**Investment Summary & Thesis**

I am initiating a buy recommendation for 3M with a target price of $245.16. This target price represents a 40% upside from the $175.06 closing price on February 26th, 2021.

**Key Drivers:**

- **Increased spending on research and development (R&D) and capital investment**
  - Part of 3M’s strategy to differentiate themselves from the competition is an emphasis on innovation. While 3M has a host of successful legacy products, they have a well-track goal for each segment to recognize 30% of their revenues from products introduced in the last four years. This culture of innovation has been very successful for 3M and the budget for R&D has been steadily increasing over the last ten years. However, a recent commitment to 6% of sales to R&D marks a significant increase.

- **Strong leadership**
  - Several new Corporate Officers at 3M have ushered in strategies that demonstrate a strong understanding of advantages over competitors. 3M CEO and Chairman of the Board Michael Roman has put forth four target priorities for driving growth: Portfolio, Transformation, Innovation, and People & Culture. This demonstrates a strong understanding of the difference between 3M’s business level strategy and corporate level strategy. While 3M is a manufacturer of many goods, at a corporate level the company is more a portfolio manager that must identify, evaluate, and capture synergies between manufacturing operations.

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**3M’s Market Profile**

<table>
<thead>
<tr>
<th>Ticker</th>
<th>NYSE:MMM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Share Price</td>
<td>$175.06</td>
</tr>
<tr>
<td>Market Cap</td>
<td>103.52B</td>
</tr>
<tr>
<td>Beta</td>
<td>0.95</td>
</tr>
<tr>
<td>Debt / Equity</td>
<td>1.46</td>
</tr>
<tr>
<td>P / E</td>
<td>18.93</td>
</tr>
<tr>
<td>P / Book</td>
<td>7.87</td>
</tr>
<tr>
<td>ROE</td>
<td>47.10%</td>
</tr>
<tr>
<td>Instit. Own</td>
<td>67.30%</td>
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</tbody>
</table>
Company Description

3M, formerly Minnesota Mining and Manufacturing Company, is a multinational manufacturing conglomerate founded in 1902 in Two Harbors, MN. The company offers over 60,000 products grouped into four main business segments: Safety & Industrial, Transportation & Electronics, Healthcare, and Consumer. 3M has 96,000 employees and operates in more than 70 countries across the world.

3M’s business model relies on expertise in product development, manufacturing, and marketing. The company acquires, either through internal development or purchase, roughly 3,000 new patents each year. This culture of innovation is a major differentiator for 3M and helps drive premium margins for the company. It also gives 3M an edge in attracting bright and inquisitive minds thus perpetuating the cycle. While traditional convention is for businesses to be rewarded for specializing their activities, 3M captures value from their wide variance of operations. An obvious benefit of 3M’s heterogeneity is diversification in terms of industry-specific risk.

Headquartered in Maplewood, MN, 3M sees 40.9% of sales from within the United States, 30.5% from Asia Pacific, 19.4% from Europe, Middle East, & Africa, and 9.2% from Latin America & Canada. By business segment, Safety and Industrial is the largest with 34.4% of net sales, Transportation and Electronics with 28.5%, Health Care with 22.0%, and Consumer with 15.1%.

![Total Sales by Geographic Region](image1)

![Total Sales by Business Segment](image2)
Management and Corporate Governance

Corporate Officers

Michael Roman has been the CEO of 3M since July 2018. Under his guidance 3M has undergone a successful reorganization of business groups to better serve customers’ needs. Roman has worked at 3M for 30 years and prior roles include leading 3M’s largest business group, chief strategist, and COO. With this experience he has a well-developed knowledge of the company and its strengths. Roman has advanced four priorities to drive growth, Portfolio, Transformation, Innovation, and People & Culture. These play into the 3M value model of delivering to all stakeholders, including increasing dividends for 61 consecutive years.

Board of Governors

3M currently has 12 members serving on the Board of Governors. All of these members with the exception of Michael Roman (CEO of 3M) and James Fitterling (CEO DOW Inc.) serve on at least one committee, but no more than two committees. The Audit, Compensation, Nominating & Governance, and Science, Technology & Sustainability committees serve to divide responsibilities and power of board members. Three main goals of the Board are (1) Director Orientation and Continuing Education: this serves to ensure that new board members know the company and their role, as well as keeping existing directors up to date on skills and knowledge necessary for their job. (2) Risk Oversight: The Board as a whole as well as individual committees oversee the risk profile and processes for managing the risk of the company. (3) Long-Term Strategies: The Board approves strategic plans and capital allocation on a yearly basis to drive value creation and fundamental company strengths.
Industry Analysis

3M can be placed in the Specialty Industrial Manufacturing industry; however, for analysis of the company’s future outlook it is more useful to examine the industries that define 3M’s business segments.

The industrial industry is currently poised growth. Low interest and mortgage rates will drive new project starts that will fuel industrial industry growth in the short-term outlook. Through 2020, many supply chains were disrupted due to lockdown caused by the COVID-19 pandemic. These interruptions made it impossible to get some materials and raised the prices of others which took a toll on the industrial industry. Restoration of these supply chains and material prices returning to more normal values will compound the effects of low interest rates culminating in a strong rebound for the industry.

Freight tonnage is forecasted to grow up to 25% by the year 2030. This growth expectation for the next ten years should see competition and growth throughout the transportation industry. There is potential for disruption of the industry with the possible adoption of electric vehicles in place of traditional internal combustion engines. While this has the potential to shake up the large players in the transportation industry, 3M’s sales should be relatively unaffected because the nature of their products is not dependent on the type of vehicle.

The healthcare industry has undergone significant changes in the last year again due to COVID-19. It is predicted that the industry will see large numbers of delayed visits and optional procedures returning as vaccine distribution alleviates COVID-19 restrictions. Competition within the industry is expected to be strong and a large trend is investment into digital technology, specifically electronic health records systems. These investments are projected to increase efficiency which could see more visits and increase 3M’s sales in this industry.

The consumer retail industry, due to its broad nature, has seen vastly differing reactions to COVID-19 in the last year. Generally, vaccine distribution and lowering restrictions see more people returning to work. This coupled with stimulus checks has seen increases in consumer confidence and spending. 3M participates mostly in the nondurable portion of the industry which has fared much better in the last year. These staples of home and office supplies are fairly stable and do not expect high growth, rather steady performance with moderate gains.

Looking back into the specialty industrial manufacturing industry 3M is among the top four leaders, all over $100 billion market cap. 3M has always been an industry leader in terms of innovation which could prove extremely beneficial as an uncertain world emerges from the pandemic. If global routines return to normal 3M knows they can rely on certain legacy products to generate profits, but a populous more cognizant of mitigating disease transmission could present a massive opportunity for 3M. Already working in consumer and healthcare industries and spending more than ever on R&D, 3M has the potential for a leap forward in their industry tapping into new customer demands.
Financial Analysis

Operating Performance

3M has a strong, but fairly slow trend in increasing total revenues for the last ten years. Increasing from $26,662 million in 2010 to $32,184 in 2020 represents a compound annual growth rate of 1.90%. EBITDA has grown more impressively in the same timeframe holding a compound annual growth rate of 2.47%. Net margin increased from 2010 to 2015 and held steady for the last five years around 28%.

Profitability

3M has had a very impressive ROE over the last decade with a low of only 24.6%. Since 2015 the ROE has bounced around a little but never fallen below 40%. Diluted EPS for 3M have shown impressive growth as well. In 2010 EPS was $5.63 but has risen with fairly high consistency for the last ten years ending 2020 with $9.25 which represents a compound annual growth rate of 5.09%.
Ratios Over Time

Over the last ten years 3M’s P/E ratio has been lower than Honeywell’s, a main competitor. During this same timeframe, 3M has seen an upward trend in P/E while Honeywell has for the most part remained flat. While 2020 saw a slight decrease in P/E for 3M, I believe coming out of the COVID-19 driven economic downturn, 3M can continue its upward trend making it an ideal investment at this time.

Comparison to Competitors

<table>
<thead>
<tr>
<th>Company</th>
<th>Market Cap</th>
<th>P / E</th>
<th>P / FCF</th>
<th>ROE</th>
<th>Operating Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Johnson &amp; Johnson</td>
<td>424.22B</td>
<td>29.34</td>
<td>58.27</td>
<td>24.50%</td>
<td>19.80%</td>
</tr>
<tr>
<td>Honeywell International Inc.</td>
<td>140.71B</td>
<td>30.14</td>
<td>51.92</td>
<td>26.80%</td>
<td>18.40%</td>
</tr>
<tr>
<td>General Electric Company</td>
<td>106.38B</td>
<td>20.97</td>
<td>-</td>
<td>14.70%</td>
<td>15.10%</td>
</tr>
<tr>
<td><strong>3M Company</strong></td>
<td><strong>103.00B</strong></td>
<td><strong>18.93</strong></td>
<td><strong>31.95</strong></td>
<td><strong>47.10%</strong></td>
<td><strong>22.20%</strong></td>
</tr>
<tr>
<td>Illinois Tool Works Inc.</td>
<td>63.34B</td>
<td>30.53</td>
<td>53.14</td>
<td>80.20%</td>
<td>22.90%</td>
</tr>
<tr>
<td>Emerson Electric Co.</td>
<td>50.90B</td>
<td>24.88</td>
<td>29.70</td>
<td>25.50%</td>
<td>15.70%</td>
</tr>
<tr>
<td>DuPont de Nemours Inc.</td>
<td>37.32B</td>
<td>-</td>
<td>12.87</td>
<td>-7.70%</td>
<td>-11.30%</td>
</tr>
<tr>
<td>Avery Dennison Corporation</td>
<td>14.38B</td>
<td>26.48</td>
<td>48.84</td>
<td>42.30%</td>
<td>9.00%</td>
</tr>
<tr>
<td>Arconic Corporation</td>
<td>2.33</td>
<td>16.97</td>
<td>-</td>
<td>0.80%</td>
<td>4.70%</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>24.78</strong></td>
<td><strong>40.96</strong></td>
<td><strong>28.24%</strong></td>
<td><strong>12.94%</strong></td>
<td></td>
</tr>
</tbody>
</table>

Comparable companies were considered using two factors. First a screener narrowed down on companies within the specialized industrial manufacturing industry. Second competitors were deemed as useful considerations if they too manufactured a wide and diverse set of products, not necessarily in the same industries as 3M, but across several industries to achieve a like diversification. In comparison to competitors, 3M is in the middle of the pack as far as market capitalization. 3M trades cheaply in comparison to competitors in terms of both price to equity and price to free cash flow placing well below the averages. 3M also has impressive profitability metrics compared to the competition ranking 2
d in both ROE and operating margin and far above the average. Comparing to competitors strengthens the case in favor of investing in 3M. The only instances of rivals comparing to 3M’s above average ROE and operating margin are all countered by trading at much higher multiples of earnings and FCF than 3M.
Valuation Analysis

For the valuations in this report the 3M historical data used was obtained from S&P 500 Capital IQ. A compound annual growth rate for dividends was calculated to be 10.73% over the last ten years (roughly the same position in time as the current business cycle) and 8.27% over the entire history of 3M dividends. Cost of equity capital was calculated to be 5.62% using the 10-year T-note rate of 1.35%, a market risk premium of 4.50% and beta of 0.95.

Dividend Discount Model (DDM)

Scenario #1: For the first DDM calculation a three-stage model was used. Stage 1 dividend growth was 8.00% which was rounded down from the historical compound annual growth rate and assumed for 10 years. Stage 2 was 4.00% for another 10 years and a constant 1.00% growth rate was assumed for stage 3. These assumptions resulted in a calculated fair value of $249.28

Scenario #2: The second DDM simply assumed a 3.00% constant growth rate which is highly conservative compared to historical data and recent trends. This model resulted in a calculated fair value of $241.05

Free Cash Flow to Equity Model (FCFEM)

In an effort to calculate an accurate fair price the FCFEM used an average of the last three years’ unlevered free cash flows because 2020 had an exceptionally high FCF. This resulted in a FCF compound annual growth rate of 3.83%. This resulted in a calculated fair price of $529.84. This price seems unattainable and was ultimately not used for the final target price of this report; however, it points to the fact that 3M’s cash flows have characteristics associated with high value. I also believe that this valuation is inflated due to a shift in capital structure at 3M in the last ten years which has resulted in debt overtaking equity for the main component.

Conclusion

Through the use of use of two different valuation models and conservative growth numbers based on values calculated form historical data all indications point to 3M being currently undervalued. The final price target of this report, $245.16 is a simple average of the two DDM valuations and does not include the even higher FCFEM valuation. This price target represents a 40.04% upside in a one-year timeframe.
Investment Risks

International

- As a multinational company, 3M faces several international risks. Foremost among these is foreign exchange risk. Roughly 60% of 3M revenue comes from outside the United States which could be adversely affected if the US dollar strengthens significantly against currencies that are important to 3M. Additionally, geopolitical and regulatory risks are present to an investment in 3M. Tariffs and/or trade wars as well as regulatory changes in any of the 70+ countries that the company does business in could damage performance.

Materials Price Fluctuation & Availability

- 3M manufacturing operations greatly rely on raw materials and energy. The supply chains for these resources can be disrupted or even terminated by natural disasters or other unexpected events. Sustained interruptions could massively damage 3M’s performance. 3M does have systems in place to prevent and mitigate damage in the occurrence of disruptions. However, stringent inventory management combined with development and qualification of other supply sources cannot wholly remove this risk.

Credit Downgrade

- Currently 3M has a AA- credit rating and is facing a credit rating downgrade if they take on too much more debt. This would hurt the company’s cost of capital and could limit acquisitions or other actions in the future. However, 3M is currently far more levered than usual and as such are acutely aware of their position. Taking advantage of current low interest rates seems like a beneficial move and as of now 3M has not overextended themselves in this pursuit.

Portfolio Management Actions

- Any changes to the 3M portfolio, be it acquisition, divestures, or alliances, have the potential to boost or damage the company’s performance. It is essential that in these portfolio altering actions 3M integrates and captures synergies quickly to capture profit. While 3M has a strong track record, changes to the company’s portfolio will always be a risk 3M faces.

Environmental Lawsuits

- 3M is currently involved in a lawsuit centered around the use of perfluoroalkyls and polyfluoroalkyls in their products. In 2000 the company voluntarily started phasing out and entirely stopped using these substances in 2002, but the nature of the strong bonds of these compounds means that they do not break down easily. While the lawsuit involving pollution from these chemicals has already been settled with the state of Minnesota, federal and other state matters regarding this issue are ongoing.
Sources

3M Company 2019 Annual Report
3M Company 2020 Annual Report
S&P 500 Capital IQ
Finviz
Yahoo Finance
Macrotrends
CNBC