A Case Study in the Use and Potential Misuse of Non-GAAP Financial Measures

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Firms reporting under US GAAP are allowed to supplement financial information with non-GAAP measures. We examined 6 Firms in the chemical industry and looked at what information was presented (Dow, Du Pont, Monsanto, FMC, PPG, Praxair). We use the 2014 Annual Report so that we would have comparable data for all companies. For 2 firms we looked at numbers presented in Cap IQ and in Bloomberg and compared them to the numbers presented by the company (Dow and Du Pont). The numbers reported by the firms and the analysts differed greatly.

INTRODUCTION

Income statements of many corporations typically have the following format. Note that there are no unusual or infrequent items list below.

Sales	$X,XXX
Less: Cost of goods sold	X,XXX
Gross Profit	X,XXX
Less: Selling, general, administrative expenses	X,XXX
Less: Other operating expenses	X,XXX
Operating Income (EBIT)	X,XXX
Less: Interest Expense	X,XXX
Add: Interest Income	X,XXX
Income before income taxes (EBT)	X,XXX
Income Taxes	X,XXX
Net Income	$X,XXX

EBIT is used in various ratios. More popular ratios could include the following:

- ROA: (Net Income + Interest, net of taxes)/Average Assets. The view in accounting is that taxes are very important and any number used in ratios should be after taxes. In Accounting, the number used would be labeled EBI. In Finance the same ratio is calculated using EBIT. In general, most accounting books would use EBI while most finance books would use EBIT. The same rule applies to all the following ratios.

- Times-interest-earned (TIE) ratio: EBIT / |Interest Expense|. This ratio measures the coverage or cushion of operating earnings over interest expense. Failure to pay interest expense would lead to the corporation's financial distress. The cushion and financial distress probability have an inverse relationship. So if the TIE cushion increases, financial distress probability should decrease and vice versa.
- Fixed-charge-coverage ratio (FCCR): EBIT / |Fixed Charges|. This ratio expands upon the TIE by including more items in the denominator. Besides interest expense, the denominator may include sinking fund payments and/or lease payments. Failure to pay sinking fund obligations also leads to financial distress. Although not as serious, failure to pay lease payments could affect the corporation's credit rating. It would also be embarrassing to be evicted from a leased corporate headquarters or have plant and equipment removed from corporate use! Because the denominator of FCCR is on a before-tax basis, sinking fund must also be adjusted to a before-tax basis. Sinking fund payments are done so after-tax.
- Degree of operating leverage (DOL): (% change in EBIT) / (% change in sales). Operating leverage is dependent on a corporation's fixed cost relative to its total cost. High amount of fixed cost relative to total cost would result in higher operating leverage. Thus, DOL would increase. Higher DOL would probably imply a higher breakeven point. However, incremental sales beyond breakeven would yield proportionally higher EBIT. Kindly note that calculating DOL requires the percent change in EBIT or Operating Income.
- Price-to-EBIT (P/EBIT) ratio: (Stock Price) / EBIT. This ratio is used for stock valuation by the use of comparable method. For example, a security analyst would find the (P/EBIT) ratio of comparable firms, then multiply this ratio by the subject firm's EBIT to obtain stock price of subject firm.
- In accounting and finance, a popular measure is used. The P/E ratio: (Stock Price)/EPS. EPS is earnings per share and must be calculated by the corporation. It is measured by dividing Net Income to common stockholders by the weighted average number of shares.

EBITDA (Earnings Before Interest, Taxes, Depreciation, and Amortization)

Depreciation and amortization are non-cash charges. It can be argued that an operating executive's performance should not be influenced by depreciation and amortization. Thus, EBITDA = EBIT + |Depreciation & Amortization|. Depreciation and amortization is often included in cost of goods sold and/or selling, general, administrative expenses. Depreciation and amortization usually do not appear as a line item on the Income Statement. To find it, one uses the depreciation and amortization listed on the Cash Flow Statement, Operating Activities section. It is interesting to note that many corporations in the telecommunications and petroleum industries do list depreciation and amortization as a specific line item on their Income Statements.

Furthermore, many financial analysts use EBITDA to facilitate forecasting. For example, the process is facilitated by taking a firm's current or typical EBITDA margin (= EBIT / Sales), then multiplying by forecasted sales for next year. This would result in a forecasted EBITDA for next year. Most likely, this would be an improvement over using: (EBIT margin) x (forecasted sales), since EBIT includes depreciation and amortization charges that could distort any forecasts. Depreciation and amortization is highly dependent on whether or not new capital assets are placed into service. So, it is probably better to focus on EBITDA forecasts, then account for expected depreciation and amortization later.

Similar to securities analysts using (P / EBIT) ratio for valuation analysis, these same analysts could also use: (P / EBITDA) ratio. The analyst would find comparable (P / EBITDA) ratios of similar companies, then multiply this ratio by the subject company's EBITDA to obtain intrinsic stock price.

With so many uses of EBIT and EBITDA, it is important to know how each corporation determines these amounts. Corporations who have no unusual or infrequent line items (e.g.: restructuring costs, inventory write-downs, etc.) in their Income Statements should yield relatively straight forward EBITs and EBITDAs. This would facilitate good analysis. Corporations with significant unusual or infrequent line items on their Income Statements could have differing results depending on whether or not they adjust for these items. Such different results could distort analysis. Let the financial statement reader beware!

The theory behind all these calculations is that we can evaluate any business by using the present value of all future cash flows to evaluate any asset or business. Because a discount rate usually uses the weighted average cost of capital (WACC), it would make sense not to include interest in the calculation because it would be counted twice. Adding back Depreciation and Amortization to Net Income also makes sense since these are non-cash expenses.

In accounting the best financial statement to look for would be the Statement of Cash Flows. Cash from operations would be a good measure to use. The only problem is that operating activities include interest as an expense while dividends, shares transactions and principal repayments are included in financing activities. Financial analysts clearly find that accounting information must be modified in order to be useful.

The biggest issue all analysts face is to determine what is "normal income"? In order to forecast, we have to eliminate all "abnormal income". Which types of income is non-recurrent or non-business related? Most analysts try to calculate these numbers and more firms publish their own calculations. Because there is no definition or requirements of what is "normal" or "recurring". GAAP does not address any of these issues. Therefore these numbers are called non-GAAP measures. Because these are not GAAP measures, they cannot be audited or "certified."

BRIEF HISTORY OF NON-GAAP

U.S. SEC officially began regulating non-GAAP measures after the Sarbanes-Oxley Act of 2002 was passed by Congress and signed by President George W. Bush. Supposedly, non-GAAP measures were required to be: 1) no omissions nor no false material facts that could cause misleading pro-forma financial information; 2) pro-forma financial statements reconciled with U.S. GAAP. In 2003, the SEC produced Regulation G which addressed non-GAAP measures. In 2010, the SEC permitted non-GAAP measures to appear in SEC filings, if such measures had appeared in other financial reports. (Ernst & Young, "Technical Line," April 28, 2016)

The following table illustrates what is required by Regulation G of the SEC:

TABLE 1
REGULATION G REQUIREMENTS

	Regulation G	Item 10(e)
Scope	All public disclosures by Exchange Act registrants of information that contains non-GAAP financial measures, including: • press releases; • conference calls; • powerpoint presentations; and • other media.	All filings with the SEC under the Securities Act and the Exchange Act, including: • Securities Act Registration Statements; • Free Writing Prospectuses (if included or incorporated by reference into a registration statement); • Annual Reports on Form 10-K; • Quarterly Reports on Form 10-Q; • Current Reports on Form 8-K; and • Proxy Statements.
Required Disclosure	Whenever a registrant makes public a non-GAAP financial measure, it must: • present the most directly comparable financial measure calculated and presented in accordance with GAAP; and • reconcile the differences between the non-GAAP financial measure to the most directly comparable GAAP measure.	Whenever a registrant presents a non-GAAP financial measure, it must (in addition to the requirements for Regulation G): • present, with equal or greater prominence, the most directly comparable financial measure calculated and presented in accordance with GAAP; • reconcile the differences between the non-GAAP financial measure and the comparable GAAP measure; • disclose the reasons why the registrant's management believes that the presentation of the non-GAAP financial measure provides useful information to investors regarding the registrant's financial conditions and results of operations; and • to the extent material, disclose the additional purposes, if any, for which the registrant's management uses such non-GAAP financial measure.
Earnings Releases	A registrant must: • present the most directly comparable GAAP financial measure in the release; and • reconcile the two measures.	Subsection (1)(i) of Item 10(e) applies to a registrant's Item 2.02 Form 8-K (pursuant to which earnings releases are required to be furnished to the SEC). Registrants must either include in the body of the Current Report or in the earnings release itself: • disclosure as to why management believes any non-GAAP financial measure included in the release is useful; and • for what additional purposes, if any, management uses the measure.
SEC Non-GAAP Measure Prohibitions	A registrant is not permitted to make any non-GAAP financial measure public if it contains a material misstatement or omits information needed to make the measure not misleading.	A registrant is not permitted to: • exclude charges or liabilities that required or will require cash settlement from non-GAAP liquidity measures (except for EBIT and EBITDA); • adjust a non-GAAP performance measure to eliminate or smooth a nonrecurring, infrequent or unusual item where such item is reasonably likely to recur within two years or there has been a similar charge or gain within the prior two years; or • use titles or descriptions of non-GAAP financial measures that are the same as, or confusingly similar to, titles or descriptions used for GAAP financial measures. Companies may adjust for recurring charges within the two-year look forward/look back window, but the adjustment may not be classified as non-recurring, infrequent or unusual.

Disclosure requirements from S*kadden, Arps, Slate, Meagher & Flom LLP*

PwC commented recently on Non-GAAP measures: "Non-GAAP financial measures are most effective when they are accompanied by clear and transparent disclosure of what is included or excluded from the measure and the supporting rationale. A robust discussion of how management uses non-GAAP financial measures, if applicable, and the context in which they should be considered increases their usefulness." (Point of View, July 2014)

On May 17, 2016, the SEC issued an update on non-GAAP measures. No rules were changed. However, as PwC summarized, companies were in violation if: 1) measures eliminated normal, recurring, or cash operating expenses; 2) measures presented inconsistently between periods, without proper disclosure and explanation; 3) measures eliminated non-recurring charges, but included non-recurring gains. (www.pwc.com/us/en/cfodirect/publications/in-brief/sec-non-gaap-financial-measures.html)

RESULTS AND DATA

We looked at the information published by six companies in the chemical industry.

TABLE 2

	Dow		Du Pont		FMC		Monsanto		PPG		Praxair	
	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014	2013	2014
Revenues - as reported	**57,080**	**58,167**	**35,734**	**34,723**	**3,875**	**4,038**	**14,861**	**15,855**	**14,265**	**15,360**	**11,925**	**12,273**
10K Operating Profit							3,570	4,075			2,625	2,608
Margin							24.02%	25.70%			22.01%	21.25%
Company Reported EBIT			4,019	4,599	561	587	3,460	3,952				
Margin			11.25%	13.24%	14.47%	14.54%	23.28%	24.93%				
Cap IQ EBIT	4,589	5,645	4,266	3,712	717	715	3,571	4,137	1,550	1,843	2,599	2,715
Margin	8.04%	9.70%	11.94%	10.69%	18.50%	17.71%	24.03%	26.09%	10.87%	12.00%	21.79%	22.12%
Bloomberg EBIT	4,276	5,887	3,527	3,947	659	545	3,570	4,075	1,441	1,831	2,625	2,608
Margin	7.49%	10.12%	9.87%	11.37%	17.01%	13.51%	24.02%	25.70%	10.10%	11.92%	22.01%	21.25%
Company Reported EBITDA	10,545	8,944	5,360	5,965							3,804	3,958
Margin	18.47%	15.38%	15.00%	17.18%							31.90%	32.25%
Cap IQ EBITDA	7,203	8,322	5,869	6,307	844	846	4,186	4,828	2,002	2,319	3,708	3,885
Margin	12.62%	14.31%	16.42%	18.16%	21.78%	20.96%	28.17%	30.45%	14.03%	15.10%	31.09%	31.65%
Bloomberg EBITDA	6,957	8,634	5,130	5,662	786	677	4,185	4,766	1,893	2,307	3,734	3,778
Margin	12.19%	14.84%	14.36%	16.31%	20.29%	16.76%	28.16%	30.06%	13.27%	15.02%	31.31%	30.78%
10K Income before income taxes	6,804	5,265	3,489	4,991	616	485	3,429	3,827	1,226	1,416	2,447	2,395
Margin	11.92%	9.05%	9.76%	14.37%	15.90%	12.01%	23.07%	24.14%	8.59%	9.22%	20.52%	19.51%
10K Reported Adjusted EBITDA	8,362	9,337										
Margin	14.65%	16.05%										

Dupont reported Adjusted EBIT and adjusted EBITDA in their "Dupont Data Book" and in their quarterly earnings announcements, not their annual report.

Dow did not publish any non-GAAP information in their annual report but presented EBITDA and modified EBITDA information with their Earnings Announcement. DuPont published both EBIT and EBITDA numbers in their annual report. FMC and Monsanto published EBIT numbers in their annual report. PPG did not publish information on EBIT or EBITDA, they concentrated on GAAP numbers. Finally, Praxair presented information on EBITDA.

As stated in the *Wall Street Journal* on June 28th, 2016, only 29 firms in the S&P 500 stock index used only GAAP information. This means that more than 94% of the firms in that index chose to present supplemental non-GAAP information. Not surprisingly the additional information increase profits by an average of 44%.

We also looked if the EBIT and EBITDA numbers were comparable to the same numbers published by analysts. We looked at the numbers published in Bloomberg or in Capital IQ and compared them to the self-reported numbers. We noticed large differences between the numbers reported by the firms and the analysts.

We decided to look into the details of the calculations for the two largest companies, Dow and DuPont. Since each firm had to give the details of their calculations, this was relatively easy to obtain. The details for Dow are shown in Table 3.

TABLE 3
DOW RECONCILIATION

	Dow	
RECONCILIATION	**2014**	**2013**
Net Income available to Common Shareholders	3,432	4,447
Preferred Stock Dividends	340	340
Net Income attributable to non controlling interest	67	29
Provision for Income Taxes	1,426	1,988
Income before income taxes	5,265	6,804
Interest Expense and Debt Discount Amortization	983	1,101
Interest Income	(51)	(41)
EBIT	6,197	7,864
Depreciation and Amortization (CF statement)	2,747	2,681
EBITDA	8,944	10,545
Asset impairments and related costs $	73	194
Warranty accrual adjustment of exited business	100	
Restructuring plan implementation costs		44
1Q12 Restructuring charge		(16)
4Q12 Restructuring charge		(6)
Asbestos-related charge	78	
Gain from K-Dow arbitration		(2,161)
Gain on sale of Dow Polypropylene Licensing and Catalysts business		(451)
Gain on sale of a 7.5 percent ownership interest in Freeport LNG Development		(87)
Gain on sale of ownership interest in Dow Kokam LLC		(26)
Dow Corning implant liability adjustment	(407)	
Charge related to Dow Corning's Clarksville, Tennessee, site abandonment	500	
Chlorine value chain separation costs	49	
Loss on early extinguishment of debt		326
ADJUSTED EBITDA	9,337	8,362

Some of the changes such as adding back taxes, interest, depreciation and amortization were expected. The difficulty was to determine what constituted non-operating activities. In the case of Dow, notice that only the elimination of the charge for asset impairment was common to both years. All the other elements were a one-time charge which are consistent with non-recurring charges, usually eliminated while calculating EBITDA. What is also interesting is that Dow calls this number modified EBITDA.

The details for DuPont are shown in Table 4.

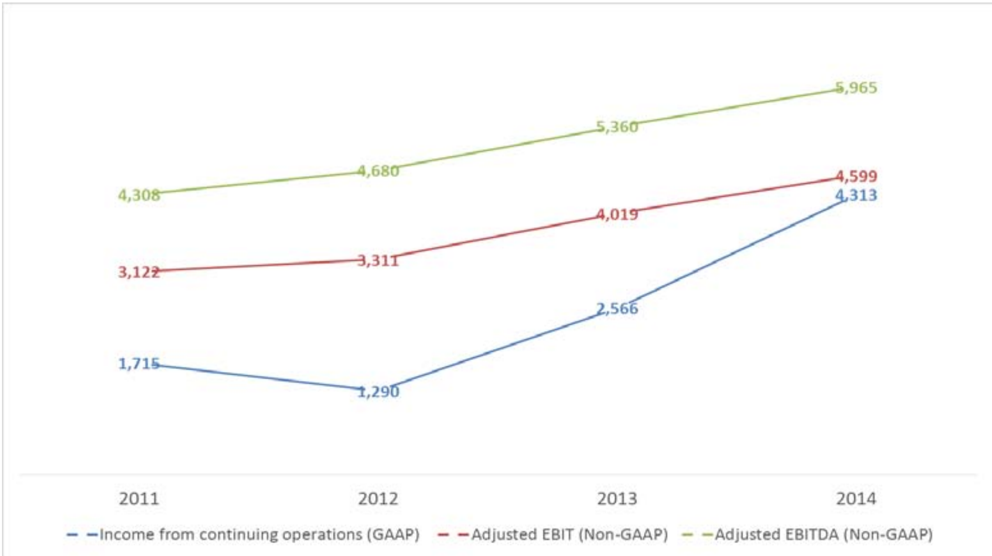
TABLE 4
DUPONT RECONCILIATION

	DuPont			
	2011	2012	2013	2014
Income from continuing operations before income taxes (GAAP)	1,715	1,290	2,566	4,313
Add: Significant items – pretax charge/(benefit)	467	930	485	(209)
Add: Non-operating pension and OPEB – pretax	532	651	533	128
Operating earnings before income taxes (Non-GAAP)	2,714	2,871	3,584	4,232
Less: Net income attributable to noncontrolling interests	39	24	13	10
Add: Interest expense	447	464	448	377
Adjusted EBIT (Non-GAAP)	3,122	3,311	4,019	4,599
Add: Depreciation and amortization	1,186	1,369	1,341	1,366
Adjusted EBITDA (Non-GAAP)	4,308	4,680	5,360	5,965

For DuPont, there are fewer details given about some of the changes. The expression used is significant items and non-operating pension and OPEB. The lack of details may make it easier to manage. It was also unusual that DuPont presented its table for the last four years. Usually, the information is presented for three years.

We also noticed that the Non-GAAP numbers looked smoother than the GAAP numbers. As shown in Figure 1.

FIGURE 1
TREND OF DIFFERENT INCOME MEASURES



The non-GAAP numbers show a steady smooth increase in income. This would show a less risky stable company than the GAAP numbers. We then looked at the details of the numbers calculated by Bloomberg and Standard & Poor's. The numbers for Dow are shown in Table 5.

TABLE 5
COMPARISON BETWEEN DOW CAP IQ AND BLOOMBERG

2014 Income statement in millions of USD	DOW	Cap IQ	Bloomberg
Net sales	58,167	58,167	58,167
Cost of sales	47,464	47,464	47,464
Asset Write down		23	23
Legal settlement		108	108
Warranty accrual adjustment of exited business			100
Adjusted COGS Bloomberg	47,464	47,333	47,233
Gross Profit	10,703	10,834	10,934
Research and development expenses	(1,647)	(1,647)	(1,647)
Selling, general and administrative expenses	(3,106)	(3,106)	(3,106)
Amortization of intangibles	(436)	(436)	(436)
Dow Corning implant liability adjustment			(407)
Charge related to Dow Corning's Clarksville, Tennessee, site abandonment			500
Chlorine value chain separation costs			49
Goodwill and other intangible asset impairment losses	(50)		
Restructuring charges (Credits)	3		
Asbestos- related charge	(78)		
Equity in earnings of nonconsolidated affiliates	835		
Sundry income (expense) - net	(27)		
EBIT / Operating Profit	6,197	5,645	5,887
Depreciation and Amortization	2,747	2,747	2,747
EBITDA	8,944	8,392	8,634
Asset impairments and related costs	73		
Warranty accrual adjustment of exited business	100		
Asbestos-related charge	78		
Dow Corning implant liability adjustment	(407)		
Charge related to Dow Corning's Clarksville, Tennessee, site abandonment	500		
Chlorine value chain separation costs	49		
Adjusted EBITDA	9,337	8,392	8,634

The main difference is that Dow decided to exclude its equity in earnings of nonconsolidated affiliates. The question remains why did Bloomberg and Standard & Poor's decided to keep this amount in? Furthermore, why did Dow eliminate the asbestos related cost for EBITDA and then added it back in its modified EBITDA. Which number should an investor use? EBITDA or modified EBITDA? These are all interesting questions for our students and should lead to a good discussion in class.

We then looked at the details for DuPont. Table 6 shows the detailed information.

TABLE 6
COMPARISON BETWEEN DUPONT CAP IQ AND BLOOMBERG

2014 Income statement in millions of USD	DuPont	Capital IQ	Bloomberg
Net Sales	28,406	28,406	28,406
Royalty income	156		
Interest Income	129		
Equity in loss of affiliates, net	(36)		
Net gain on sales of business and other assets	710		
Net exchange gains	196		
Interest items, insurance recovery, litigations settlements & others	122		
Total	29,683	28,406	28,406
Cost of goods sold	17,023	17,023	17,023
Other operating charges	645	645	645
Insurance Settlement		210	
Non Operating Income		(33)	
Other One-time Charges			(58)
Employee Separation	476		
Significant Pretax Charge	209		
Non-operating pension and OPEB – pretax	(128)		
Net income attributable to non-controlling interests	10		
Selling, general and adminstrative expenses	4,891	4,891	4,891
Research and development expense	1,958	1,958	1,958
Operating Profit / EBIT	4,599	3,712	3,947

It seems that DuPont did not exclude interest income or Royalty income. It also included the gain on the sale of assets. Usually, these numbers are excluded for the calculation of EBIT or EBITDA. The charge for employee separation was excluded by both stock analysts forms but not by DuPont. Again the question remains why? Should other income be included or excluded? Should the gain on the sale of Asset be included? Again the difference is what constitute recurring normal income?

ASSIGNMENT FOR CLASS DISCUSSION

After reading the discussion above, please prepare the following questions for class discussion. Focus on Dow and DuPont results.

- Answer the questions presented after Table 5 and Table 6.
- Which elements are non-recurring?
- Which elements are excluded from operating?

- Which method do you prefer: non-GAAP or GAAP? Why?
- Why are the numbers so different?
- Is this another procedure for companies to "manipulate" earnings?
- Why would a firm use earnings announcements instead of the Annual Report?
- Are we back to the days of "income smoothing"?

CONCLUDING COMMENTS

In conclusion, it goes back to the 2 key characteristics of accounting information: relevant and reliable. Non-GAAP information is probably more relevant while GAAP is probably more reliable. Do we prefer reliable audited information or relevant unaudited information? Until accountants and finance professionals agree on what they want and what should be provided, we will continue to have this discussion.