takeaways:**

**Most Efficient Sectors**: Financials and Telecommunications Services exhibit the lowest ratios, indicating high efficiency.

Improving Sectors: Information Technology and Industrials show marked improvement in cost efficiency.



# Research & Development

Research & Development				
GICS Sector	year 1	year 2	year 3	year 4
Consumer Discretionary	\$ 526,970,000.00	\$ 572,514,000.00	\$ 617,677,000.00	\$ 669,987,000.00
Consumer Staples	\$ 1,218,112,000.00	\$ 1,618,583,000.00	\$ 1,988,677,000.00	\$ 2,425,695,000.00
Energy	\$ 571,235,000.00	\$ 628,905,000.00	\$ 482,104,000.00	\$ 394,269,000.00
Financials	\$ 62,630,000.00	\$ 61,800,000.00	\$ 60,200,000.00	\$ 55,500,000.00
Health Care	\$47,801,208,000.00	\$48,340,505,000.00	\$52,340,604,000.00	\$55,640,583,000.00
Industrials	\$13,730,050,000.00	\$14,407,012,000.00	\$14,220,931,000.00	\$15,341,756,000.00
Information Technology	\$74,076,692,000.00	\$80,730,647,000.00	\$84,474,747,000.00	\$85,756,551,000.00
Materials	\$ 6,048,332,000.00	\$ 5,883,484,000.00	\$ 5,460,350,000.00	\$ 5,105,672,000.00
Real Estate	\$ 64,210,000.00	\$ 33,000,000.00	\$ 27,000,000.00	\$ 24,000,000.00
Telecommunications Services	\$ -	\$ -	\$ -	\$ -
Utilities	\$ -	\$ -	\$ -	\$ -

## **Analysis of Research & Development Expenses Across Sectors**

By analyzing the R&D spending across different GICS sectors, we can identify which industries prioritize innovation and technological advancements.

# **Mathematical Report Mathematical Report**

**Information Technology** leads with the highest investment in R&D, reflecting its innovation-driven nature.

**Healthcare** shows consistent growth in R&D expenses, emphasizing the focus on advancements in medical technologies and pharmaceuticals.

Industrials maintain steady R&D spending, showcasing their commitment to innovation in engineering and manufacturing.









