Memo to: MCJ Capital Partners

From: M. Carter Johnson

Re: ROE & F. Donaldson Brown

Date: 9/15/2020

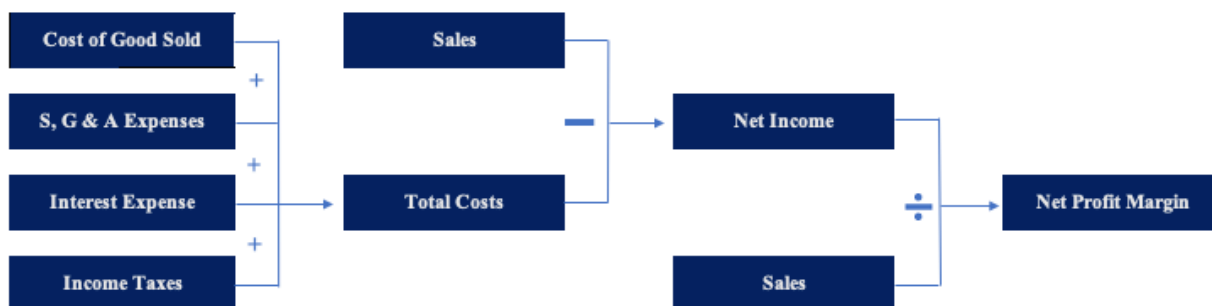
In 1914, a young chemist by the name of F. Donaldson Brown was hired at Dupont Chemical Company. What started as an original role in sales, Brown was eventually moved to the treasury department. It was here that Brown was given the task to assist the company with its new objective of allocating capital in a manner that diversified the company's operations. To assist with the endeavor, Brown devised an innovation that measured the different financial drivers of a company. This innovation became known as the "Dupont Analysis" and is still used today to understand what is internally contributing to the returns of a company.

Last month we discussed the initial components we consider when looking at a company. In doing so, we briefly introduced the concept of Return on Equity (ROE). As refresher ROE can tell us how good a company is at the task of redeploying its retained earnings. Remember, we want a good business that has a sustainable competitive advantage, and the ability to reinvest those profits back into its "machine." The example we discussed was if you put $100 in a bank account and you earned $20 interest after year one, your ROE would be 20%. However, if in year two your account paid you $20 interest again but this time on $120 (original $100 plus year one $20), your ROE would regress to 16.6%. Play this scenario out again and in the third year ROE drops to 14.2%. For businesses it's not always easy to reinvest profits at the previous return levels. Therefore, if we see a company that is maintaining a high ROE over an extended period, it's an early hint to us that not only might they have a sustainable competitive advantage, but they've also figured out how to clear our second requirement - the ability to reinvest internally.

The trouble with ROE is that like most financial metrics it can be manipulated. This is where the Dupont Analysis comes in handy. In this month's memo we visually tour the components of the Dupont Analysis to better understand how to differentiate "good ROE."

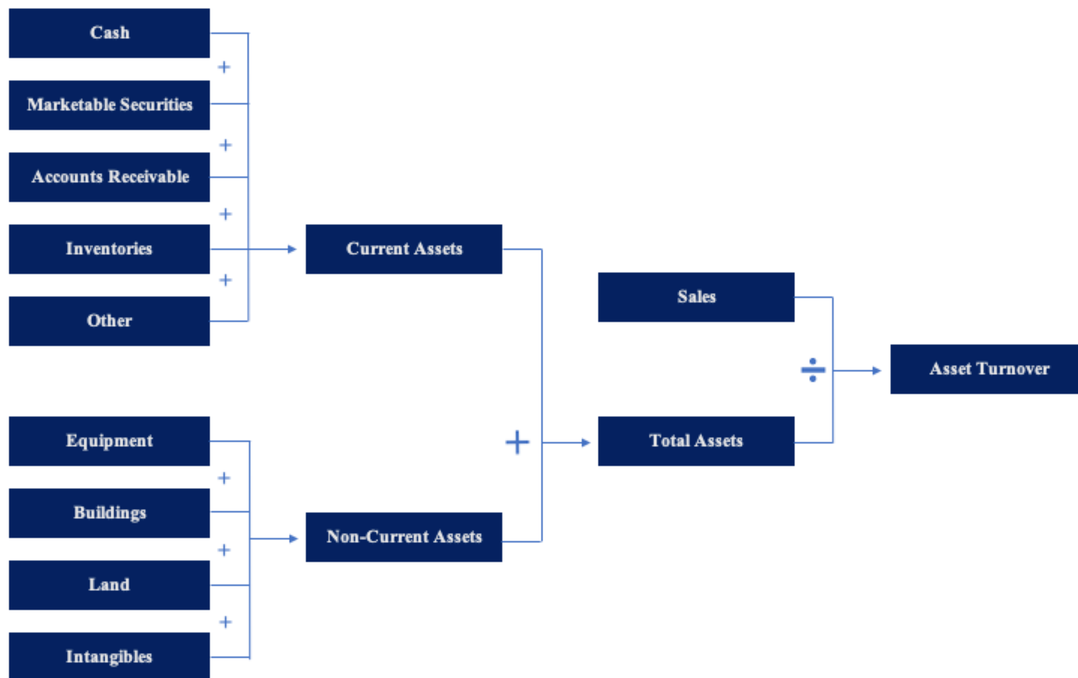
<u>Net Profit Margin</u>

The Dupont Analysis consist of three components that span both the income statement and the balance sheet. The first component is the Net Profit Margin, which we arrive at through the income statement. Visually, you can see what goes into calculating the net profit margin below. Unlike the operating margin which we discussed last month, net profit margin takes into account items like interest expense and income taxes. It also incorporates interest income and other non-operating income the business might take in. Much like the operating margin, when analyzing the net profit margin we prioritize a high and consistent number. If a company is able to grow its top line sales and has a consistently healthy net profit margin, that's a good business.



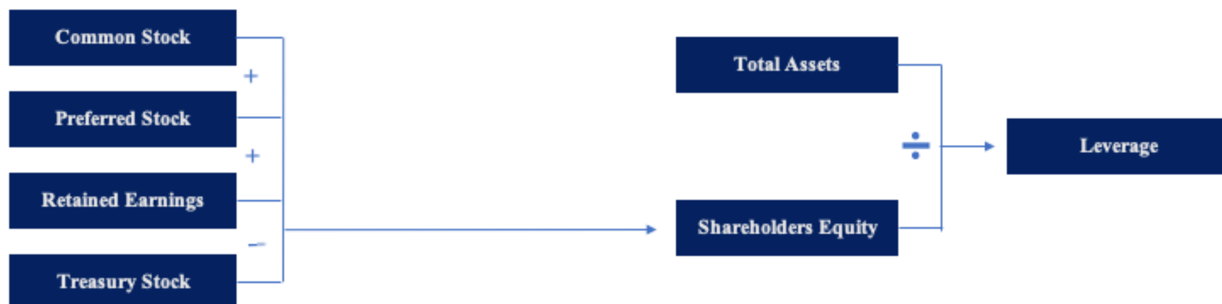
Asset Turnover

The second component of the Dupont Analysis is the Asset Turnover calculation. We arrive at this number by taking the sales from the income statement and dividing by the total assets of the business. Total assets are found on the balance sheet and are a fancy way of saying what the business owns. A business uses its assets to generate sales. The more effective a company is at using its assets, the higher its asset turnover number will be. What we don't want is a business that sits on a lot of cash or inventory and rarely generates any sales. Remember, we want a company that has a sustainable competitive advantage and the ability to reinvest internally. If a company has a sustainable competitive advantage but can't profitably reinvest internally, it begins to show in a diminishing asset turnover ratio.



Leverage

The final component of the Dupont Analysis is leverage. To understand a company's leverage we simply divide the total assets by shareholders equity. Shareholders equity is the sum of common stock, plus preferred stock plus any earnings retained by the company, less any stock the company has purchased back (treasury stock). A company that has dwindling profit margins or a declining asset turnover ratio can prop up their ROE through leverage. What is important to understand at this stage of the Dupont Analysis is that different business models operate with different capital structures. What is high leverage for one type of company is low for another. By focusing on the long term trend in the capital structure we can identify sudden changes and the general use of leverage deployed by management.



Bringing It All Together

The final step of the Dupont Analysis is to multiply the net profit margin, by the asset turnover ratio, by the overall leverage. This sum gives us the ROE, and with it that much better of an understanding as to what created the metric. What is useful about the Dupont Analysis is that it allows you to zoom in on different areas of the business to understand what changed in the business to contribute to the ROE.

Revisiting our example from last month, we can see below the components that have contributed to Chemed Inc.'s high ROE. Net profit margin has drastically expanded in recent years, a result of lower corporate tax rates and improvements in the cost structure. Despite a slight dip in 2019, asset turnover has trended upward indicating the company is becoming more efficient at utilizing its assets. Lastly, and perhaps most reassuring, the company doesn't seem to be relying on financial leverage to boost its ROE, as this metric has been trending lower since its 2007 high of 2.11.

Chemed Inc. (CHE)	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
x Net Profit Margin	5.82	5.86	6.2	6.39	6.34	6.24	5.46	6.82	7.14	6.9	5.89	11.53	11.3
x Asset Turnover	1.41	1.50	1.51	1.55	1.67	1.73	1.61	1.66	1.80	1.82	1.85	1.88	1.73
x Leverage	2.11	1.91	1.72	1.80	1.92	1.90	1.99	1.91	1.66	1.68	1.70	1.65	1.75
= ROE	17	17	16	18	20	20	18	22	21	21	19	36	34

Overall, the Dupont Analysis is far from perfect. Critics will rightfully point out the equation gives no indication as to if the components of the formula are actually within a reasonable range for the company. In addition, varying accounting practices of the company can distort the economic reality of the inputs utilized in the Dupont Analysis. However, criticism aside, the Dupont Analysis does provide a simple and fun framework to assess the quality of ROE. It's not perfect, but it is a helpful tool in how we analyze companies.

Until next month,

M. Carter Johnson

Readers are advised that the material herein should be used solely for educational purposes. This memorandum expresses the views of the author as of the date indicated and such views are subject to change without notice. MCJ Capital Partners LLC does not purport to tell or suggest which investment securities members or readers should buy or sell for themselves. Readers should always conduct their own research and due diligence and obtain professional advice before making any investment decision. MCJ Capital Partners LLC will not be liable for any loss or damage caused by a reader's reliance on information obtained in any of our newsletters, presentations, special reports, email correspondence, or on our website. Our readers are solely responsible for their own investment decisions.

The information contained herein does not constitute a representation by the publisher or a solicitation for the purchase or sale of securities. Our opinions and analyses are based on sources believed to be reliable and are written in good faith, but no representation or warranty, expressed or implied, is made as to their accuracy or completeness. All information contained in our newsletters, presentations or on our website should be independently verified with the companies mentioned. The editor and publisher are not responsible for errors or omissions.

At the time of this writing, MCJ Capital Partners and accounts actively managed by MCJ Capital Partners has a long position in Chemed Inc. (CHE) and would benefit from overall price appreciation of the stock.