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**Term project**

CORPORATE ANALYSIS OF ENPHASE ENERGY

& ITS INDUSTRY PEERS

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**INTRODUCTION**

The stock we have picked is Enphase Energy Inc. (ENPH). ENPH is an American Energy Company established in 2006 with its headquarters in Fremont, California. It develops and manufactures its products for residential customers. The products are solar micro-inverters, battery energy storage, and EV charging stations. It is also the first company to successfully commercialize the solar micro-inverter, which converts the direct current (generated by solar panel) into alternating current (grid compatible) for use or export.

ENPH is advancing a sustainable future for all. They have installed over fifty-two million micro-inverters in over 2.7 million homes in over 145 countries. This enables people to gain access to clean, affordable, and reliable energy while creating jobs and a more carbon-free future for everyone.

As per Yahoo news and stockregister.com, ENPH’s market cap currently stands at around $44.22 billion. Analysts project the company’s growth forecast for earnings per share (EPS) to be $4.36 for 2022 and about $5.31 for fiscal year 2023. Per the data, EPS growth is expected to be 80.90% for 2022 and 21.80% for the succeeding fiscal year. Wallstreet analysts have also projected the company’s year-on-year revenue for 2022 to grow to $2.3 billion indicating a 66.10% jump.

For the sake of this project, we have also picked the stocks of two industry peers, namely, Micron Technology Inc. (MU) and Intel Corp (INTC). We have calculated different ratios to draw an accurate analysis of ENPH compared to its competitors. We have provided a detailed insight into what each ratio means and how ENPH is performing as per these ratios when compared to its peers.

**FINANCIAL SUMMARY**

In this study, we have performed a detailed analysis of Enphase Energy Inc. (ENPH) and its industry peers, namely, Micron Technology Inc. (MU) and Intel Corp. (INTC) with the help of different ratios like Liquidity ratios, Activity ratios, Profitability ratios, Market ratios and DuPont Analysis.

Based on these calculations, we can summarize that although ENPH has had its drops when compared to its peers, the stock has picked up well and has had a good fiscal year as of 2021. As per analysis, we see that ENPH has a stable debt to equity ratio which indicates that the company is financing with its debt rather than its own resources and has a good balance between the two which goes to show that ENPH uses its debt more significantly than its peers.

ENPH has been doing well overall and the ROE indicates that when compared to its peers. As of 2021, ENPH has the highest ROE (0.34) as opposed to its peers that have 0.13 (MU) and 0.21 (INTC).

Therefore, ENPH is a good stock to invest in as the returns are only increasing and it is a well-known fact that the energy sector is booming right now due to the high awareness of sustainable alternatives.

**LIQUIDITY RATIOS**

Liquidity ratio is primarily used to determine a company’s ability to pay its short-term debt obligations. In other words, it determines if a company can use its current assets to pay off its current liabilities. Given the structure of the ratio, if a ratio is one then it has the exact amount of current assets to cover its current liabilities whereas a ratio below 1 indicates that it is sought after, and a ratio below 1 would imply that its current assets are not sufficient to pay off its current liabilities.

For this study, we have calculated the following liquidity ratios:

1. **Current ratio**

The current ratio is calculated by dividing the current assets of a year by current liabilities of the same year.

**Current ratio = Current assets ÷ Current liabilities**

We have calculated this for each year on the excel sheet provided. As per the graph shown below, we can see that MU has a higher average and growing current ratio as opposed to the other two. However, having an extremely high current ratio is not good too as it implies that the company is not making efficient use of its current assets. As of year 2021, ENPH has the highest current ratio of 3.325317 when compared to MU with 3.098848 as its current ratio and INTC with a current ratio of 2.101741.

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1. **Quick ratio**

The difference between quick ratio and current ratio is that the former only takes into consideration the current assets that can be liquidated within 90 days without bearing an adverse impact on its price. Quick ratio considers all current ratios barring inventories and prepaid expenses. Hence, the quick ratio is also known as Acid test ratio. Therefore, the formula for calculating Quick ratio is as below:

**Quick ratio = (Current assets – Inventories - Prepaid expenses) ÷ Current Liabilities**

As per the graph below, although ENPH quick ratio is dropping for a few years in between, it has picked up well compared to its peers. The average quick ratio of ENPH for 12 years is higher than the other two. As of 2021, we see that ENPH has the highest quick ratio of 3.070235 compared to MU with 2.400374 as its quick ratio and INTC with a quick ratio of 1.709344.

**ACTIVITY RATIO**

Activity ratios help us to analyze how efficiently a company can leverage its assets on the balance sheet, increase revenues and indeed the market capitalization of the firm. These ratios also help to gauge the efficiency of the firms’ operational activities.

1. **Inventory Turnover Ratio**

Inventory Turnover ratio = Net sales/Average Inventory

As per the graph shown below, we can see that ENHP has a higher inventory turnover ratio as opposed to the other two. However, having a very high inventory turnover ratio is not good as it implies that the company is blocking a lot of cash in the inventory which impacts the cash rotation cycle & therefore, leads to an underutilization of the resources. As of year 2021, ENPH has the highest inventory turnover ratio when compared to MU and INTC.

1. **Average Collection period**

Average Collection Period = (Average Accounts receivables/net Credit Sales) x 365

As per the graph shown below, we can see that ENHP has a higher collection period as opposed to the other two. However, having a high collection period is not good as it implies that the company is not able to liquefy its inventory which in turn impacts the cash rotation cycle and therefore leads to an underutilization of the resources. As of year 2021, ENPH has the highest average collection period as when compared to MU and INTC.

1. **Total Asset Turnover Ratio**

Total Asset turnover = Net Sales/Average total Assets

As per the graph shown below, we can see that ENHP has a higher total asset turnover ratio as opposed to the other two. However, having a high total asset turnover is good as it implies that the company can use its assets efficiently to generate cash for the company. A significant dip in the ratio has been experienced by ENPH over the past few years. We can infer that ENPH has not been using its assets efficiently. As of year 2021, ENPH has the highest total asset turnover turnover ratio when compared to MU and INTC.

1. **Average Payable Period**

Average Payable period = [Average Accounts Payable/ (Net sales/365)]

As per the graph shown below, we can see that ENHP has a higher payable period as opposed to the other two. However, having a high payable period is good as it implies that the company has more time to pay to its creditors, which allows the firm to use that time to fund other activities like working capital, paying interest expenses & many more. As of year 2021, ENPH has the highest Average Payable period as when compared to MU and INTC.

**DEBT RATIOS**

Debt ratios or leverage ratios refer to a series of ratios that determine the company’s financial leverage in terms of its assets, equity, and liabilities. It indicates how much of an organization’s capital comes from debt, which is a solid indication of a business doing good on its financial obligations. Debt to equity ratio is one of the most used financial leverages.

For this case, we have considered the following debt ratios:

1. **Debt to Assets ratios**

This ratio shows how much of a business is owned by creditors as compared to the holdings of the company’s shareholders.

**Debt to equity ratios =Total Liabilities ÷ Total Assets**

We have calculated this for each year on the excel sheet provided. As per the graph shown below, we can see that although all companies were at the same level in 2010, INTC has a very high ratio in 2021 as compared to the other two. Having a very high current ratio is not good as it implies that the company is financed more by its creditors instead of its assets. As of year 2021, ENPH has a stable ratio of 0.79 when compared to MU with 0.25 as its DTA ratio and INTC with a ratio of 1.14.

1. **Financial Leverage Multiplier**

This ratio is a measure of a company’s assets financed by debt over common equity or stock. A high multiplier indicates a high reliance of debt over equity.

**Financial Leverage Multiplier = Total asset ÷ Total Equity**

We have calculated this for each year on the excel sheet provided. As per the graph shown below, we can see that although all companies were at the same level in 2010, ENPH has a very erratic ratio through the years as compared to the other two. Having a very high current ratio is not good as it implies that the company is using a lot of debt to finance its assets. As of year 2021, ENPH has a high ratio of 4.84 with MU at 1.34 and INTC with a ratio of 1.77.

1. **Time Interest Earned**

This ratio is a measure of a company’s ability to pay off its debt and meet its obligations based on the current income. A high multiplier indicates the number of times it could cover its debts with the income earned.

**Time Interest Earned = Net Income ÷ Interest Expense**

Values for TIE have been calculated for each year on the excel sheet provided. As per the graph shown below, INTC has an extremely high ratio of 1,317.05 in 2011 as it had a very low interest expense. Having a very high current ratio is good for the company as it implies that the company can pay off their financial obligations with the income they are earning in that particular year. As of year 2021, ENPH has a ratio of 30.61 as compared to MU’s ratio of 151.39 and INTC’s ratio of 132.37.

**PROFITABILITY RATIOS**

Profitability ratio refers to the ability of an enterprise to earn profits from normal operations, which is the basis for its survival and development, and is an indicator of great interest to all parties. There are many indicators that represent the profitability of an enterprise, and the main ones usually used are EPS, net profit margin, ROE, ROA, and operating profit margin. Whether it is investors, creditors or business managers, there is an increasing importance and concern about the profitability of enterprises. Combining report data to calculate the indicators is particularly important to judge the profitability of enterprises.

1. **EPS**

**EPS = Net income at the end of the period ÷ Total number of shares at the end of the period**

Earnings per share, or EPS, is also known as profit after tax per share and earnings per share. It is a fundamental indicator for analyzing the value of each share and reflects the profitability of the company in a comprehensive way. It is the ratio of net income to the number of shares of a company in each period and reflects the after-tax profit per share generated, the higher the ratio, the more profit generated. The chart shows that ENPH's earnings per share have been increasing from negative-to-negative year after year, with a steeper profitability process, while MU has maintained positive earnings year after year, with a strong profitability, and INTC, a blue-chip stock, has maintained a stable earnings performance.

1. **Net Profit Margin**

**Net sales margin = (net profit / sales revenue) × 100%**

Net sales margin, which is the percentage of net profit to sales revenue. In lay terms, this indicator reflects the amount of net profit brought in by each dollar of sales revenue and indicates the level of earnings from sales revenue. It is directly proportional to net profit and inversely proportional to sales revenue. The company must earn more net profit while increasing the amount of sales revenue to keep the net sales margin constant or increase it. By analyzing the changes in the net sales margin, we can encourage enterprises to improve management and profitability while expanding sales. The table below shows that ENPH's net sales margin is rising rapidly, reflecting the characteristics of a fast-growing growth stock. MU and INTC, as relatively large companies in terms of market capitalization, have maintained stable net sales margins and do not need to make major expansion plans.

1. **ROE**

**Return on equity = Net income / Shareholders' equity**

Return on equity is an indicator used to assess the profitability of a company and can be used as an ownership indicator to compare the profitability of different companies within the same industry. It is the ratio of net profit after taxes to the amount of equity invested. Simply put, it is the annual return you can earn after investing money to buy the company. Capital-intensive industries have higher barriers to entry and less competition, while on the contrary industries with high ROE but low assets are easier to enter and face greater competition. So, ROE should be used to compare the companies within the same industries. With respect to the three companies we compare, ROE then presents a less informative graphical form. ENPH shows irregular and sudden changes in 2016 due to the background of a sudden decrease in net assets in the current period, while the other two companies maintain stable values.

1. **ROA**

**Return on assets（ROA） = net profit / average total assets**

Many people equate return on equity with return on assets, but they are not the same. ROE is the ratio of after-tax income per share divided by the book value of shareholders' equity per share, or the total after-tax income of a company divided by the total book value of shareholders' equity, while ROA is the ratio of the total after-tax income (plus interest) to the total assets of a company. The relationship between return on equity and return on assets is ROE = ROA x leverage ratio. Therefore, through the chart, ROA more clearly reflects the effect of asset utilization of the three companies; ENPH increases year by year, MU remains stable, while INTC has an insignificant downward trend.

1. **Operating Profit Margin**

**Operating profit margin = operating profit / operating income (merchandise sales) × 100%**

Operating profit margin is the ratio of an enterprise's operating profit to its operating revenue. It is a measure of the efficiency of an enterprise's operations and reflects the ability of business managers to earn profits through their operations without considering non-operating costs. There are many factors that affect the operating margin, such as the number of sales; the average selling price per unit of product; the manufacturing cost per unit of product; the ability to control overhead costs; and the ability to control marketing costs. ENPH's operating margin improves very quickly from negative to positive earnings, while INTC maintains a stable operating status. MU's operating margin fluctuates more but maintains positive earnings overall.

**Market Ratio**

1. **PE Ratio**

The price-to-earnings ratio is used for valuating a company that measures its current share price relative to its earnings per share (EPS). The price-earnings ratio is one of the most commonly used indicators to evaluate whether the stock price level is reasonable, and it is a stock market indicator with great reference value.

**PE Ratio = Market value per share÷ earnings per share**

We’ve calculated this for each year on the excel sheet provided. As per the graph shown below, we can see that although all companies were relatively at the same level in 2010, ENPH has a very high ratio (168.41) in 2021 as compared to the other 2. A higher price-to-earnings ratio indicates that investors expect the company's future profitability to be higher and its growth to be stronger. As of the year 2021, MU has a relatively stable ratio of 14.13, and INTC has 18.22.

1. **MB Ratio**

MB Ratio refers to comparing the book value with its market value to assess the value of a company. Book value is the book value of a company calculated on the basis of common shareholders' equity, while the market value of a company is determined by its market capitalization.

**MB Ratio = Share Price÷ Net Book Value per Share**

We’ve calculated this for each year on the excel sheet provided. As per the graph shown below, we can see that although all companies were relatively at the same level in 2010, ENPH has a sharp decrease in 2017, but it also has a sharp increase in 2018 as compared to other 2. According to the formula (the ratio between the Share Price and the Net Book Value per Share), we can see that a low ratio (less than 1) could indicate that the stock is undervalued, and a higher ratio (greater than 1) could mean the stock is overvalued. As of the year 2021, MU has a relatively stable ratio of 1.88, and INTC has 2.19.

**Dupont analysis**

DuPont analysis method is used to comprehensively analyze the competitiveness of enterprises and how to improve I. The calculation formula of

**DuPont analysis = Net Profit Margin\*Financial leverage\*Total asset turnover.**

**Net Profit Margin = Net income/Revenue**

**Asset turnover = Revenue/Average Total Assets**

**Financial Leverage = Average total assets/Average shareholder’s equity**

By simplifying the formula, we get  
**DuPont analysis = Net income/Average shareholders’ equity.**

**Hence, the result is still ROE.**

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According to the ROE graph, we can see MU and INTC tend to be gentle curves. However, between the years 2015 to 2017, the curve has a sharp decrease. According to the total asset turnover graph, the total asset turnover is still very high, indicating that the company's (ENPH) operating efficiency is still very high. As per the Net profit margin graph, there is some difference between the years 2010 to 2019 (the difference in profit margin may be due to the difference in product structure), but eventually, it tends to be very close after 2019. By looking at the financial leverage, we find out that the leverage might be the main reason that ROE sharply decreases. ENPH has a sharp increase in financial leverage in 2016 which causes a sharp decrease in ROE (possible that ENPH took out a lot of loans to leverage). This is the power of the DuPont analysis method. It helps facilitate examining your company from three different angles to find out how to improve and the existing advantages and disadvantages of the company.

**CITATIONS**

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