Task 1

Ratio Analysis

Ratio analysis is like a financial detective tool. It helps us figure out how well a company is doing by looking at its money-related reports, like the balance sheet and income statement. This tool gives us clues about important stuff, like if the company has enough cash, if it's running smoothly, and if it's making good profits. It's basically a key part of understanding a company's overall health in the world of business.

price to book value= market capitalization/ book value of equity

book value per share= (shareholders equity-preferred equity)/weighted average common of shares outstanding

common shares outstanding= company market capitalization/current share price

Book value per share

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2020 | 2021 | 2022 |
| Shareholder Equity | 65,339 | 63,090 | 50,672 |
| Outstanding Shares | 4,754,986 | 4,754,986 | 4,754,986 |
| Book Value Per Share | 0.0137 | 0.0133 | 0.0106 |

Market Capitalization = Market PPS X Total Shares Outstanding

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Market PPS | $150.43 | $146.92 | $112.28 |
| Total Shares Outstanding | 4,754,986 | 4,754,986 | 4,754,986 |
| Market Capitalization  | 715,273,292.98 | 698,651,963.12 | 534,758,352.08 |

Common shares outstanding = company market capitalization/current share price

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| CMC | 715,273,292.98 | 698,651,963.12 | 534,758,352.08 |
| Current Share Price | $150.43 | $146.92 | $112.28 |
| CSO | 4,756,125.11 | 4,754,986 | 4,754,986 |

Price to book ratio = Market price per share/Book value per share

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Market PPS | 150.43 | 146.92 | 112.28 |
| Book Value PS | 0.0137 | 0.0133 | 0.0106 |
| PBV  | 10,970.8 | 11,030.08 | 10,574.72 |

Effective Tax Rate Formula

The effective tax rate can be calculated for historical periods by dividing the taxes paid by the pre-tax income, (earnings before tax)

The formula is as follows:

Effective Tax Rate (%) = Taxes Paid / Pre-Tax Income (EBT)



The two lines highlighted are out of Apples 2020-2022 Financial report this is the date to calculate our effective tax rate.

2020: $9,680 million / $67,091 million = 14.4%

2021: $14,527 million / 109,207 million = 13.3%

2022: $19,300 million / $119,103 million = 16.2%

Gross Profit = Revenue – COGS

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Revenue | 394,328 million | 365,817 million | 274,515 million |
| COGS | 223,546 million | 212,981 million | 169,559 million  |
| Gross Profit | 170,782 million | 152,836 million | 104,956 million |



Operating Profit = Gross Profit – Operating Expenses

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Gross Profit | 170,782 million | 152,836 million | 104,956 million |
| Operating Expenses | 51,345 million | 43,887 million | 38,668 million |
| Operating Profit | 119,437 million | 108,949 million | 66,288 million |

2022 NOPAT Example

NOPAT = Operating Profit x ( 1 – Tax Rate )

I must break this one down as it is a tad confusing.

So, we know the operating profit in 2022 is 119,437 million that doesn’t need to change.

Tax Rate: The tax rate for 2022 is 16.2% but for the calculation you need to express it as a decimal, so I need to divide the tax rate by 100: 16.2% / 100 = 0.162

Calculate (1- Tax Rate): Here we subtract the tax rate from 1 we do this to get the portion of the operating profit that is not paid in taxes : 1 – 0.162 = 0.838

Multiply Operating Profit by (1- tax Rate): Multiply your operating profit by the result from step 3 to find the Net Operating Profit After Tax (NOPAT):

NOPAT = Operating Profit x (1 – Tax rate)

NOPAT = 119,436 million x 0.838

2022 NOPAT = 100,008.408 million

2021

Operating Profit: 108,949 million

Tax Rate: 13.3% converted 13.3 / 100 = 0.133

Calculate Tax Rate = 1 – 0.133 = 0.868

NOPAT = 108,949 million x 0.868 = 94,492.612 million

2020

Operating Profit: 66,288 million

Tax Rate: 14.4% converted 14.4 / 100 = 0.144

Calculate Tax Rate = 1 – 0.144 = 0.856

NOPAT = 66,288 million x 0.856 = 56,822.528 million

Capital Employed = Total Assets – Current Liability

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Total Assets | 352,755 million | 351,002 million | 323,888 million |
| Current Liabilities | 153,982 million | 125,481 million | 105,392 million |
| Capital Employed | 198,733 million  | 225,521 million | 223,496 million |

ROCE (Return on Capital Employed) = NOPAT / Capital Employed

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| NOPAT | 100,008.408 million | 94,492.612 million | 56,822.528 million |
| Capital Employed | 198,733 million | 225,521 million | 223,496 million |
| ROCE | 0.502 | 0.418 | 254.175 |

Return on Assets = Company’s earnings (after tax) / total assets

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Company’s Earnings | 99,803 million | 94,680 million | 57,411 million |
| Total Assets | 352,755 million | 351,002 million | 323,888 million |
| Return on Assets | 28.3% | 27% | 17.7% |

Enterprise Value to EBITDA = Enterprise value / EBITDA

EBITDA (earnings before interest, taxes, demoralization and amortization)

Enterprise Value = Equity Value + Net Debt

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Market Cap | 715,273,292.98 | 698,651,963.12 | 534,758,352.08 |
| Net Debt | 277,106 million | 251,983 million | 218,760 million  |
| Enterprise Value  | 277.82 billion | 252.68 billion | 219.29 billion  |

Net Debt = Total Debt – Cash and Cash Equivalents

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Total Debt | 302,083 million | 287,912 million | 258,549 million |
| CACE | 24,977 million | 35,929 million | 39,789 million |
| Net Debt | 277,106 million | 251,983 million | 218,760 million  |

EBITDA = Operating Profit + Depreciation + Amortization

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Operating Profit | 119,437 million | 108,949 million | 66,288 million |
| Depreciation & am | 11,104 million | 11,284 million | 11,056 million |
| EBITDA | 130,541 million | 120,233 million  | 77,344 million  |

Enterprise Value to EBITDA = Enterprise value / EBITDA

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Enterprise value | 277.82b | 252.68b | 219.29b |
| EBITDA | 130,541 million | 120,233 million  | 77,344 million  |
| Total | 2.13 | 2.101 | 2.831 |

Growth Rates

Growth rate = ending value – beginning value / beginning gross profit x 100

For example, if I was to calculate the Growth rate for a company’s Gross Profits

Growth Rate = 60 – 45 / 45 x 100 that will equal 15 over 45 now times that by 100 and you will get 33.33% that will equal your growth rate.

Let’s work out the growth rate in sales in 2021.

Ending Total Net Sales: 365,817

Beginning Net Sales: 274,515

Growth Rate = ( 365,817 – 274,515 ) x100 (91,302) x 100 Growth Rate = 33.28%

 274,515 274,515

2022

Growth Rate = ( 394,328 – 365,817 ) x100 (28,511) x 100 Growth Rate = 7.79%

 365,817 365,817

2020

Growth Rate = ( 274,515 – 260,174 ) x100 (14,341) x 100 Growth Rate = 5.52%

 260,174 260,174

|  |  |  |  |
| --- | --- | --- | --- |
| Products | 2022 | 2021 | 2020 |
| Year End | 201,471 | 192,266 | 151,286 |
| Year Beginning | 192,266 | 151,286 | 213,833 |
| Growth Rate | 4.79% | 27.04% | -29.20% |

|  |  |  |  |
| --- | --- | --- | --- |
| Services | 2022 | 2021 | 2020 |
| Year End | 22,075 | 20,715 | 18,273 |
| Year Beginning | 20.715 | 18,273 | 16,786 |
| Growth Rate | 6.58% | 13.36% | 8.85% |

|  |  |  |  |
| --- | --- | --- | --- |
| Gross Profits | 2022 | 2021 | 2020 |
| Gross Profit end | 170,782 | 152,836 | 104,956  |
| Gross Profit beg | 152,836 | 104,956 | 98,392 |
| Growth Rate  | 11.75% | 45.63% | 6.67% |

|  |  |  |  |
| --- | --- | --- | --- |
| R&D | 2022 | 2021 | 2020 |
| Year End |  26,251  |  21,914  |  18,752  |
| Year Beginning | 21,914 | 18,752 | 16,217 |
| Growth Rate  | 19.80% | 16.83% | 15.63% |

|  |  |  |  |
| --- | --- | --- | --- |
| Selling, G&A | 2022 | 2021 | 2020 |
| Year End | 25,094 | 21,973 | 19,916 |
| Year Beginning  | 21,973 | 19,916 | 18,245 |
| Growth Rate  | 14.22% | 10.31% | 9.16% |

Dividends Round 2

|  |  |  |  |
| --- | --- | --- | --- |
| DPS | 2022 | 2021 | 2020 |
| Total Dividends Paid | 14,841 B102 | 14,467 C102 | 14,081 D102 |
| Diluted Shares | 6.11 B25 | 5.61 C25 | 3.28 D25 |
| DPS | -2428968.903 | -2578788 | -242897 |

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Dividend Payout Ratio = DPS/EPS

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| Dividends Per S | -2428968.903 | -2578788 | -242897 |
| Earnings Per Share | 6.11 | 5.61 | 3.28 |
| DPR | -397539.9187 | 459677 | 74053 |

Dividend Yield = DPS/Share Price

|  |  |  |  |
| --- | --- | --- | --- |
|  |  |  |  |
| DPS | -2428969 | -2578788 | -242897 |
| Share Price | 150.43 | 146.92 | 112.28 |
| Dividend Yield | -16147 | -17552 | -2163 |

Growth Rates for Main Line Items

|  |  |  |  |
| --- | --- | --- | --- |
| Cash & Cash Eqv | 2022 | 2021 | 2020 |
| Year End | 23,646  | 39,940  | 38,016  |
| Year Beginning | 39,940  | 38,016  | 48,844 |
| Growth Rate | -40.77% | 5.06% | -22.16% |

Marketable Securities

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Years End | 24,658 | 27,699 | 52,927 |
| Year Beginning | 27,699 | 52,927 | 51,713 |
| Growth Rate | -10.99% | -47.66% | 2.35% |

Accounts receivable net

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Years End  | 28,184 | 26,278 | 16,120 |
| Years Beginning | 26,278 | 16,120 | 22,926 |
| Growth Rate | 7.25% | 63.09% | -29.65% |

Inventories

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End | 4,496 | 6,580 | 4,061 |
| Year Beginning  | 6,580 | 4,061 | 4,106 |
| Growth Rate  | -31.66% | 62.12% | -1.10% |

Vendor nontrade receivables

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End | 32,748 | 25,228 | 21,325 |
| Year Beginning | 25,228 | 21,325 | 22,878 |
| Growth Rate | 29.77% | 18.29% | -6.78% |

Other Current Assets

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End | 21,223 | 14,111 | 11,264 |
| Year Beginning  | 14,111 | 11,264 | 12,352 |
| Growth Rate | 40.48% | 25.30% | -8.80% |

Non-Current Assets

Marketable Securities

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End | 120,805 | 127,877 | 100,887 |
| Year Beginning  | 127,877 | 100,887 | 105,341 |
| Growth Rate  | 0.16% | 26.76% | -4.23% |

Property, Plant and Equipment, net

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End | 42,117 | 39,440 | 36,766 |
| Year Beginning  | 39,440 | 36,766 | 37,378 |
| Growth Rate  | 6.78% | 7.28% | -1.64% |

Other Non-Current Assets

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End | 54,428 | 48,849 | 42,522 |
| Year Beginning  | 48,849 | 42,522 | 32,978 |
| Growth Rate  | 11.42% | 14.88% | 28.97% |

Current Liabilities

Accounts Payable

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End | 64,115 | 54,763 | 42,296 |
| Year Beginning  | 54,753 | 42,296 | 37,720 |
| Growth Rate  | 17.07% | 29.49% | 12.13% |

Other Current Liabilities

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End | 60,845 | 47,493 | 42,684 |
| Year Beginning  | 47,493 | 42,684 | 37,720 |
| Growth Rate  | 28.10% | 11.27% | 13.17% |

Deferred Revenue

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End | 7,912 | 7,612 | 6,643 |
| Year Beginning  | 7,612 | 6,643 | 5,522 |
| Growth Rate  | 3.95% | 14.57% | 20.32% |

Commercial Paper

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End | 9,982 | 6,000 | 4,996 |
| Year Beginning  | 6,000 | 4,996 | 5,980 |
| Growth Rate  | 66.37% | 20.09% | 16.47% |

Current Liabilities

Term Debt

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End | 11,128 | 9,613 | 8,773 |
| Year Beginning  | 9,613 | 8,773 | 10,260 |
| Growth Rate  | 15.76% | 9.59% | -14.48% |

Non-Current Liabilities

Deferred Revenue

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End |  |  |  |
| Year Beginning |  |  |  |
| Growth rate  |  |  |  |

Term Debt

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End | 98,959 | 109,106 | 98,667 |
| Year Beginning | 109,106 | 98,667 | 91,807 |
| Growth rate  | -9.30% | 10.60% | 7.47% |

Other Non-Current Liabilities

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Year End | 49,142 | 53,325 | 54,490 |
| Year Beginning | 53,325 | 54,490 | 50,504 |
| Growth rate  | -7.83% | -2.14% | 7.90% |

Calculate Margins/ as a % of net sales.

COGS

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| COGS | 223,546  | 212,981 | 169,559  |
| Net Sales | 394,328 | 365,817 | 274,515 |
| Sum | 56.69% | 58.22% | 61.77% |

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Income Tax Rate

Income Tax Rate = (Income Tax Paid/Taxable Income) \* 100

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Income Tax Paid | 19,573 | 25,385 | 9,501 |
| Taxable Income | 119,103 | 109,207 | 67,091 |
| Income Tax Rate | 16.43% | 23.24% | 14.16% |

Capex as a percentage of sales = Capital Expenditure / Net Sales x 100

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Capex | 42,117 | 39,440 | 36,766 |
| Net Sales | 394,328 | 365,817 | 274,515 |
| Capex Sales % | 10.68% | 10.78% | 13.19% |

Capex as a percentage of fixed assets =

Capital Expenditures / Fixed assets at the beginning of the period x 100.

|  |  |  |  |
| --- | --- | --- | --- |
|  | 2022 | 2021 | 2020 |
| Capex End | 42,117 | 39,440 | 36,766 |
| Capex Beginning | 39,440 | 36,766 | 37,318 |
| Total | 94.47% | 126.75% | 98.52% |