

Do Earnings Lie? – A Case Demonstrating Legally-Permissible Manipulation of Corporate Net Income

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This case demonstrates the flexibility management has in determining Net Income under Generally Accepted Accounting Principles (GAAP). Most courses dealing with Financial Accounting present the student with technical material, and focus on applying GAAP as though management exercises no subjective input in the process. The present case forces students to re-think this assumption and to learn how much leeway management really has in applying GAAP rules. After completing this case, students see that there is a substantial range of potential reported Net Income amounts, depending upon the estimates and assumptions they select.

INTRODUCTION

Do earnings lie? An unequivocal “YES” may seem too strong an answer, but there are many grey areas surrounding management’s choice of the timing and amount of items reported on their company’s Income Statement and Balance Sheet. These choices can lead to very different outcomes, even though such accounting is perfectly legal and is in accordance with Generally Accepted Accounting Principles (GAAP). Many investors assume that financial accounting has rules that are set in stone, and that it is an exact discipline with only one correct answer. In reality, this statement cannot be further from the truth.

GAAP allows management to choose between methods of accounting for certain assets (e.g., LIFO vs. FIFO inventory method, alternative depreciation methods for fixed assets, and lease-accounting). Furthermore, there are many areas where management must make estimates (e.g., the allowance for bad debts for products sold on credit, estimation of useful lives of long-term physical assets for depreciation, and impairment of intangible assets with indeterminable useful lives). Collectively, the estimates, assumptions and accounting choices made by managers can lead to markedly different reported Net Income numbers, and different carrying values for assets, liabilities and equity, all of which can misrepresent/mislead financial statement users as to a company’s financial situation or how well it is performing (Easton, et.al., 2011, p.1-19).

It is fairly well established that corporate management is under pressure to deliver the kind of results that impress different company stakeholders. Share prices react strongly to the sign of the change in earnings, managers are under pressure to ensure earnings increase and/or meet beat analysts’ forecasts for their own personal wealth gain (Nichols and Wahlen, 2004). Shareholders, for instance, want a good (realized) return on equity number that surpasses their marginal required return on equity. Wall Street

Analysts, who provide buy/sell/hold recommendations for the stock, in part base their analyses on corporate financial statements and what they imply for share-pricing. The impressions of each of these groups influence share prices and thereby affect managers' performance evaluations and wealth as well as the firm's cost of capital. Credit rating agencies monitor a number of company financial indicators obtained from the financial statements to develop their ratings of outstanding corporate debt. These ratings have direct consequences for determining the future cost of borrowing for the company and, ultimately, its future capital investment spending and growth.

This case presents a teaching approach that is more comprehensive than what commonly appears in accounting textbooks. The aim is to have students experience how a situation that appears to involve clearly- and unambiguously-stipulated GAAP, can result in more than one method of application with more than one correct answer leading to very different end results and conclusions about a company's financial performance. To understand the demonstrations given in this case, students are expected to possess a basic understanding of concepts learned in Intermediate Accounting I and II, which accounting majors typically take in their junior year. The case demonstrates that even in a relatively simple context, there is no one correct "answer" but rather a multitude of potential correct income values. This wide dispersion of answers leads to equally diverse implications for the perceived financial performance of a company. An additional benefit of the case is that students can treat it as a simulation tool in which they vary assumptions and estimates, and witness firsthand how all variables, individually and collectively, affect the reported bottom-line Net Income number. The points illustrated in this case are very often overlooked or mentioned in passing in textbooks that seem more interested in teaching GAAP rules in a static environment rather in a dynamic and interactive one.

DEVELOPMENT OF THE CASE

In this case, students acting in two contrasting roles, make decisions regarding the selection of accounting methods and estimates. The first role is that of an aggressive manager who wishes to increase income, the second a conservative manager who wishes to avoid overstating income. The case at hand requires students to make decisions about: (a) estimates of uncollectible accounts, (b) useful lives of physical assets, (c) impairment charges of intangible assets, (d) estimates of future warranty costs, (e) selection of inventory valuation methods (LIFO versus FIFO), (f) selection of depreciation methods (straight-line versus declining balance), and (g) determination if the current lease agreement should be accounted for as an operating or as a capital lease. The case is conducted in a dynamic and an interactive way that imparts realism to the exercise. We believe that this case offers students very useful and interesting insights, and proves to be a valuable learning tool not only for undergraduate accounting majors, but also for students pursuing a Master's in Accounting or an MBA with an Accounting concentration.

Below is a hypothetical **Unadjusted** Balance Sheet and Income Statement for the year ended December 31, 2012. Additional information is provided allowing students to prepare both an **Adjusted** Balance sheet and Income Statement making decisions under different sets of assumptions based on their assigned role:

**BALANCE SHEET
AT DECEMBER 31, 2012 (UNADJUSTED)**

ASSETS:		LIABILITIES:	
Current assets:		Current liabilities:	
Cash	\$14,740	Accounts payable	\$50,468
Accounts receivable (less allowance)	24,039	Unearned revenue	<u>10,000</u>
Inventory	1,569,500	Total current liabilities	60,468
Prepaid Insurance	<u>24,000</u>	Long-term liabilities:	
Total current assets	1,632,279	Notes Payable	<u>250,000</u>
		Total Liabilities	310,468
Long-term assets:		STOCKHOLDERS' EQUITY:	
Property and equipment (less: accumulated depreciation)	500,000	Common stock, no par	251,676
Patent	<u>5,000</u>	Retained Earnings	<u>1,575,135</u>
Total long-term assets	505,000	Total Stockholders' equity	1,826,811
TOTAL ASSETS	\$2,137,279	TOTAL LIAB. AND EQUITY	\$2,137,279

**INCOME STATEMENT
FOR THE YEAR-ENDED DECEMBER 31, 2012 (UNADJUSTED)**

Sales	\$2,233,109
Less: selling and admin expenses	655,974
Lease expense	<u>2,000</u>
NET INCOME	\$1,575,135

Additional Information:

* Prepaid Insurance was paid on January 1, 2012. The policy offers coverage for two years.

* Unearned Revenue represents a deposit received from a customer on December 20, 2012. The customer has received part of the order. One item costing \$2,000 is on backorder and has not been shipped to the customer yet.

* A one-year Note Payable for \$250,000 was obtained on September 1, 2012. The interest rate is 8%. All principal and interest are due on September 1, 2013.

* The gross amount of Accounts Receivable totaled \$24,039. (The firm's credit policy requires payment within 60 days). Industry guidelines indicate uncollectible accounts are generally in the range of 1 to 12% of the ending accounts receivable balance. (Note that management very often sets percentages based on an aging schedule, not just on the total accounts receivable balance, but for ease of presenting solutions these percentages will be used).

* The company uses Straight-Line Depreciation for its Plant and Equipment. Plant and Equipment costs consist of the following:

Building	350,000 (range 30 to 40 years)
Furniture	130,000 (range 10 to 20 years)
Computers	<u>20,000 (range 2 to 5 years)</u>
TOTAL	500,000

* Inventory costs are as follows:

Purchase Date	Units	Unit price	Total price
1/1/12	500	385	192,500
3/1/12	400	415	166,000
5/1/12	700	450	315,000
8/1/12	500	490	245,000
10/1/12	600	525	315,000
12/1/12	600	560	<u>336,000</u>
	3,300		1,569,500
Units sold	<u>2,900</u>		
Units left	400		

* Most products sold include a one-year warranty. Industry guidelines indicate warranty costs represent about 1-3% of sales revenue.

* The company purchased a patent for \$5,000 on January 1, 2012 with a remaining legal life of 10-years. However, estimated cash flows each year, over the next 10 years, are on average \$500 per year. The incremental borrowing rate used to discount these cash flows to present value should be 8% a year. The present value is therefore, $\$500 \times (\text{PVIFA}, n=10, i=8\%) = \$500 \times (6.7101) = \$3,355$.

* On January 1, 2012 the company signed a 5-year lease for a copier requiring payments of \$500 at the end of each quarter (March 31, June 30, Sept. 30 and Dec. 31). The market value of the copier is estimated to be between \$9,000 and \$9,500. At the purchase date, the present value of the minimum lease payments using an 8% annual rate is: $\$500 \times (\text{PVIFA}, n=20, i=2\%) = \$500 \times (16.3514) = \$8,176$. The unadjusted financial statements currently show the impact of the lease payments as an operating lease ($\$500 \times 4 = \$2,000$).

REQUIREMENTS OF THE CASE

Task: Prepare an adjusted Income Statement and Balance Sheet. Use a statutory tax rate of 35% to record income taxes payable and income tax expense.

If you are assigned to Group A, you are aggressive in your estimates, you are told you want to report the highest Net Income possible since:

- 1) Management may receive higher bonuses based on favorable financial results.
- 2) If reported Net Income is above analyst's expectation of net income, then share price may increase and management's stock options and stock holdings will increase in value. However, if reported earnings are below expectations investors are disappointed and stock prices may fall (Brown and Caylor, 2005).
- 3) Management may have minimum ratios to maintain according to debt covenants in their borrowing agreements. This gives them an incentive to manage income in order to avoid debt-covenant violations.

If you are assigned to Group B, you are told to be conservative in your estimate so as to avoid overstating results for shareholders and potential investors since:

- 1) The market may value more conservative earnings numbers. Aggressive earnings management is unsustainable in the long run.
- 2) The new CEO may be shifting costs to the current period from the future periods in order to record less expense and report higher income in future years. This allows the new management to blame poor current performance on prior management and take a “big bath” (rid the Balance Sheet of costs that would otherwise be experienced in the future).

ANSWERS TO THE CASE

I. Answer by an aggressive manager -- assigned to Group A:

Each group has latitude in selecting financial reporting estimates and methods. A reasonable solution for Group A is presented below. Group A was charged with the goal of selecting GAAP methods and estimates to report the largest Net Income possible.

First, address the calculation of items that are objectively determined by management:

* Calculation of insurance expense is $\frac{1}{2}$ the \$24,000 as one year is used up = \$12,000.

* Calculation of amount of earned income: (10,000 balance in “unearned income”) less \$2,000 which is still on backorder - \$8,000 of earned income.

* Calculation of interest expense is the \$250,000 loan * .08 * 4/12 months = \$6,667.

Second, address the calculation of items that are subjectively determined by management:

- 1) Management can reasonably assert that several customers are expected to delay payments but still pay their obligation, hence an estimate of uncollectible accounts receivable within the industry guideline is: $\$24,039 * .01 = \240
- 2) Calculation of Depreciation expense using the Straight-Line Method. Management can reasonably choose estimated useful lives at the upper end of the reasonable range in order to lower the amount of depreciation expense.

	<u>Cost</u>	<u>Estimated useful life</u>	<u>Depreciation expense</u>
Building	\$350,000	40 years	\$8,750
Furniture	130,000	20 years	6,500
Computers	20,000	5 years	4,000
TOTAL	\$500,000		\$19,250

- 3) *FIFO* method of valuing inventory is selected in order to show the lowest cost of goods sold: $(1,569,500 - \text{ending inventory } (400 \text{ units} * \$560 \text{ per unit}) = 1,345,500$.
- 4) Warranty expense is calculated using the low end of the industry range in order to show the lowest reasonable amount of expense: $\$2,233,109 \text{ sales} * .01 = \$22,331$.
- 5) Management would choose not to write down the patent as the undiscounted expected future cash flows are equal to the book value of the patent (10 years * \$500=\$5,000). However, amortization for the patent will be calculated using its remaining estimated legal life: $\$5,000/10 \text{ years} = \500 of amortization expense per year.
- 6) Management will wish to record the lease as an operating lease. They can do so by using the high end of the market value range (\$9,500) so that the present value of minimum lease payments of \$8,176 is less than 90% of market value: $\$9,500 * .9 = \$8,550$. There will still be lease expense of \$2,000 ($=\$500 * 4$) and this already was included in the unadjusted financial statements.
- 7) Income before tax is \$176,647, so income taxes are $.35 * \$176,647 = \$61,826$.

**INCOME STATEMENT
FOR THE YEAR-ENDED DECEMBER 31, 2012(ADJUSTED)**

Sales	\$2,241,109
Less. Cost of goods sold	<u>1,345,500</u>
Gross margin	895,609
Less: selling and admin expenses	655,974
Insurance expense	12,000
Interest expense	6,667
Uncollectible accounts expense	240
Depreciation expense	19,250
Warranty expense	22,331
Lease expense	2,000
Amortization expense	<u>500</u>
Income before taxes	176,647
Income tax expense	<u>61,826</u>
NET INCOME	\$114,821

**BALANCE SHEET
AT DECEMBER 31, 2012(ADJUSTED)**

ASSETS:		LIABILITIES:	
Current assets:		Current liabilities:	
Cash	\$14,740	Accounts payable	\$50,468
Accounts receivable (less allowance \$240)	23,799	Unearned revenue	2,000
Inventory	224,000	Interest payable	6,667
Prepaid Insurance	<u>12,000</u>	Warranty liability	22,331
Total current assets	274,539	Income tax payable	<u>61,826</u>
		Total current liabilities	143,292
		Long-term liabilities:	
Long-term assets:		Notes Payable	<u>250,000</u>
Property and equipment (less: accumulated depreciation of \$19,250)	480,750	Total liabilities	393,292
Patent	<u>4,500</u>	STOCKHOLDERS' EQUITY:	
Total long-term assets	485,250	Common stock, no par	251,676
		Retained Earnings	<u>114,821</u>
		Total Stockholders' equity	366,497
TOTAL ASSETS	\$759,789	TOTAL LIAB. AND EQUITY	\$759,789

2. Answer by a conservative manager -- assigned to Group B:

Each group has latitude in selecting financial reporting estimates and methods. A reasonable solution for Group B is presented below. Group B was charged with the goal of selecting GAAP methods and estimates to report the most conservative Net Income number possible so as not to disappoint or mislead investors:

First, address the calculation of items that are objectively determined by management:

* Calculation of insurance expense is $\frac{1}{2}$ the \$24,000 as one year is used up = \$12,000.

* Calculation of amount of earned income: (10,000 balance in “unearned income”) less \$2,000 which is still on backorder - \$8,000 of earned income.

* Calculation of interest expense is the \$250,000 loan * .08 * 4/12 months = \$6,667.

Second, address the calculation of items that are subjectively determined by management:

- 1) Management can reasonably assert that an estimate of uncollectible accounts receivable within the industry guideline is: $\$24,039 * .12 = \$2,885$
- 2) Calculation of Depreciation expense using the Straight-Line method. Management can reasonably choose shorter estimated useful lives that are still within the reasonable range in order to increase the amount of depreciation expense.

	<u>Cost</u>	<u>Estimated useful life</u>	<u>Depreciation expense</u>
Building	\$350,000	30 years	\$11,666
Furniture	130,000	10 years	13,000
Computers	20,000	2 years	10,000
TOTAL	\$500,000		\$34,666

- 3) LIFO method of valuing inventory is selected in order to show the highest cost of goods sold: $(1,569,500 - \text{ending inventory } (400 \text{ units} * \$385 \text{ per unit}) = 1,415,500)$
- 4) Warranty expense is calculated in order to show the highest expense possible: $\$2,233,109 \text{ sales} * .03 = \$66,993.$
- 5) Because the undiscounted expected future cash flows of the patent (10 years * \$500=5,000) are equal to the book value of the patent, there is a rationale for management to write down the patent in order to be conservative. The incremental borrowing rate used to discount these cash flows to present value is 8% a year. The present value therefore is \$500 (PVIFA, n=10,i=8%) = \$500 (6.7101) = \$3,355. The recorded patent impairment loss is \$1,645.
- 6) The lease should be recorded as a CAPITAL LEASE if we use the lowest subjective market value of \$9,000. The present value of the minimum lease payments is \$8,176, which is greater than 90% of 9,000 = \$8,100. Calculation of the amortization schedule for the lease is shown below with the journal entries to change the reporting from an operating to a capital lease.

	Payment	Interest	Principle	new balance
1/1/2012				8176.00
3/31/2012	500.00	163.52	336.48	7839.52
6/30/2012	500.00	156.79	343.21	7496.31
9/30/2012	500.00	149.93	350.07	7146.24
12/31/2012	500.00	142.92	357.08	6789.16
3/31/2013	500.00	135.78	364.22	6424.94
6/30/2013	500.00	128.50	371.50	6053.44
9/30/2013	500.00	121.07	378.93	5674.51
12/31/2013	500.00	113.49	386.51	5288.00
3/31/2014	500.00	105.76	394.24	4893.76
6/30/2014	500.00	97.88	402.12	4491.64
9/30/2014	500.00	89.83	410.17	4081.47

12/31/2014	500.00	81.63	418.37	3663.10
3/31/2015	500.00	73.26	426.74	3236.36
6/30/2015	500.00	64.73	435.27	2801.09
9/30/2015	500.00	56.02	443.98	2357.11
12/31/2015	500.00	47.14	452.86	1904.25
3/31/2016	500.00	38.09	461.91	1442.34
6/30/2016	500.00	28.85	471.15	971.19
9/30/2016	500.00	19.42	480.58	490.61
12/31/2016	500.00	9.81	490.19	0.42

* Leased asset	8,176.00	
Lease payable		8,176.00
* Interest expense	613.16	
* Lease payable	1,386.84	
Lease expense		2,000.00
* Depreciation exp (8,176/5yrs)	1,636.00	
Accumulated Depreciation		1,636.00

7) Income before taxes is \$42,530, so income taxes are $.35 * \$42,530 = \$14,886$.

**INCOME STATEMENT
FOR THE YEAR-ENDED DECEMBER 31, 2012(ADJUSTED)**

Sales	\$2,241,109
Less. Cost of goods sold	<u>1,415,500</u>
Gross margin	825,609
Less: selling and admin expenses	655,974
Insurance expense	12,000
Interest expense	7,280
Uncollectible accounts expense	2,885
Depreciation expense	36,302
Warranty expense	66,993
Impairment expense	<u>1,645</u>
Income before taxes	42,530
Income tax expense	<u>14,886</u>
NET INCOME	\$27,644

**BALANCE SHEET
AT DECEMBER 31, 2012(ADJUSTED)**

ASSET:		LIABILITIES:	
Current assets:		Current liabilities:	
Cash	\$14,740	Accounts payable	\$50,468
Accounts receivable(less allowance \$2,885)	21,154	Unearned revenue	2,000
Inventory	154,000	Interest payable	6,667
Prepaid Insurance	12,000	Warranty liability	66,993
Total current assets	201,894	Income tax payable	14,886
		Lease payable	6,789
		Total current liabilities	147,803
Long-term assets:		Long-term liabilities:	
Property and equipment (less: accumulated depreciation of \$34,666)	465,334	Notes Payable	250,000
Leased asset	6,540	Total liabilities	397,803
Patent	3,355		
Total long-term assets	475,229	STOCKHOLDERS' EQUITY:	
		Common stock, no par	251,676
		Retained Earnings	27,644
		Total Stockholders' equity	279,320
TOTAL ASSETS	\$677,123	TOTAL LIAB. AND EQUITY	\$677,123

CONCLUSIONS

The most aggressive accounting estimates lead to a Net Income amount of \$114,821 which is $\$114,821/\$2,241,109 = 5.12\%$ of sales (profit margin). In contrast, the most conservative accounting estimates lead to a Net Income amount is \$27,644 which is $\$27,644/\$2,241,109 = 1.23\%$ of sales (profit margin). Using more aggressive accounting estimates reports a bottom line Net Income amount which is over four times higher than using conservative estimates.

***Students, Shareholders, Creditors, Wall Street Analysts, Board of Directors, Credit Rating Agencies—
Beware and do your own homework!***

REFERENCES

Brown and Caylor (2005). A Temporal Analysis of Threshold Propensities and Valuation Consequences. *The Accounting Review*, 80, (2), 423-440.

Easton, McNally, Fairfield, Sommers & Zhang (2011). Financial Statement Analysis and Valuation, 3 edition. Cambridge Business Publishers.

Nichols and Wahlen (2004). How Do Earnings Numbers Relate to Stock Returns? A Review of Classic Accounting Research with Updated Evidence. *Accounting Horizons*, 18, (4), 263-286.

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