Investment Final: 3M and PPG

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After selecting 3M and establishing through research that the company is under the industry umbrella of “conglomerate”, but also noticing their domineering presence in manufacturing, I have decided to take on analyzing 3M and a competitor, PPG. Furthermore, I have decided to go in depth with 3M as through my excel evaluations, are a better investment overall.

**General Information**

        3M was established in 1902 in Minnesota, and with their five founders their goal was to establish a company that was able to mine from corundum and rocks to evolving being able to be in the industry of science, technology, engineering, and mathematics. 3M chief executive officer is Michael Roman, which he was appointed the position in July of 2018 of a 32 billion dollar company, and the previous (CEO) was Inge Thulin whom was with the company since 1979 and served as its chairman, president, and CEO between 2012-2018. There are 13 board of directors that are in variety of different industries that can bring value through diversity and thought.

There are 19 analysts who are following 3M, tightly. 68% of 3M investors are institutional investors. Investment corporations are the top owner of the institutional investors. While there current share volume is about 1,565,508, with their 90 day average daily volume as 2,472,136. 3M has a lower volume then their competitor PPG which they share volume is 2,601,857, but they have a higher 90-day average volume.

**Financial Statement Analysis**

While looking at the financial data for the past five years for 3m, we can see that the short-term solvency and ability to pay off short term debt is above average when compared to the industry standard. With the quick ratio being that of 1.29 compared to the industry standard of 1.22. On the other hand, long term debt ratios and ability to pay off debt over the long run shows that 3m is in more debt than the standard, with their long-term debt ratio and debt to equity ratios being 1.37 and 2.72 respectively. Similarly, their turnover ratios such as the inventory, accounts receivable, and average collection period are 8.53, 6.6, and 56, which are moderately under average according to NetAdvanage.com. Profitability measures such as return on assets and the profit margin have been steadily declining over the last five years but are significantly above the industry as a whole.

Return on equity was .50 according to NetAdvantage while earnings per shares is just below a dollar at .98. Price to earnings ratio is 18.18.

Proceeding to margins we can see that 3M’s gross margin is 49%, which is healthy comparatively, operating profit margin ad net profit margin are 21% and 16.3% respectively and are not out of line from historical rates.

Lastly, let’s go over some general growth trends in the short term of 5 years. Market value measures state that 3m’s sales growth is fairly “shaky” over the short term, with an average of .8% over the past 5 years. In 2018 3M managed to get a 10% growth rate in net income, but again the 5-year average is 2.1%. EPS 5-year average comes to 5.8%, which is standard within their industry.

**Dividend Growth Model (DGM)**

3M has been paying all their dividends to their shareholders without any issues for more than 100 years and have been increasing the annual dividend for 60 consecutive years. 3M has a automatically reinvested plan that they generate dividends with more 3M stock. It not only is very accessible and easy, but it is a practical way to build more 3M stockholdings. Assuming that they will maintain the growth wait for 3 years, then it will decrease to the industry average 3M stock should be valued at 273.28. Which is $88 over what the current share price is which makes 3M undervalued as of December 31, 2018 by this means of measurement.

**Risk and Return**

With 3M company being a conglomerate industry, they tend to have tough competitors that try to outperform them. 3M is a great ethical company and does a spectacular job with all their products that they are on top of their industry. After running the regression, I found that 3M beta came out to be 1.06 to the S&P 500 index. Their adjusted beta was 1.04 which takes in account the estimate of the industry future beta. It displays the historical data of the stock but the it assumes that a security beta move toward the market average over time. Using the CAPM model, 3M cost of equity was 6.42% and our weighted average cost of capital came out to be 6.02. Calculating it by using the CAPM, cost of equity, beta, adjusted beta, and debt. With calculating the cost of debt, I used the coupon bonds to figure out what it is and I had over 30 bonds, which brought my cost of debt to a 2.74%.

**Discounted Cash Flow Valuation**

While reviewing over 3M history cash flows and it their forecast operation through 2018, it is expected that 3M will increase the free cash flows. From using the discounted free cash flow model, we have gathered that the price should be $63 which makes the current stock price overvalued according to this estimate. This method could be less accurate than the dividend model since there are more assumptions made with the discounted cash flow model. So the DCF should not weigh on the final decision on whether to purchase 3M or not.

Taking everything stated into account I believe it would be safe to say that 3M would be a smart purchase. To what extent, would be determined by the individual investor, but since this is a well-known company that has been around for over a hundred years and with growth trends, I would expect this to be a fairly safe investment.

Resources

* S&P 500 Annual Total Return:. (n.d.). Retrieved from https://ycharts.com/indicators/sandp\_500\_total\_return\_annual
* Stock Analysis on Net. (n.d.). Retrieved from https://www.stock-analysis-on.net/
* Yahoo Finance - Business Finance, Stock Market, Quotes, News. (n.d.). Retrieved from https://finance.yahoo.com/
* (MMM/INSIDER/TRADE). (n.d.). Retrieved from https://www.nasdaq.com/symbol/mmm/insider-trade
* MMM : Summary for 3M Company. (2018, December 12). Retrieved from https://finance.yahoo.com/quote/MMM?p=MMM&.tsrc=fin-srch

*Annual Reports & Proxy Statements*

* 2018: http://s2.q4cdn.com/974527301/files/doc\_financials/2017/Annual/2018\_3M\_Annual\_Report.pdf
* 2017: http://s2.q4cdn.com/974527301/files/doc\_financials/2017/Annual/2017\_3M\_Annual\_Report.pdf
* 2016: http://s2.q4cdn.com/974527301/files/doc\_downloads/2017/Annual/2016\_3M\_Annual\_Report.pdf
* 2015: http://s2.q4cdn.com/974527301/files/doc\_financials/2015/ar/2015\_3M\_Annual\_Report.pdf
* 2014 <http://s2.q4cdn.com/974527301/files/doc_financials/2014/ar/2014_3M_Annual_Report.pdf>
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